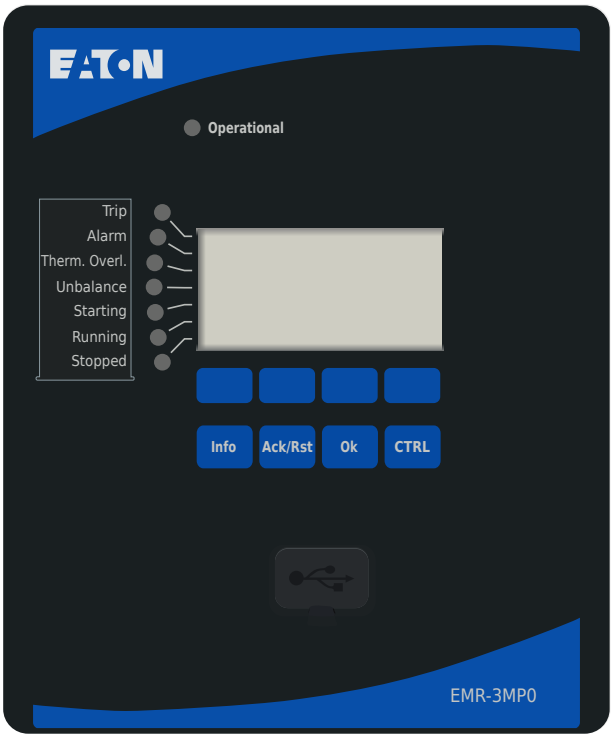
EMR-3MP0

Motor Relay

Reference Manual



DM version: 3.6.a
English

Instruction Leaflet MN026012EN

Original Document Revision B Build 51726

Original reference manual

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1 About This Reference Manual

This document is a reference of all the Setting Values, Direct Commands and Signals of the EMR-3MP0. In other words, it lists all parameters that are available (or can be made available) with the (optionally) full featured versions of the EMR-3MP0 protection device.

CAUTION!

This document does not intend to give long and/or detailed description, nor does it intend to replace the full Technical Manual in any way. Only a quite short description is given for each parameter.

Every E-Series protection device operates using a lot of digital values of various types. Throughout our Technical Documentation, we are talking of “settings” (or “parameters”) or “signals” or “(measured) values”, depending on the type.

Please consult the Technical Manual, in particular Chapter “Modules, Settings, Signals and Values”, for details of the existing data types.

The firmware of every E-Series protection device can be thought of being sub-divided in several independent function blocks, the so-called “modules”. Every protection function, for example, is a module of its own. But one of the fundamental concepts of a E-Series protection device is to implement this with great consequence: The functionality of calculating statistical data is a module (named »Statistics«), every communication protocol is a module, the control of switchgear devices is a module (named »Ctrl«), but the properties of the switchgear itself is part of another module. There is even a general protection module (named »Prot«) that interacts all specific protection modules.

Note that on the panel (HMI) of the protection device and in many setting dialog windows of the *PowerPort-E* operating software, the module name is often omitted whenever it is clear from the menu branch. This means the parameters are often displayed only with their individual parameter names, i. e. simply *»Function«* instead of the full-blown *»50P[1] . Function«*. This increases the overview and simplifies all configuration and operation work; however, it is good to know that the writing *»Function«* is just an abbreviation. In fact, **every** parameter **always** belongs to a module, and therefore – to make this concept absolutely clear – the reference tables have always the module name added in front of every parameter name.

Especially for protection functions it is often required to have several instances active. For example, overcurrent protection usually has several “stages”, and all of these are running at the same time (using their individual setting values). Therefore it is an important feature of every E-Series protection device that a lot of modules exist in several “instances”, which are simply numbered: For the overcurrent protection, for example: »50P[1]«, 50P[2]«, …

In the reference tables, usually every module has its own dedicated chapter, which lists the available number of instances at the beginning. Then, however, in the sub-chapters listing the various parameter types, only the first instance (e. g. »50P[1]«) is mentioned, because all the other instances are identical anyway.

Structure of a Reference Table

The top-level chapters in this Reference Manual essentially reflect the top-level menu branches, and each of these has sub-chapters dedicated to the various modules

belonging there. This results in a mixture of menu and module categories, that might be confusing at a first glance. We, however, are convinced that it makes looking up parameter properties easy: It would be very inconvenient to strictly reflect the menu branches, because most modules can be deactivated if they are not needed for a particular application. And it would be confusing if the tables in this Reference Manuals would mix all the modules together, because then active and inactive modules / parameters would all be mixed.

For each parameter, there is a table with its properties, looking like this:

Module . Parameter	[Menu Path to This Parameter]	
Default Value For some parameters: • Availability restrictions	Value Range	Perm.
Type	*Short descriptive text explaining the functionality of this parameter.*	

“Type” is the data type of the parameter, which is denoted by a small icon. The following types are possible:

- Setting Parameter
- Direct Control
- Input State
- Signal (Output State)
- Statistical Value
- Counter
- (Measuring) Value
- Dialog — Such a dialog can feature several data objects using a special representation and/or functionality.

“Perm.” means “permission”, i. e. the access level and password that is required to modify the parameter. (Please refer to the “Security” chapter in the full Technical Manual for details.)

“ Adapt. Param.” means that this parameter supports Adaptive Parameter Sets. (See the “Adaptive Parameter Sets” section in the User Manual.)

For some parameter types (e. g. Input and Output States), the second row (default, value range, permission) is useless and therefore omitted.

Example of a parameter:

50P[1] . **Mode**	[Device Planning]	
Non-directional	Selection List ⮡ Mode: -, Non-directional, Forward, Reverse	S.3
General Operation Mode		

This means that one can find the parameter in the menu [Device Planning], and its values are picked from a selection list named “Mode”. The “⮡” arrow indicates a cross-reference (hyperlink) into the “Selection Lists” chapter, and a click takes you to a table that lists all available choices. The access level “S.3” means the access level “Supervisor-Lv3”, which is required to modify the parameter.

Audience of This Manual

The manual serves as working basis for:

- Engineers in the protection field,
- commissioning engineers,
- people dealing with setting, testing and maintenance of protection and control devices,
- as well as trained personnel for electrical installations and power stations.

All functions concerning the type code will be defined. Should there be a description of any functions, parameters or inputs/outputs which do not apply to the device in use, please ignore that information.

This manual describes the (optionally) full featured versions of the devices.

All technical information and data included in this manual reflect their state at the time this document was issued. We reserve the right to carry out technical modifications in line with further development without changing this manual and without previous notice. Hence no claim can be brought based on the information and descriptions this manual includes.

We do not accept any liability for damage and operational failures caused by operating errors or disregarding the directions of this manual.

No part of this manual is allowed to be reproduced or passed on to others in any form, unless *Eaton* have approved in writing.

This Reference Manual should be part of the delivery scope when purchasing the device, but can also be downloaded from the Eaton website.

Information Concerning Liability and Warranty

Eaton does not accept any liability for damage resulting from conversions or changes carried out on the device or planning (projecting) work, parameter setting or adjustment changes done by the customer.

The warranty expires after a device has been opened by others than *Eaton* specialists.

Warranty and liability conditions stated in *Eaton* General Terms and Conditions are not supplemented by the above mentioned explanations.

2 Hardware

2.1 Device Configuration

EMR-3MP0	**-2**	**#**	**#**	**#**	**#**
Hardware Variant 1					
4 Digital Inputs | 4 Relay Outputs | Analog Output | IRIG-B		**A**			
Hardware Variant 2					
Standard CT input terminals with shorting block, Phase Current 1A/5A, Ground Current 1A/5A			**0**		
MP-3000-compatible CT input terminals, Phase Current 5A, Ground Current 5A			**9**		
Communication					
Without				**A**	
RS 485: Modbus RTU | DNP RTU				**B**	
Ethernet: Modbus TCP | DNP UDP, TCP				**C**	
Fiber Optics: Profibus-DP				**D**	
D-SUB: Profibus-DP				**E**	
Fiber Optics: Modbus RTU | DNP RTU				**F**	
RS 485/D-SUB: Modbus RTU | DNP RTU				**G**	
Ethernet: IEC 61850 communication | Modbus TCP | DNP UDP, TCP				**H**	
RS 485, Ethernet: Modbus TCP, RTU | DNP UDP, TCP, RTU				**I**	
Ethernet/Fiber Optics: IEC 61850 communication | Modbus TCP | DNP UDP, TCP				**K**	
Ethernet/Fiber Optics: Modbus TCP | DNP UDP, TCP				**L**	
RS 485, Ethernet: IEC 61850 | Modbus TCP, RTU | DNP UDP, TCP, RTU				**T**	
Printed Circuit Board					
Conformal Coating					**B**

2.2 Digital Inputs

2.2.1 “DI4-X1”

2.2.1.1 DI Slot X1: Settings

DI Slot X1 . **Nom Voltage**	[Device Para / Digital Inputs / DI Slot X1]	
110/120 Vac	24 Vdc, 48 Vdc, 60 Vdc, 125 Vdc, 250 Vdc, 110/120 Vac, 230/240 Vac ↳ Nom Voltage.	S.3
Nominal voltage of the digital inputs		

2.2.1.2 DI Slot X1: Signals (Output States)

DI Slot X1 . **DI 1** **...** DI Slot X1 . **DI 4**	[Operation / Status Display / DI Slot X1]
Signal: Digital Input	

2.3 Relay Outputs

2.3.1 4 Relay Outputs

2.3.1.1 RO-3AI X2: Settings

RO-3AI X2 . **Operating Mode**	[Device Para / Relay Outputs / RO-3AI X2 / RO 1]	
Norm De-energ. (NO)	Norm De-energ. (NO), Norm Energ. (NC) ↳ 1...n Operating Modes.	S.3
Operating Mode		

RO-3AI X2 . **Latched**	[Device Para / Relay Outputs / RO-3AI X2 / RO 1]	
Inactive	Inactive, Active ↳ Mode.	S.3
Defines whether the Relay Output will be latched when it picks up.		

RO-3AI X2 . **Assignment 1**	[Device Para / Relay Outputs / RO-3AI X2 / RO 1]	
MStart . SPHBlockAlarm	"-" . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

RO-3AI X2 . **Assignment 2**	[Device Para / Relay Outputs / RO-3AI X2 / RO 1]	
46[2] . Trip	"-" . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

RO-3AI X2 . **Assignment 3**	[Device Para / Relay Outputs / RO-3AI X2 / RO 1]	
49 . Alarm Timeout	"-" . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

RO-3AI X2 . **Assignment 4**	[Device Para / Relay Outputs / RO-3AI X2 / RO 1]	
RTD . Alarm	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

RO-3AI X2 . **Assignment 5**	[Device Para / Relay Outputs / RO-3AI X2 / RO 1]	
50X[2] . Trip	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

RO-3AI X2 . **Assignment 6** RO-3AI X2 . **Assignment 7**	[Device Para / Relay Outputs / RO-3AI X2 / RO 1]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

RO-3AI X2 . **Operating Mode**	[Device Para / Relay Outputs / RO-3AI X2 / RO 2]	
Norm De-energ. (NO)	Norm De-energ. (NO), Norm Energ. (NC) ↳ 1...n Operating Modes.	S.3
Operating Mode		

RO-3AI X2 . **Latched**	[Device Para / Relay Outputs / RO-3AI X2 / RO 2]	
Inactive	Inactive, Active ↳ Mode.	S.3
Defines whether the Relay Output will be latched when it picks up.		

RO-3AI X2 . **Assignment 1**	[Device Para / Relay Outputs / RO-3AI X2 / RO 2]	
Prot . Trip	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

RO-3AI X2 . **Assignment 2**	[Device Para / Relay Outputs / RO-3AI X2 / RO 2]	
MStart . Blo	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

RO-3AI X2 . **Assignment 3**	[Device Para / Relay Outputs / RO-3AI X2 / RO 2]	
MStart . TripPhaseReverse	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

RO-3AI X2 . **Assignment 4** **. . .** RO-3AI X2 . **Assignment 7**	[Device Para / Relay Outputs / RO-3AI X2 / RO 2]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

RO-3AI X2 . **Operating Mode**	[Device Para / Relay Outputs / RO-3AI X2 / RO 3]	
Norm Energ. (NC)	Norm De-energ. (NO), Norm Energ. (NC) ↳ 1...n Operating Modes.	S.3
Operating Mode		

RO-3AI X2 . **Latched**	[Device Para / Relay Outputs / RO-3AI X2 / RO 3]	
Active	Inactive, Active ↳ Mode.	S.3
Defines whether the Relay Output will be latched when it picks up.		

RO-3AI X2 . **Assignment 1**	[Device Para / Relay Outputs / RO-3AI X2 / RO 3]	
Prot . Trip	"-" . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

RO-3AI X2 . **Assignment 2**	[Device Para / Relay Outputs / RO-3AI X2 / RO 3]	
MStart . Blo	"-" . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

RO-3AI X2 . **Assignment 3** **. . .** RO-3AI X2 . **Assignment 7**	[Device Para / Relay Outputs / RO-3AI X2 / RO 3]	
"-"	"-" . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

RO-3AI X2 . **DISARMED Ctrl**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / DISARMED / RO-3AI X2]	
Inactive	Inactive, Active ↳ Active/Inactive.	S.3
Enables and disables the disarming of the relay outputs. This is the first step of a two step process, to inhibit the operation or the relay outputs. Please refer to "DISARMED" for the second step.		

RO-3AI X2 . **Disarm Mode**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / DISARMED / RO-3AI X2]	
Permanent	Permanent, Timeout ↳ Mode.	S.3
CAUTION! RELAYS DISARMED in order to safely perform maintenance while eliminating the risk of taking an entire process off-line. (Note: Zone Interlocking and Supervision Contact cannot be disarmed). YOU MUST ENSURE that the relays are ARMED AGAIN after maintenance.		

RO-3AI X2 . **t-Timeout DISARM**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / DISARMED / RO-3AI X2]	
0.03s *Only available if:* • RO-3AI X2 . Disarm Mode = Timeout	0.00s . . . 300.00s	S.3
The relays will be armed again after expiring of this time.		

RO-3AI X2 . **Force Mode**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Force RO / RO-3AI X2]	
Permanent	Permanent, Timeout ↳ Mode.	S.3
By means of this function the normal Relay Output States can be overwritten (forced) in case that the Relay Output is not in a disarmed state. The relays can be set from normal operation (relay works according to the assigned signals) to "force energized" or "force de-energized" state.		

RO-3AI X2 . **t-Timeout Force**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Force RO / RO-3AI X2]	
0.03s *Only available if:* • RO-3AI X2 . Force Mode = Timeout	0.00s . . . 300.00s	S.3
The Output State will be set by force for the duration of this time. That means, for the duration of this time, the Relay Output does not show the state of the signals that are assigned on it.		

2.3.1.2 RO-3AI X2: Direct Controls

RO-3AI X2 . **DISARMED**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / DISARMED / RO-3AI X2]	
Inactive	Inactive, Active ↳ Active/Inactive.	S.3

◉	*This is the second step, after the "DISARMED Ctrl" has been activated, that is required to DISARM the relay outputs. This will DISARM those relay outputs that are currently not latched and that are not timing out. CAUTION! RELAYS DISARMED in order to safely perform maintenance while eliminating the risk of taking an entire process off-line. (Note: Zone Interlocking and Supervision Contact cannot be disarmed). YOU MUST ENSURE that the relays are ARMED AGAIN after maintenance.*

RO-3AI X2 . **Force all Outs**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Force RO / RO-3AI X2]	
Normal	Normal, De-Energized, Energized ↳ Relay operating modes.	S.3

◉	*By means of this function the normal Relay Output State can be overwritten (forced). The relay can be set from normal operation (relay works according to the assigned signals) to "force energized" or "force de-energized" state. Forcing all relay outputs of an entire assembly group has precedence to forcing a single relay output.*

RO-3AI X2 . **Force RO1** RO-3AI X2 . **Force RO2** RO-3AI X2 . **Force RO3**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Force RO / RO-3AI X2]	
Normal	Normal, De-Energized, Energized ↳ Relay operating modes.	S.3

◉	*By means of this function the normal Relay Output State can be overwritten (forced). The relay can be set from normal operation (relay works according to the assigned signals) to "force energized" or "force de-energized" state.*

2.3.1.3 RO-3AI X2: Signals (Output States)

RO-3AI X2 . **RO 1** RO-3AI X2 . **RO 2** RO-3AI X2 . **RO 3**	[Operation / Status Display / RO-3AI X2] [Service / Test Mode (Prot inhibit) / WARNING! Cont? / State / RO-3AI X2]
⇫	*Signal: Relay Output*

RO-3AI X2 . **DISARMED!**	[Operation / Status Display / RO-3AI X2] [Service / Test Mode (Prot inhibit) / WARNING! Cont? / State / RO-3AI X2]
⇫	*Signal: CAUTION! RELAYS DISARMED in order to safely perform maintenance while eliminating the risk of taking an entire process off-line. (Note: Zone Interlocking and Supervision Contact cannot be disarmed). YOU MUST ENSURE that the relays are ARMED AGAIN after maintenance*

RO-3AI X2 . **Outs forced**	[Operation / Status Display / RO-3AI X2] [Service / Test Mode (Prot inhibit) / WARNING! Cont? / State / RO-3AI X2]
⇫	*Signal: The State of at least one Relay Output has been set by force. That means that the state of at least one Relay is forced and hence does not show the state of the assigned signals.*

2.4 Analog Outputs

2.4.1 AnOut – Analog Output

2.4.1.1 AnOut: Settings

AnOut . **Assignment**	[Device Para / AnOut]	
“-”	“-” . . . RTD . Hottest MB ↳ 1..n, AnalogOutputList.	S.3
Assignment		

AnOut . **Range**	[Device Para / AnOut]	
4...20mA	0...20mA, 4...20mA ↳ Type of Output.	S.3
Adjustable range		

AnOut . **Range max**	[Device Para / AnOut]	
1.00°C	-999999.00°C . . . 999999.00°C	S.3
Adjustable range maximum.		

AnOut . **Range min**	[Device Para / AnOut]	
0.00°C	-999999.00°C . . . 999999.00°C	S.3
Adjustable range minimum.		

AnOut . **Force Mode**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Analog Outputs / AnOut]	
Permanent	Permanent, Timeout ↳ Disarm.	S.3
For commissioning purposes or for maintanance, Analog Outputs can be set by force. By means of this function the normal Analog Outputs can be overwritten (forced).		

AnOut . **t-Timeout Force**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Analog Outputs / AnOut]	
0.03s *Only available if:* • AnOut . Force Mode = Timeout	0.00s . . . 300.00s	S.3
The Analog Output Value will be set by force for the duration of this time. That means for the duration of this time the Analog Output does not show the value of the signals that are assigned on it.		

2.4.1.2 AnOut: Direct Controls

AnOut . **Function**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Analog Outputs / AnOut]	
Inactive	Inactive, Active ↳ Active.	S.3
Permanent activation or deactivation of module/element.		

AnOut . **Force Value**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Analog Outputs / AnOut]	
0%	0.00% . . . 100.00%	S.3
By means of this function the Analog Output Value can be overwritten (forced).		

2.4.1.3 AnOut: Signals (Output States)

AnOut . **Force Mode**	[Operation / Status Display / AnOut]
For commissioning purposes or for maintanance, Analog Outputs can be set by force. By means of this function the normal Analog Outputs can be overwritten (forced).	

2.5 LEDs

2.5.1 LEDs: Settings

LEDs . **Latched**	[Device Para / LEDs / LED 1]	
Active	Inactive, Active, active, ack. by pickup ↳ Mode.	S.3
Defines whether the LED will be latched when it picks up.		

LEDs . **Ack signal**	[Device Para / LEDs / LED 1]	
“-”	“-” . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	S.3
Acknowledgment signal for the LED. If latching is set to active the LED can only be acknowledged if all signals that initiated the setting of the LED are no longer present.		

LEDs . **LED Active Color**	[Device Para / LEDs / LED 1]	
Red	Green, Red, Red flash, Green flash, “-” ↳ LED Active Color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is true.		

LEDs . **LED Inactive Color**	[Device Para / LEDs / LED 1]	
“-”	Green, Red, Red flash, Green flash, “-” ↳ LED Active Color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is false.		

LEDs . **Assignment 1**	[Device Para / LEDs / LED 1]	
Prot . Trip	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 1**	[Device Para / LEDs / LED 1]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 2**	[Device Para / LEDs / LED 1]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 2**	[Device Para / LEDs / LED 1]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 3**	[Device Para / LEDs / LED 1]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 3**	[Device Para / LEDs / LED 1]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 4**	[Device Para / LEDs / LED 1]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 4**	[Device Para / LEDs / LED 1]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 5**	[Device Para / LEDs / LED 1]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 5**	[Device Para / LEDs / LED 1]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Latched**	[Device Para / LEDs / LED 2]	
Active	Inactive, Active, active, ack. by pickup ↳ Mode.	S.3
Defines whether the LED will be latched when it picks up.		

LEDs . **Ack signal**	[Device Para / LEDs / LED 2]	
“-”	“-” . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	S.3
Acknowledgment signal for the LED. If latching is set to active the LED can only be acknowledged if all signals that initiated the setting of the LED are no longer present.		

LEDs . **LED Active Color**	[Device Para / LEDs / LED 2]	
Red	Green, Red, Red flash, Green flash, “-” ↳ LED Active Color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is true.		

LEDs . **LED Inactive Color**	[Device Para / LEDs / LED 2]	
“-”	Green, Red, Red flash, Green flash, “-” ↳ LED Active Color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is false.		

LEDs . **Assignment 1**	[Device Para / LEDs / LED 2]	
MStart . SPHBlockAlarm	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 1**	[Device Para / LEDs / LED 2]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 2**	[Device Para / LEDs / LED 2]	
46[2] . Trip	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 2**	[Device Para / LEDs / LED 2]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 3**	[Device Para / LEDs / LED 2]	
49 . Alarm Timeout	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 3**	[Device Para / LEDs / LED 2]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 4**	[Device Para / LEDs / LED 2]	
RTD . Alarm	"-" . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 4**	[Device Para / LEDs / LED 2]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 5**	[Device Para / LEDs / LED 2]	
50X[2] . Trip	"-" . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 5**	[Device Para / LEDs / LED 2]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Latched**	[Device Para / LEDs / LED 3]	
Active	Inactive, Active, active, ack. by pickup ↳ Mode.	S.3
Defines whether the LED will be latched when it picks up.		

LEDs . **Ack signal**	[Device Para / LEDs / LED 3]	
“-”	“-” . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	S.3
Acknowledgment signal for the LED. If latching is set to active the LED can only be acknowledged if all signals that initiated the setting of the LED are no longer present.		

LEDs . **LED Active Color**	[Device Para / LEDs / LED 3]	
Red	Green, Red, Red flash, Green flash, “-” ↳ LED Active Color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is true.		

LEDs . **LED Inactive Color**	[Device Para / LEDs / LED 3]	
“-”	Green, Red, Red flash, Green flash, “-” ↳ LED Active Color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is false.		

LEDs . **Assignment 1**	[Device Para / LEDs / LED 3]	
49 . Trip	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 1**	[Device Para / LEDs / LED 3]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 2**	[Device Para / LEDs / LED 3]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 2**	[Device Para / LEDs / LED 3]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 3**	[Device Para / LEDs / LED 3]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 3**	[Device Para / LEDs / LED 3]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 4**	[Device Para / LEDs / LED 3]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 4**	[Device Para / LEDs / LED 3]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 5**	[Device Para / LEDs / LED 3]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 5**	[Device Para / LEDs / LED 3]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Latched**	[Device Para / LEDs / LED 4]	
Active	Inactive, Active, active, ack. by pickup ↳ Mode.	S.3
Defines whether the LED will be latched when it picks up.		

LEDs . **Ack signal**	[Device Para / LEDs / LED 4]	
“-”	“-” . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	S.3
Acknowledgment signal for the LED. If latching is set to active the LED can only be acknowledged if all signals that initiated the setting of the LED are no longer present.		

LEDs . **LED Active Color**	[Device Para / LEDs / LED 4]	
Red	Green, Red, Red flash, Green flash, “-” ↳ LED Active Color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is true.		

LEDs . **LED Inactive Color**	[Device Para / LEDs / LED 4]	
“-”	Green, Red, Red flash, Green flash, “-” ↳ LED Active Color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is false.		

LEDs . **Assignment 1**	[Device Para / LEDs / LED 4]	
46[1] . Trip	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 1**	[Device Para / LEDs / LED 4]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 2**	[Device Para / LEDs / LED 4]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 2**	[Device Para / LEDs / LED 4]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 3**	[Device Para / LEDs / LED 4]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 3**	[Device Para / LEDs / LED 4]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 4**	[Device Para / LEDs / LED 4]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 4**	[Device Para / LEDs / LED 4]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 5**	[Device Para / LEDs / LED 4]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 5**	[Device Para / LEDs / LED 4]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Latched**	[Device Para / LEDs / LED 5]	
Inactive	Inactive, Active, active, ack. by pickup ↳ Mode.	S.3
Defines whether the LED will be latched when it picks up.		

LEDs . **Ack signal**	[Device Para / LEDs / LED 5]	
“-”	“-” . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	S.3
Acknowledgment signal for the LED. If latching is set to active the LED can only be acknowledged if all signals that initiated the setting of the LED are no longer present.		

LEDs . **LED Active Color**	[Device Para / LEDs / LED 5]	
Red flash	Green, Red, Red flash, Green flash, “-” ↳ LED Active Color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is true.		

LEDs . **LED Inactive Color**	[Device Para / LEDs / LED 5]	
“-”	Green, Red, Red flash, Green flash, “-” ↳ LED Active Color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is false.		

LEDs . **Assignment 1**	[Device Para / LEDs / LED 5]	
MStart . Start	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 1**	[Device Para / LEDs / LED 5]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 2**	[Device Para / LEDs / LED 5]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 2**	[Device Para / LEDs / LED 5]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 3**	[Device Para / LEDs / LED 5]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 3**	[Device Para / LEDs / LED 5]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 4**	[Device Para / LEDs / LED 5]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 4**	[Device Para / LEDs / LED 5]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 5**	[Device Para / LEDs / LED 5]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 5**	[Device Para / LEDs / LED 5]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Latched**	[Device Para / LEDs / LED 6]	
Inactive	Inactive, Active, active, ack. by pickup ↳ Mode.	S.3
Defines whether the LED will be latched when it picks up.		

LEDs . **Ack signal**	[Device Para / LEDs / LED 6]	
“-”	“-” ... Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	S.3
Acknowledgment signal for the LED. If latching is set to active the LED can only be acknowledged if all signals that initiated the setting of the LED are no longer present.		

LEDs . **LED Active Color**	[Device Para / LEDs / LED 6]	
Red	Green, Red, Red flash, Green flash, “-” ↳ LED Active Color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is true.		

LEDs . **LED Inactive Color**	[Device Para / LEDs / LED 6]	
“-”	Green, Red, Red flash, Green flash, “-” ↳ LED Active Color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is false.		

LEDs . **Assignment 1**	[Device Para / LEDs / LED 6]	
MStart . Run	“-” ... Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 1**	[Device Para / LEDs / LED 6]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 2**	[Device Para / LEDs / LED 6]	
“-”	“-” ... Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 2**	[Device Para / LEDs / LED 6]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 3**	[Device Para / LEDs / LED 6]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 3**	[Device Para / LEDs / LED 6]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 4**	[Device Para / LEDs / LED 6]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 4**	[Device Para / LEDs / LED 6]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 5**	[Device Para / LEDs / LED 6]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 5**	[Device Para / LEDs / LED 6]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Latched**	[Device Para / LEDs / LED 7]	
Inactive	Inactive, Active, active, ack. by pickup ↳ Mode.	S.3
Defines whether the LED will be latched when it picks up.		

LEDs . **Ack signal**	[Device Para / LEDs / LED 7]	
“-”	“-” . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	S.3
Acknowledgment signal for the LED. If latching is set to active the LED can only be acknowledged if all signals that initiated the setting of the LED are no longer present.		

LEDs . **LED Active Color**	[Device Para / LEDs / LED 7]	
Green	Green, Red, Red flash, Green flash, “-” ↳ LED Active Color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is true.		

LEDs . **LED Inactive Color**	[Device Para / LEDs / LED 7]	
“-”	Green, Red, Red flash, Green flash, “-” ↳ LED Active Color.	S.3
The LED lights up in this color if the state of the OR-assignment of the signals is false.		

LEDs . **Assignment 1**	[Device Para / LEDs / LED 7]	
MStart . Stop	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 1**	[Device Para / LEDs / LED 7]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 2**	[Device Para / LEDs / LED 7]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 2**	[Device Para / LEDs / LED 7]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 3**	[Device Para / LEDs / LED 7]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 3**	[Device Para / LEDs / LED 7]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 4**	[Device Para / LEDs / LED 7]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 4**	[Device Para / LEDs / LED 7]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

LEDs . **Assignment 5**	[Device Para / LEDs / LED 7]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment		

LEDs . **Inverting 5**	[Device Para / LEDs / LED 7]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting of the state of the assigned signal.		

2.6 HMI – Front panel

Password	[Device Para / Security / Password]
	This item represents a special dialog. (See the Technical Manual for details.) *Changing the password*

Access Level	[Device Para / Security / Access Level]
	This item represents a special dialog. (See the Technical Manual for details.) *Access Level*

2.6.1 HMI: Settings

HMI . **Display Off**	[Device Para / HMI]	
180s	20s ... 3600s	S.3
	The display back light will be turned off when this timer has expired.	

HMI . **t-max Edit/Access**	[Device Para / Security / Miscellaneous]	
180s	20s ... 3600s	S.3
	If no other key(s) is pressed at the panel, after expiration of this time, all cached (changed) parameters are cancelled. The device access will be locked by falling back into Read-only level Lv0.	

2.6.2 HMI: Direct Controls

HMI . **Contrast**	[Device Para / HMI]	
50%	0% ... 100%	S.3
	Contrast	

HMI . **PowerPort-E via USB**	[Device Para / Security / Communication]	
Active	Inactive, Active ↳ Mode.	S.3
	Activate (allow) or inactivate (disallow) the PowerPort-E access via the USB interface.	

HMI . **PowerPort-E via Eth**	[Device Para / Security / Communication]	
Active *Avail. depends on HW*	Inactive, Active ↳ Mode.	S.3
◉	*Activate (allow) or inactivate (disallow) the PowerPort-E access via the Ethernet interface.*	

HMI . **Config. Device Reset**	[Device Para / Security / Miscellaneous]	
“Fact.def.”, “PW rst”	“Fact.def.”, “PW rst”, Only “Fact.defaults”, Reset deact. ↳ Config. Device Reset.	S.3
◉	*If the »Ack/Rst« key is pressed while the device is performing a cold restart a general Reset Dialog appears on the screen. Select which options shall be available with this dialog.*	

3 Security

- HMI . PowerPort-E via USB: Table
- HMI . PowerPort-E via Eth: Table
- Modbus . PowerPort-E via Modbus: Table
- HMI . t-max Edit/Access: Table
- HMI . Config. Device Reset: Table
- Password: Table
- Access Level: Table

4 System Settings

4.1 System Para: Settings

System Para . **Phase Sequence**	[System Para]	
ABC	ABC, ACB ↳ Phase Sequence.	S.3
Phase Sequence		

System Para . **f**	[System Para]	
60Hz	50Hz, 60Hz ↳ fN.	S.3
Nominal frequency		

4.2 CT – Current Transformer

4.2.1 CT: Settings

CT . **CT pri**	[System Para]	
10A	1A ... 50000A	S.3
Nominal current of the primary side of the current transformers.		

CT . **CT sec**	[System Para]	
5A	If: MP-3000-compatible CT input terminals = True • 5A If: MP-3000-compatible CT input terminals = False • 1A, 5A ↳ Ratio prim/sec.	S.3
Nominal current of the secondary side of the current transformers.		

CT . **CT dir**	[System Para]	
0°	0°, 180° ↳ Polarity.	S.3
Protection functions with directional feature can only work properly if the connection of the current transformers is free of wiring errors. If all current transformers are connected to the device with an incorrect polarity, the wiring error can be compensated by this parameter. This parameter turns the current vectors by 180 degrees.		

CT . **XCT pri**	[System Para]	
50A	1A ... 50000A	S.3
This parameter defines the primary nominal current of the connected ground current transformer. If the ground current is measured via the Residual connection, the primary value of the phase current transformer must be entered here.		

CT . **XCT sec**	[System Para]	
5A	If: MP-3000-compatible CT input terminals = True • 5A If: MP-3000-compatible CT input terminals = False • 1A, 5A ↳ Ratio prim/sec.	S.3
This parameter defines the secondary nominal current of the connected ground current transformer. If the ground current is done via the Residual connection, the primary value of the phase current transformer must be entered here.		

CT . **XCT dir**	[System Para]	
0°	0°, 180° ↳ Polarity.	S.3
Ground fault protection with directional feature depends also on the correct wiring of the ground current transformer. An incorrect polarity/wiring can be corrected by means of the settings "0°" or "180°". The operator has the possibility of turning the current vector by "180°" (change of sign) without modification of the wiring. This means, that - in terms of figures - the determined current indicator was turned by "180°" by the device.		

4.2.2 CT: Values

CT . **IA RMS**	[Operation / Measured Values / Current]
Measured value: Phase current (RMS)	

CT . **IB RMS**	[Operation / Measured Values / Current]
Measured value: Phase current (RMS)	

CT . **IC RMS**	[Operation / Measured Values / Current]
Measured value: Phase current (RMS)	

CT . **IX meas RMS**	[Operation / Measured Values / Current]
Measured value (measured): IX (RMS)	

CT . **I0 Fund.**	[Operation / Measured Values / Current]
✎	*Measured value (calculated): Zero current (Fundamental)*

CT . **I1 Fund.**	[Operation / Measured Values / Current]
✎	*Measured value (calculated): Positive phase sequence current (Fundamental)*

CT . **I2 Fund.**	[Operation / Measured Values / Current]
✎	*Measured value (calculated): Unbalanced load current (Fundamental)*

CT . **%(I2/I1)**	[Operation / Measured Values / Current]
✎	*Measured value (calculated): I2/I1, phase sequence will be taken into account automatically.*

CT . **Angle IA**	[Operation / Measured Values / Current]
✎	*Measured Value (Calculated): Angle of Phasor IA* *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

CT . **Angle IB**	[Operation / Measured Values / Current]
✎	*Measured Value (Calculated): Angle of Phasor IB* *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

CT . **Angle IC**	[Operation / Measured Values / Current]
✎	*Measured Value (Calculated): Angle of Phasor IC* *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

CT . **Angle IX meas**	[Operation / Measured Values / Current]
✎	*Measured Value (Calculated): Angle of Phasor IX meas* *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

CT . **Angle I0**	[Operation / Measured Values / Current]
✎	*Measured Value (calculated): Angle of Zero Sequence System* *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

CT . **Angle I1**	[Operation / Measured Values / Current]
✎	*Measured Value (calculated): Angle of Positive Sequence System* *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

CT . **Angle I2**	[Operation / Measured Values / Current]
✎	*Measured value (calculated): Angle of Negative Sequence System* *Reference phasor is required to calculate the angle. This is the first measured voltage (or current) channel with sufficiently high amplitude.*

CT . **%IA THD**	[Operation / Measured Values / Current]
✎	*Measured Value (Calculated): IA Total Harmonic Distortion*

CT . **%IB THD**	[Operation / Measured Values / Current]
✎	*Measured Value (Calculated): IB Total Harmonic Distortion*

CT . **%IC THD**	[Operation / Measured Values / Current]
✎	*Measured Value (Calculated): IC Total Harmonic Distortion*

CT . **IA THD**	[Operation / Measured Values / Current]
✎	*Measured Value (Calculated): IA Total Harmonic Current*

CT . **IB THD**	[Operation / Measured Values / Current]
✎	*Measured Value (Calculated): IB Total Harmonic Current*

CT . **IC THD**	[Operation / Measured Values / Current]
✎	*Measured Value (Calculated): IC Total Harmonic Current*

5 System

5.1 Sys: Settings

Sys . **Scaling**	[Operation / General Settings]	
Primary values	Per unit values, Primary values, Secondary values ↳ Scaling.	S.3
Display of the measured values as primary, secondary, or per unit values		

Sys . **Program Mode**	[System Para]	
Either Motor Stopped or Running	Either Motor Stopped or Running, Motor Stop ↳ .	P.2
Program Mode		

Sys . **Ack LED**	[Device Para / Ex Acknowledge]	
"-"	"-" . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	S.3
All acknowledgeable LEDs will be acknowledged if the state of the assigned signal becomes true.		

Sys . **Ack RO**	[Device Para / Ex Acknowledge]	
"-"	"-" . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	S.3
All acknowledgeable Relay Outputs will be acknowledged if the state of the assigned signal becomes true.		

Sys . **Ack Comm**	[Device Para / Ex Acknowledge]	
"-"	"-" . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	S.3
Latched communication (SCADA) signals are acknowledged (reset) if the state of the assigned signal becomes true.		

5.2 Sys: Direct Controls

Sys . **Ack RO LED Comm Trips**	[Operation / Reset / Flags]	
Inactive	Inactive, Active ↳ Mode.	P.1
◉	*Reset latched Relay Outputs, LEDs, Communication, and Trips.*	

Sys . **Ack LED**	[Operation / Reset / Flags]	
Inactive	Inactive, Active ↳ Mode.	P.1
◉	*All acknowledgeable LEDs will be acknowledged.*	

Sys . **Ack RO**	[Operation / Reset / Flags]	
Inactive	Inactive, Active ↳ Mode.	P.1
◉	*All acknowledgeable Relay Outputs are acknowledged.*	

Sys . **Ack Comm**	[Operation / Reset / Flags]	
Inactive	Inactive, Active ↳ Mode.	P.1
◉	*Latched communication (SCADA) signals are acknowledged (reset).*	

Sys . **Res OperationsCr**	[Operation / Reset / History]	
Inactive	Inactive, Active ↳ Mode.	P.1
◉	*Reset all counters in history group operations*	

Sys . **Res AlarmCr**	[Operation / Reset / History]	
Inactive	Inactive, Active ↳ Mode.	P.1
◉	*Reset all counters in history group alarms*	

Sys . **Res TripCr**	[Operation / Reset / History]	
Inactive	Inactive, Active ↳ Mode.	P.1
◉	*Reset all counters in history group trips*	

Sys . **Res TotalCr**	[Operation / Reset / History]	
Inactive	Inactive, Active ↳ Mode.	P.1
◉	*Reset all counters in history group total*	

Sys . **Res All**	[Operation / Reset / History]	
Inactive	Inactive, Active ↳ Mode.	P.1
◉	*Reset of all Counters*	

Sys . **Program Mode Bypass**	[System Para]	
Inactive	Inactive, Active ↳ Mode.	P.1
◉	*Short-period bypass of the Program Mode.*	

Sys . **Reboot**	[Service / General]	
No	No, Yes ↳ Yes/No.	S.3
◉	*Rebooting the device.*	

5.3 Sys: Signals (Output States)

Sys . **Reboot**	[Operation / Status Display / Sys]
⇪	*Signal: Rebooting the device.*

Sys . **Ack LED-HMI**	[Operation / Status Display / Sys]
⇪	*Signal: LEDs Acknowledgment, triggered at the HMI*

Sys . **Ack RO-HMI**	[Operation / Status Display / Sys]
⇪	*Signal: Acknowledgment of the Relay Outputs, triggered at the HMI*

Sys . **Ack Comm-HMI**	[Operation / Status Display / Sys]
⇪	*Signal: Acknowledge latched communication (SCADA) signals, triggered at the HMI*

Sys . **Min. 1 param changed**	[Operation / Status Display / Sys]
⇪	*Signal: At least one parameter has been changed*

Sys . **Program Mode Bypass**	[Operation / Status Display / Sys]
⇪	*Signal: Short-period bypass of the Program Mode.*

5.4 Sys: Values

Sys . **Hours Counter**	[Operation / History / TotalCr]
⇘	*Resettable device operation hours counter. Resettable with »Sys . Res TotalCr« or »Sys . Res All«.*

Sys . **Operating hours Cr**	[Operation / Count and RevData / Sys]
⇘	*Operating hours counter of the protective device*

Sys . **DM version**	[Device Para / Version]	
3.6.a	3.6.a ↳ .	
⇘	*Version of the device model*	

Sys . **SW version**	[Device Para / Version]
✎	*Version of the device firmware*

Sys . **Build**	[Device Para / Version]
✎	*Build Number*

Sys . **CAT No**	[Device Para / Version]
✎	*»CAT No.« (Catalog Number) as printed on the nameplate of the device.*

Sys . **REV.**	[Device Para / Version]
✎	*Revision (as printed on the nameplate of the device).*

Sys . **S/N**	[Device Para / Version]
✎	*The serial number of the device.*

6 Measured Values

- CT – Current Transformer: “4.2.2 CT: Values”
- System: “5.4 Sys: Values”
- Modbus: “7.5.5 Modbus: Values”
- IEC 61850 – IEC 61850 communication: “7.6.4 IEC 61850: Values”
- Profibus – Profibus Module: “7.7.5 Profibus: Values”
- SNTP – SNTP-Module: “7.9.5 SNTP: Values”
- MStart – Motor Start: “8.3.5 MStart: Values And Counters”
- URTD – Universal Resistance Temperature Detector: “8.13.4 URTD: Values”
- RTD – Temperature Protection Module: “8.14.3 RTD: Values And Counters”
- Waveform rec – After a trigger event has become true, the waveform recorder writes analog and digital tracks: “9.2.5 Waveform rec: Values”
- Sgen – Sine wave generator: “12.1.6 Sgen: Values”

7 Communication

7.1 SCADA: Device Planning Parameters

SCADA . **Protocol**	[Device Planning]	
“-”	“-” ... Profibus ↳ Used Protocol.	S.3
Select the SCADA protocol to be used.		

7.2 SCADA: Signals (Output States)

SCADA . **Comm connected**	[Operation / Status Display / SCADA]
At least one Communication system is connected to the device.	

SCADA . **Comm not connected**	[Operation / Status Display / SCADA]
No Communication system is connected to the device.	

7.3 TcpIp

TCP/IP config	[Device Para / TCP/IP / TCP/IP config]
	This item represents a special dialog. (See the Technical Manual for details.) *configuration of the TCP/IP protocol*

7.3.1 TcpIp: Settings

TcpIp . **Keep Alive Time**	[Device Para / TCP/IP / Advanced Settings]	
720s	1s ... 7200s	S.3
	Keep Alive Time is the duration between two keep alive transmissions in idle condition	

TcpIp . **Keep Alive Interval**	[Device Para / TCP/IP / Advanced Settings]	
15s	1s ... 60s	S.3
	Keep Alive Interval is the duration between two successive keep alive retransmissions, if the acknowledgement to the previous keepalive transmission was not received.	

TcpIp . **Keep Alive Retry**	[Device Para / TCP/IP / Advanced Settings]	
3	3 ... 3	S.3
	Keep alive retry is the number of retransmissions to be carried out before declaring that the remote end is not available.	

7.4 DNP – Distributed Network Protocol

7.4.1 DNP: Settings

DNP . **Function**	[Device Para / DNP / Communication]	
Inactive	Inactive, Active ↳ Mode.	S.3
Permanent activation or deactivation of module/element.		

DNP . **IP Port Number**	[Device Para / DNP / Communication]	
20000	0 . . . 65535	S.3
IP Port Number. *In general it is recommended to keep the default value. If this is not possible then select a number out of the private range 49152-52151 or 52164-65535 that is not yet in use within your network.*		

DNP . **Baud rate**	[Device Para / DNP / Communication]	
19200	1200 . . . 115200 ↳ Baud rate.	S.3
Baud rate for communication		

DNP . **Frame Layout**	[Device Para / DNP / Communication]	
8E1	8E1, 8O1, 8N1, 8N2 ↳ Byte Frame.	S.3
Frame Layout		

DNP . **Optical rest position**	[Device Para / DNP / Communication]	
Light on *Avail. depends on HW*	Light off, Light on ↳ Optical rest position.	S.3
Optical rest position		

DNP . **SelfAddress**	[Device Para / DNP / Communication]	
Inactive	Inactive, Active ↳ Mode.	S.3
Support of self (automatic) addresses		

DNP . **DataLink confirm**	[Device Para / DNP / Communication]	
Never	Never, Always, On_Large ↳ Communication Start Variants.	S.3
Enables or disables the data layer confirmation (ack).		

DNP . **t-DataLink confirm**	[Device Para / DNP / Communication]	
1s	0.1s ... 10.0s	S.3
Data layer confirmation timeout		

DNP . **DataLink num retries**	[Device Para / DNP / Communication]	
3	0 ... 255	S.3
Number of repetition of data link packet sending after failing		

DNP . **Direction Bit**	[Device Para / DNP / Communication]	
Inactive	Inactive, Active ↳ Mode.	S.3
Enables Direction Bit functionality. The Direction Bit is 0 for SlaveStation and 1 for MasterStation		

DNP . **Max Frame Size**	[Device Para / DNP / Communication]	
255	64 ... 255	S.3
This value is used to limit the net Frame Size		

DNP . **Test Link Period**	[Device Para / DNP / Communication]	
0s	0.0s ... 120.0s	S.3
This value specifies the time period when to send a Test Link-Frame		

DNP . **AppLink confirm**	[Device Para / DNP / Communication]	
Always	Never, Always, Event ↳ _AL_ResponseType_k.	S.3
Determines if the device will request that the Application Layer response be confirmed or not		

DNP . **t-AppLink confirm**	[Device Para / DNP / Communication]	
5s	0.1s ... 10.0s	S.3
Application layer response timeout		

DNP . **AppLink num retries**	[Device Para / DNP / Communication]	
0	0 ... 255	S.3
The number of times the device will retransmit an Application Layer fragment		

DNP . **Unsol Reporting**	[Device Para / DNP / Communication]	
Inactive	Inactive, Active ↳ Mode.	S.3
Enables unsolicited reporting. This is available only for DNP3 TCP connections, and for DNP3 RTU in case of a peer-to-peer connection.		

DNP . **Unsol Reporting Timeout**	[Device Para / DNP / Communication]	
10s	1.0s ... 60.0s	S.3
Set the amount of time that the outstation will wait for an Application Layer confirmation back from the master indicating that the master received the unsolicited response message.		

DNP . **Unsol Reporting Retry**	[Device Para / DNP / Communication]	
2	0 ... 255	S.3
Set the number of retries that an outstation transmits in each unsolicited response series if it does not receive confirmation back from the master.		

DNP . **TestSeqNo**	[Device Para / DNP / Communication]	
Inactive	Inactive, Active ↳ Mode.	S.3
Test if sequence number of request is incremented. If it is not correctly incremented the request will be ignored. It is recommended to have it inactive but some older DNP implementations need it activated.		

DNP . **TestSBO**	[Device Para / DNP / Communication]	
Active	Inactive, Active ↳ Mode.	S.3
It enables a stricter comparing of SBO and operate command. For older DNP versions it is recommanded to deactivated it.		

DNP . **Timeout SBO**	[Device Para / DNP / Communication]	
30s	1.0s ... 60.0s	S.3
DNP Outputs can be controlled in a two stage procedure (SBO: Select Before Operate). These outputs are to be selected first by a Select command. After this the bit is reserved for this Operate request. This setting defines the timer for this reservation: After the timer has elapsed the bit is released.		

DNP . **ColdRestart**	[Device Para / DNP / Communication]	
Inactive	Inactive, Active ↳ Mode.	S.3
Enables support for Cold Restart function.		

DNP . **Deadb integr time**	[Device Para / DNP / Communication]	
1	0 ... 300	S.3
Deadband integration time.		

DNP . **BinaryInput 0** **...** DNP . **BinaryInput 63**	[Device Para / DNP / Point map / Binary Inputs]	
"-"	"-" ... Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.		

DNP . **BinaryCounter 0** **...** DNP . **BinaryCounter 7**	[Device Para / DNP / Point map / BinaryCounter]	
"-"	"-" ... Sys . Hours Counter ↳ 1..n, Assignment List.	S.3
Counter can be used to report counter values to the DNP master.		

DNP . **Analog value 0** **...** DNP . **Analog value 31**	[Device Para / DNP / Point map / Analog Input]	
"-"	"-" ... RTD . Hottest Aux ↳ 1..n, TrendRecList.	S.3
Analog value can be used to report values to the master (DNP)		

DNP . **Scale Factor 0** **...** DNP . **Scale Factor 31**	[Device Para / DNP / Point map / Analog Input]	
1	0.001 ... 1000000 ↳ Scale Factor.	S.3
The scale factor is used to convert the measured value in an integer format		

DNP . **Dead Band 0** **...** DNP . **Dead Band 31**	[Device Para / DNP / Point map / Analog Input]	
1%	0.01% ... 100.00%	S.3
If a change of measured value is greater than the deadband value it will be reported to the master.		

7.4.2 DNP: Direct Controls

DNP . **Res all Diag Cr**	[Operation / Count and RevData / DNP] [Operation / Reset / Counter]	
Inactive	Inactive, Active ⮡ Mode.	S.3
Reset all diagnosis counters		

DNP . **Slave Id**	[Device Para / DNP / Communication]	
1	0 ... 65519	S.3
SlaveId defines the DNP3 address of this device (Outstation)		

DNP . **Master Id**	[Device Para / DNP / Communication]	
65500	0 ... 65519	S.3
MasterId defines the DNP3 address of master (SCADA)		

7.4.3 DNP: Input States

DNP . **BinaryInput0-I** **...** DNP . **BinaryInput63-I**	[Operation / Status Display / DNP / Binary Inputs]
Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.	

DNP . **DoubleBitInput0-I** **...** DNP . **DoubleBitInput5-I**	[Operation / Status Display / DNP / Double Bit Inputs]
⇩	*Double Bit Digital Input (DNP). This corresponds to a double bit binary output of the protective device.*

7.4.4 DNP: Signals (Output States)

DNP . **busy**	[Operation / Status Display / DNP / State]
⇧	*This message is set if the protocol is started. It will be reset if the protocol is shut down.*

DNP . **ready**	[Operation / Status Display / DNP / State]
⇧	*The message will be set if the protocol is successfully started and ready for data exchange.*

DNP . **active**	[Operation / Status Display / DNP / State]
⇧	*The communication with the Master (SCADA) is active.* *Note that for TCP/UDP, this state is permanently “Low” unless »DataLink confirm« is set to “Always”.*

7.4.5 DNP: Counters

DNP . **NReceived**	[Operation / Count and RevData / DNP]
#	*Diagnostic counter: Number of received characters*

DNP . **NSent**	[Operation / Count and RevData / DNP]
#	*Diagnostic counter: Number of sent characters*

DNP . **NBadFramings**	[Operation / Count and RevData / DNP]
#	*Diagnostic counter: Number of bad framings. A large number indicates a disturbed serial connection.*

DNP . **NBadParities**	[Operation / Count and RevData / DNP]
#	*Diagnostic counter: Number of parity errrors. A large number indicates a disturbed serial connection.*

DNP . **NBreakSignals**	[Operation / Count and RevData / DNP]
#	*Diagnostic counter: Number of break signals. A large number indicates a disturbed serial connection.*

DNP . **NBadChecksum**	[Operation / Count and RevData / DNP]
#	*Diagnostic counter: Number of frames received with bad checksum.*

7.5 Modbus

7.5.1 Modbus: Settings

Modbus . **t-call**	[Device Para / Modbus / Communication / General Settings]	
10s	1s ... 3600s	S.3
If there is no request message sent from Communication to the device after expiry of this time, the device concludes a communication failure within the Communication system.		

Modbus . **Comm CmdBlo**	[Device Para / Modbus / Communication / General Settings]	
Inactive	Inactive, Active ↳ Mode.	S.3
Activating (allowing)/ Deactivating (disallowing) the blocking of the Communication Commands		

Modbus . **Disable Latching**	[Device Para / Modbus / Communication / General Settings]	
Inactive	Inactive, Active ↳ Mode.	S.3
Disable Latching: If this parameter is active (true), none of the Modbus states will be latched. That means that trip signals wont be latched by Modbus.		

Modbus . **AllowGap**	[Device Para / Modbus / Communication / General Settings]	
Active	Inactive, Active ↳ Mode.	S.3
If this parameter is active (True), the User can request a set of modbus register without getting an exception, because of invalid address in the requested array. The invalid addresses have a special value 0xFAFA, but the User is responsible for ignoring invalid addresses. Attention: This special value can be valid, if address is valid.		

Modbus . **Optical rest position**	[Device Para / Modbus / Communication / General Settings]	
Light on *Avail. depends on HW*	Light off, Light on ↳ Optical rest position.	S.3
Optical rest position		

Modbus . **Unit ID**	[Device Para / Modbus / Communication / TCP]	
255	1 ... 255	S.3
The Unit Identifier is used for routing. This parameter is to be set, if a Modbus RTU and a Modbus TCP network should be coupled.		

Modbus . **TCP Port Config**	[Device Para / Modbus / Communication / TCP]	
Default	Default, Private ↳ Port selection.	S.3
TCP Port Configuration. This parameter needs to be set to “Private” only if another TCP Port than the default one shall be used.		

Modbus . **Port**	[Device Para / Modbus / Communication / TCP]	
502	If: Modbus . TCP Port Config = Default • 502 ... 502 If: Modbus . TCP Port Config = Private • 49152 ... 65535	S.3
IP Port Number. *In general it is recommended to keep the default value. if this is not possible then select a number out of the private range 49152-52151 or 52164-65535 that is not yet in use within your network.*		

Modbus . **Slave ID**	[Device Para / Modbus / Communication / RTU]	
1	1 ... 247	S.3
Device address (Slave ID) within the bus system. Each device address has to be unique within a bus system.		

Modbus . **t-timeout**	[Device Para / Modbus / Communication / RTU]	
1s	0.01s ... 10.00s	S.3
Within this time the answer has to be received by the Communication system, otherwise the request will be disregarded. In that case, the Communication system detects a communication failure and the Communication System has to send a new request.		

Modbus . **Baud rate**	[Device Para / Modbus / Communication / RTU]	
19200	1200, 2400, 4800, 9600, 19200, 38400 ↳ Baud rate.	S.3
Baud rate		

Modbus . **Physical Settings**	[Device Para / Modbus / Communication / RTU]	
8E1	8E1, 8O1, 8N1, 8N2 ↳ Byte Frame.	S.3
Digit 1: Number of bits. Digit 2: E=even parity, O=odd parity, N=no parity. Digit 3: Number of stop bits. More information on the parity: It is possible that the last data bit is followed by a parity bit which is used for recognition of communication errors. The parity bit ensures that with even parity ("EVEN") always an even number of bits with valence "1" or with odd parity ("ODD") an odd number of "1" valence bits are transmitted. But it is also possible to transmit no parity bits (here the setting is "Parity = None"). More information on the stop-bits: The end of a data byte is terminated by the stop-bits.		

Modbus . **Config Bin Inp1**	[Device Para / Modbus / Configb Registers / States]	
SSV . System Error	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Virtual Digital Input. This corresponds to a virtual binary output of the protective device.		

Modbus . **Latched Config Bin Inp1** **. . .** Modbus . **Latched Config Bin Inp32**	[Device Para / Modbus / Configb Registers / States]	
Inactive	Inactive, Active ↳ Mode.	S.3
Latched Configurable Binary Input		

Modbus . **Config Bin Inp2**	[Device Para / Modbus / Configb Registers / States]	
Prot . Pickup	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Virtual Digital Input. This corresponds to a virtual binary output of the protective device.		

Modbus . **Config Bin Inp3**	[Device Para / Modbus / Configb Registers / States]	
Prot . Trip	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Virtual Digital Input. This corresponds to a virtual binary output of the protective device.		

Modbus . **Latched Config Bin Inp3**	[Device Para / Modbus / Configb Registers / States]	
Active	Inactive, Active ↳ Mode.	S.3
Latched Configurable Binary Input		

Modbus . **Config Bin Inp4** **. . .** Modbus . **Config Bin Inp32**	[Device Para / Modbus / Configb Registers / States]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Virtual Digital Input. This corresponds to a virtual binary output of the protective device.		

Modbus . **Config Bin Inp11**	[Device Para / Modbus / Configb Registers / States]	
Trip Bypass . Pickup	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Virtual Digital Input. This corresponds to a virtual binary output of the protective device.		

Modbus . **Config Bin Inp12**	[Device Para / Modbus / Configb Registers / States]	
Trip Bypass . Trip	"-" ... Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Virtual Digital Input. This corresponds to a virtual binary output of the protective device.		

Modbus . **Config Bin Inp19**	[Device Para / Modbus / Configb Registers / States]	
MStart . Stop	"-" ... Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Virtual Digital Input. This corresponds to a virtual binary output of the protective device.		

Modbus . **Config Bin Inp20**	[Device Para / Modbus / Configb Registers / States]	
MStart . Start	"-" ... Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Virtual Digital Input. This corresponds to a virtual binary output of the protective device.		

Modbus . **Config Bin Inp21**	[Device Para / Modbus / Configb Registers / States]	
MStart . Run	"-" ... Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Virtual Digital Input. This corresponds to a virtual binary output of the protective device.		

Modbus . **Mapped Meas 1** **...** Modbus . **Mapped Meas 16**	[Device Para / Modbus / Configb Registers / Measured Values]	
"-"	"-" ... RTD . Hottest Aux ↳ 1..n, TrendRecList.	S.3
Mapped Measured Values. They can be used to provide measured values to the Modbus Master.		

7.5.2 Modbus: Direct Controls

Modbus . **Res Diagn Cr**	[Operation / Reset / Counter]	
Inactive	Inactive, Active ↳ Mode.	P.1
◉	*All Modbus Diagnosis Counters will be reset.*	

Modbus . **PowerPort-E via Modbus**	[Device Para / Security / Communication]	
Active	Inactive, Active ↳ Mode.	P.1
◉	*Activate (allow) or inactivate (disallow) the PowerPort-E access via the Modbus tunnel.*	

7.5.3 Modbus: Input States

Modbus . **Config Bin Inp1-I** ... Modbus . **Config Bin Inp32-I**	[Operation / Status Display / Modbus / Configb Registers]
⇩	*State of the module input: Config Bin Inp*

7.5.4 Modbus: Signals (Output States)

Modbus . **Transmission RTU**	[Operation / Status Display / Modbus / State]
⇧	*Signal: Communication Active*

Modbus . **Transmission TCP**	[Operation / Status Display / Modbus / State]
⇧	*Signal: Communication Active*

Modbus . **Device Type**	[Operation / Status Display / Modbus / State]
⇫	*Device Type: Eaton:* *EDR-3000 - 2* *EDR-5000 - 3* *EMR-3000 - 4* *EMR-3MP0 - 4* *EMR-4000 - 5* *EMR-5000 - 6* *ETR-4000 - 8* *ETR-5000 - 9* *EGR-5000 - 12* *EBR-3000 - 13*

Modbus . **Comm Version**	[Operation / Status Display / Modbus / State]
⇫	*Modbus Communication version. This version number changes if something becomes incompatible between different Modbus releases.*

Modbus . **Comm Cmd 1** **...** Modbus . **Comm Cmd 16**	[Operation / Status Display / Modbus / Commands]
⇫	*Communication Command*

7.5.5 Modbus: Values

Modbus . **Mapped Meas 1** **...** Modbus . **Mapped Meas 16**	[Operation / Count and RevData / Modbus / Measured Values]
⇘	*Mapped Measured Values. They can be used to provide measured values to the Modbus Master.*

7.5.6 Modbus: Counters

Modbus . **NoOfRequestsTotal**	[Operation / Count and RevData / Modbus / TCP] [Operation / Count and RevData / Modbus / RTU]
#	*Total number of requests. Includes requests for other slaves.*

Modbus . **NoOfRequestsForMe**	[Operation / Count and RevData / Modbus / TCP] [Operation / Count and RevData / Modbus / RTU]
#	*Total Number of requests for this slave.*

Modbus . **NoOfResponse**	[Operation / Count and RevData / Modbus / TCP]
#	*Total number of requests having been responded.*

Modbus . **NoOfQueryInvalid**	[Operation / Count and RevData / Modbus / TCP] [Operation / Count and RevData / Modbus / RTU]
#	*Total Number of Request errors. Request could not be interpreted*

Modbus . **NoOfInternalError**	[Operation / Count and RevData / Modbus / TCP] [Operation / Count and RevData / Modbus / RTU]
#	*Total Number of Internal errors while interpreting the request.*

Modbus . **NoOfResponsTimeOverruns**	[Operation / Count and RevData / Modbus / RTU]
#	*Total number of requests with exceeded response time. Physically corrupted Frame.*

Modbus . **NoOfOverrunErros**	[Operation / Count and RevData / Modbus / RTU]
#	*Total Number of Overrun Failures. Physically corrupted Frame.*

Modbus . **NoOfParityErrors**	[Operation / Count and RevData / Modbus / RTU]
#	*Total number of parity errors. Physically corrupted Frame.*

Modbus . **NoOfFrameErrors**	[Operation / Count and RevData / Modbus / RTU]
#	*Total Number of Frame Errors. Physically corrupted Frame.*

Modbus . **NoOfBreaks**	[Operation / Count and RevData / Modbus / RTU]
#	*Number of detected communication aborts*

7.6 IEC 61850 – IEC 61850 communication

7.6.1 IEC 61850: Settings

IEC 61850 . **Function**	[Device Para / IEC 61850]	
Inactive	Inactive, Active ↳ 1..n, OnOffList.	S.3
Permanent activation or deactivation of module/element.		

IEC 61850 . **Deadb integr time**	[Device Para / IEC 61850]	
0	0 . . . 300	S.3
Deadband integration time.		

7.6.2 IEC 61850: Direct Controls

IEC 61850 . **ResetStatistic**	[Operation / Reset / Counter]	
Inactive	Inactive, Active ↳ Mode.	P.1
Reset of all IEC61850 diagnostic counters		

7.6.3 IEC 61850: Signals (Output States)

IEC 61850 . **MMS Client connected**	[Operation / Status Display / IEC 61850 / State]
At least one MMS client is connected to the device	

IEC 61850 . **All Goose Subscriber active**	[Operation / Status Display / IEC 61850 / State]
All Goose subscriber in the device are working	

IEC 61850 . **SPCSO1** **...** IEC 61850 . **SPCSO32**	[Operation / Status Display / IEC 61850 / ControlInputs]
⇫	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*

IEC 61850 . **VirtInp1** **...** IEC 61850 . **VirtInp32**	[Operation / Status Display / IEC 61850 / VirtualInput]
⇫	*Signal: Virtual Input (IEC61850 GGIO Ind)*

IEC 61850 . **Quality of GGIO In1** **...** IEC 61850 . **Quality of GGIO In32**	[Operation / Status Display / IEC 61850 / VirtualInput]
⇫	*Self-Supervision of the GGIO Input*

7.6.4 IEC 61850: Values

IEC 61850 . **GoosePublisherState**	[Operation / Status Display / IEC 61850 / State]	
Off	Off, On, Error ↳ State.	
⇘	*State of the GOOSE Publisher (on or off)*	

IEC 61850 . **GooseSubscriberState**	[Operation / Status Display / IEC 61850 / State]	
Off	Off, On, Error ↳ State.	
⇘	*State of the GOOSE Subscriber (on or off)*	

IEC 61850 . **MmsServerState**	[Operation / Status Display / IEC 61850 / State]
Off	Off, On, Error State.
State of MMS Server (on or off)	

7.6.5 IEC 61850: Counters

IEC 61850 . **NoOfGooseRxAll**	[Operation / Count and RevData / IEC 61850]
Total number of received GOOSE messages including messages for other devices (subscribed and not subscribed messages).	

IEC 61850 . **NoOfGooseRxSubscribed**	[Operation / Count and RevData / IEC 61850]
Total Number of subscribed GOOSE messages including messages with incorrect content.	

IEC 61850 . **NoOfGooseRxCorrect**	[Operation / Count and RevData / IEC 61850]
Total Number of subscribed and correctly received GOOSE messages.	

IEC 61850 . **NoOfGooseRxNew**	[Operation / Count and RevData / IEC 61850]
Number of subscribed and correctly received GOOSE messages with new content.	

IEC 61850 . **NoOfGooseTxAll**	[Operation / Count and RevData / IEC 61850]
Total Number of GOOSE messages that have been published by this device.	

IEC 61850 . **NoOfGooseTxNew**	[Operation / Count and RevData / IEC 61850]
Total Number of new GOOSE messages (modified content) that have been published by this device.	

IEC 61850 . **NoOfServerRequestsAll**	[Operation / Count and RevData / IEC 61850]
Total number of MMS Server requests including incorrect requests.	

IEC 61850 . **NoOfDataReadAll**	[Operation / Count and RevData / IEC 61850]
Total Number of values read from this device including incorrect requests.	

IEC 61850 . **NoOfDataReadCorrect**	[Operation / Count and RevData / IEC 61850]
#	*Total Number of correctly read values from this device.*

IEC 61850 . **NoOfDataWrittenAll**	[Operation / Count and RevData / IEC 61850]
#	*Total Number of values written by this device including incorrect ones.*

IEC 61850 . **NoOfDataWrittenCorrect**	[Operation / Count and RevData / IEC 61850]
#	*Total Number of correctly written values by this device.*

IEC 61850 . **NoOfDataChangeNotification**	[Operation / Count and RevData / IEC 61850]
#	*Number of detected changes within the datasets that are published with GOOSE messages.*

IEC 61850 . **No of Client Connections**	[Operation / Count and RevData / IEC 61850]
#	*Number of active MMS client connections*

7.6.6 IEC 61850 – Virt.Outp.

7.6.6.1 IEC 61850: Settings

IEC 61850 . **VirtualOutput1** **...** IEC 61850 . **VirtualOutput32**	[Device Para / IEC 61850]	
"-"	"-" . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Virtual Output. This signal can be assigned or visualized via the SCD file to other devices within the IEC61850 substation.		

7.6.6.2 IEC 61850: Input States

IEC 61850 . **VirtOut1-I** **...** IEC 61850 . **VirtOut32-I**	[Operation / Status Display / IEC 61850 / VirtualOutput]
Module input state: Binary state of the Virtual Output (GGIO)	

7.7 Profibus – Profibus Module

7.7.1 Profibus: Settings

Profibus . **Slave ID**	[Device Para / Profibus / Bus parameters]	
2	2 ... 125	S.3
Device address (Slave ID) within the bus system. Each device address has to be unique within a bus system.		

Profibus . **Config Bin Inp 1** **...** Profibus . **Config Bin Inp 32**	[Device Para / Profibus / Config Bin Inp 1-16] [Device Para / Profibus / Config Bin Inp 17-32]	
"-"	"-" ... Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Virtual Digital Input. This corresponds to a virtual binary output of the protective device.		

Profibus . **Latched 1** **...** Profibus . **Latched 32**	[Device Para / Profibus / Config Bin Inp 1-16] [Device Para / Profibus / Config Bin Inp 17-32]	
Inactive	Inactive, Active ↳ Mode.	S.3
Defines whether the Input is latched.		

7.7.2 Profibus: Direct Controls

Profibus . **Reset Comds**	[Operation / Reset / Counter]	
Inactive	Inactive, Active ↳ Mode.	P.1
All Profibus Commands will be reset.		

7.7.3 Profibus: Input States

Profibus . **Assignment 1-I** **...** Profibus . **Assignment 32-I**	[Operation / Status Display / Profibus / Config Bin Inp 1-16] [Operation / Status Display / Profibus / Config Bin Inp 17-32]
⇩	*Module input state: Comm Assignment*

7.7.4 Profibus: Signals (Output States)

Profibus . **Data OK**	[Operation / Status Display / Profibus / State]
⇧	*Data within the input field are OK (Yes=1)*

Profibus . **SubModul Err**	[Operation / Status Display / Profibus / State]
⇧	*Assignable Signal, Failure in Sub-Module, Communication Failure.*

Profibus . **Connection active**	[Operation / Status Display / Profibus / State]
⇧	*Connection active*

Profibus . **Comm Cmd 1** **...** Profibus . **Comm Cmd 16**	[Operation / Status Display / Profibus / Commands]
⇧	*Communication Command*

7.7.5 Profibus: Values

Profibus . **Slave State**	[Operation / Status Display / Profibus / State]	
Baud Search	Baud Search ... Data exchange ↳ State.	
✎	*Communication State between slave and master.*	

Profibus . **Baud rate**	[Operation / Status Display / Profibus / State]
-.-	12 Mb/s ... -.- ↳ Baud rate.

✎ *The baud rate that has been detected lastly, will still be shown after a connection issue.*

Profibus . **PNO Id**	[Operation / Status Display / Profibus / State]
0C50h	0C50h ↳ PNO Id.

✎ *PNO Identification Number. GSD Identification Number.*

7.7.6 Profibus: Counters

Profibus . **Master ID**	[Operation / Status Display / Profibus / State]

Device address (Master ID) within the bus system. Each device address has to be unique within a bus system.

Profibus . **HO Id PSub**	[Operation / Status Display / Profibus / State]

Handoff Id of PbSub

Profibus . **t-WatchDog**	[Operation / Status Display / Profibus / State]

The Profibus Chip detects a communication issue if this timer is expired without any communication (Parametrizing telegram).

Profibus . **Fr Sync Err**	[Operation / Count and RevData / Profibus]

Frames, that were sent from the master to the slave are faulty.

Profibus . **crcErrors**	[Operation / Count and RevData / Profibus]

Number of CRC errors that the ss manager has recognized in received response frames from ss (each error caused a subsystem reset)

Profibus . **frLossErrors**	[Operation / Count and RevData / Profibus]

Number of frame loss errors that the ss manager recognized in received response frames from ss (each error caused a subsystem reset)

Profibus . **ssCrcErrors**	[Operation / Count and RevData / Profibus]
#	*Number of CRC errors that the subsystem has recognized in received trigger frames from host*

Profibus . **ssResets**	[Operation / Count and RevData / Profibus]
#	*Number of subsystem resets/restarts from ss manager*

7.8 IRIG-B – IRIG-B Module

7.8.1 IRIG-B: Device Planning Parameters

IRIG-B . **Mode**	[Device Planning]	
“-”	“-”, Use ↳ Mode.	S.3
General Operation Mode		

7.8.2 IRIG-B: Settings

IRIG-B . **Function**	[Device Para / Time / TimeSync / IRIG-B]	
Inactive	Inactive, Active ↳ Mode.	S.3
Permanent activation or deactivation of module/element.		

IRIG-B . **IRIG-B00X**	[Device Para / Time / TimeSync / IRIG-B]	
IRIGB-000	IRIGB-000 . . . IRIGB-007 ↳ IRIG-B00X.	S.3
Determination of the Type: IRIG-B00X. IRIG-B types differ in types of included “Coded Expressions” (year, control-functions, straight-binary-seconds).		

7.8.3 IRIG-B: Direct Controls

IRIG-B . **Res IRIG-B Cr**	[Operation / Reset / Counter]	
Inactive	Inactive, Active ↳ Mode.	P.1
Resetting of the Diagnosis Counters: IRIG-B		

7.8.4 IRIG-B: Signals (Output States)

IRIG-B . **IRIG-B active**	[Operation / Status Display / TimeSync / IRIG-B]
⇧	*Signal: If there is no valid IRIG-B signal for 60 sec, IRIG-B is regarded as inactive.*

IRIG-B . **High-Low Invert**	[Operation / Status Display / TimeSync / IRIG-B]
⇧	*Signal: The High and Low signals of the IRIG-B are inverted. This does NOT mean that the wiring is faulty. If the wiring is faulty no IRIG-B signal will be detected.*

IRIG-B . **Control Signal1** **...** IRIG-B . **Control Signal18**	[Operation / Status Display / TimeSync / IRIG-B]
⇧	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*

7.8.5 IRIG-B: Counters

IRIG-B . **NoOfFramesOK**	[Operation / Count and RevData / TimeSync / IRIG-B]
#	*Total number valid Frames.*

IRIG-B . **NoOfFrameErrors**	[Operation / Count and RevData / TimeSync / IRIG-B]
#	*Total Number of Frame Errors. Physically corrupted Frame.*

IRIG-B . **Edges**	[Operation / Count and RevData / TimeSync / IRIG-B]
#	*Edges: Total number of rising and falling edges. This signal indicates if a signal is available at the IRIG-B input.*

7.9 SNTP – SNTP-Module

7.9.1 SNTP: Device Planning Parameters

SNTP . **Mode**	[Device Planning]	
“-”	“-”, Use ↳ Mode.	S.3
General Operation Mode		

7.9.2 SNTP: Settings

SNTP . **Server1**	[Device Para / Time / TimeSync / SNTP]	
Inactive	Inactive, Active ↳ Mode.	S.3
Server 1		

SNTP . **IP Byte1** **...** SNTP . **IP Byte4**	[Device Para / Time / TimeSync / SNTP]	
0	0 ... 255	S.3
IP1.IP2.IP3.IP4		

SNTP . **Server2**	[Device Para / Time / TimeSync / SNTP]	
Inactive	Inactive, Active ↳ Mode.	S.3
Server 2		

7.9.3 SNTP: Direct Controls

SNTP . **Res Counter**	[Operation / Reset / Counter]	
Inactive	Inactive, Active ↳ Mode.	P.1
◉	*Reset all Counters.*	

7.9.4 SNTP: Signals (Output States)

SNTP . **SNTP active**	[Operation / Status Display / TimeSync / SNTP]
⇧	*Signal: If there is no valid SNTP signal for 120 sec, SNTP is regarded as inactive.*

7.9.5 SNTP: Values

SNTP . **Used Server**	[Operation / Status Display / TimeSync / SNTP]	
None	Server1, Server2 , None ↳ Server State.	
✎	*Which Server is used for SNTP synchronization.*	

SNTP . **PrecServer1**	[Operation / Status Display / TimeSync / SNTP]
✎	*Precision of Server 1*

SNTP . **PrecServer2**	[Operation / Status Display / TimeSync / SNTP]
✎	*Precision of Server 2*

SNTP . **ServerQlty**	[Operation / Status Display / TimeSync / SNTP]	
“-”	GOOD, SUFFICIENT, BAD, “-” ↳ State.	
✎	*Quality of Server used for Synchronization (GOOD, SUFFICIENT, BAD)*	

SNTP . **NetConn**	[Operation / Status Display / TimeSync / SNTP]	
“-”	GOOD, SUFFICIENT, BAD, “-” ↳ State.	
✎	*Quality of Network Connection (GOOD, SUFFICIENT, BAD).*	

7.9.6 SNTP: Counters

SNTP . **StratumServer1**	[Operation / Status Display / TimeSync / SNTP]
#	*Stratum of Server 1*

SNTP . **StratumServer2**	[Operation / Status Display / TimeSync / SNTP]
#	*Stratum of Server 2*

SNTP . **NoOfSyncs**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Total Number of Synchronizations.*

SNTP . **NoOfConnectLost**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Total Number of lost SNTP Connections (no sync for 120 sec).*

SNTP . **NoOfSmallSyncs**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Service counter: Total Number of very small Time Corrections.*

SNTP . **NoOfNormSyncs**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Service counter: Total Number of normal Time Corrections.*

SNTP . **NoOfBigSyncs**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Service counter: Total Number of big Time Corrections.*

SNTP . **NoOfFiltSyncs**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Service counter: Total Number of filtered Time Corrections.*

SNTP . **NoOfSlowTrans**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Service counter: Total Number of slow Transfers.*

SNTP . **NoOfHighOffs**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Service counter: Total Number of high Offsets.*

SNTP . **NoOfIntTimeouts**	[Operation / Count and RevData / TimeSync / SNTP]
#	*Service counter: Total Number of internal timeouts.*

7.10 TimeSync – Time synchronization

Date and Time	[Device Para / Time / Date and Time]
This item represents a special dialog. (See the Technical Manual for details.) *(Re-)setting Date and Time*	

7.10.1 TimeSync: Settings

TimeSync . **Time Zones**	[Device Para / Time / Timezone]	
UTC+0 London	UTC+14 Kiritimati ... UTC-11 Midway Islands ↳ Time Zones.	S.3
Time Zones		

TimeSync . **DST offset**	[Device Para / Time / Timezone]	
60min	-180min ... 180min	S.3
Difference to wintertime		

TimeSync . **DST manual**	[Device Para / Time / Timezone]	
Active	Inactive, Active ↳ Mode.	S.3
Manual setting of the Daylight Saving Time		

TimeSync . **Summertime**	[Device Para / Time / Timezone]	
Inactive	Inactive, Active ↳ Mode.	S.3
Daylight Saving Time		

TimeSync . **Summertime m**	[Device Para / Time / Timezone]	
March	January ... December ↳ Month of clock change.	S.3
Month of clock change summertime		

TimeSync . **Summertime d**	[Device Para / Time / Timezone]	
Sunday	Sunday ... General day ↳ Date.	S.3
Day of clock change summertime		

TimeSync . **Summertime w**	[Device Para / Time / Timezone]	
Last	First, Second, Third, Fourth, Last ↳ Day of clock change.	S.3
Place of selected day in month (for clock change summertime)		

TimeSync . **Summertime h**	[Device Para / Time / Timezone]	
2h	0h ... 23h	S.3
Hour of clock change summertime		

TimeSync . **Summertime min**	[Device Para / Time / Timezone]	
0min	0min ... 59min	S.3
Minute of clock change summertime		

TimeSync . **Wintertime m**	[Device Para / Time / Timezone]	
October	January ... December ↳ Month of clock change.	S.3
Month of clock change wintertime		

TimeSync . **Wintertime d**	[Device Para / Time / Timezone]	
Sunday	Sunday ... General day ↳ Date.	S.3
Day of clock change wintertime		

TimeSync . **Wintertime w**	[Device Para / Time / Timezone]	
Last	First, Second, Third, Fourth, Last ↳ Day of clock change.	S.3
Place of selected day in month (for clock change wintertime)		

TimeSync . **Wintertime h**	[Device Para / Time / Timezone]	
3h	0h ... 23h	S.3
Hour of clock change wintertime		

TimeSync . **Wintertime min**	[Device Para / Time / Timezone]	
0min	0min ... 59min	S.3
Minute of clock change wintertime		

TimeSync . **TimeSync**	[Device Para / Time / TimeSync / TimeSync]	
“-”	“-”, IRIG-B . IRIG-B, SNTP . SNTP, Modbus . Modbus, DNP . DNP ↳ Used Protocol.	S.3
Time synchronization		

7.10.2 TimeSync: Signals (Output States)

TimeSync . **synchronized**	[Operation / Status Display / TimeSync / TimeSync]
Clock is synchronized.	

8 Protection Parameter

8.1 Prot: Direct Controls

Prot . **Res FaultNo**	[Operation / Reset / Counter]	
Inactive	Inactive, Active ↳ Mode.	P.1
◉	*Resetting of fault number.*	

8.2 Prot: Signals (Output States)

Prot . **Active**	[Operation / Status Display / All Actives] [Operation / Status Display / Prot]
⇧	*Signal: Active*

Prot . **Pickup**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / Prot]
⇧	*Signal: General Pickup*

Prot . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / Prot]
⇧	*Signal: General Trip*

Prot . **Available**	[Operation / Status Display / Prot]
⇧	*Signal: Protection is available.*

Prot . **Pickup Phase A**	[Operation / Status Display / Prot]
⇧	*Signal: General Pickup Phase A*

Prot . **Pickup Phase B**	[Operation / Status Display / Prot]
⇧	*Signal: General Pickup Phase B*

Prot . **Pickup Phase C**	[Operation / Status Display / Prot]
⇧	*Signal: General Pickup Phase C*

Prot . **Pickup IX**	[Operation / Status Display / Prot]
⇧	*Signal: General Pickup - Ground Fault*

Prot . **Trip Phase A**	[Operation / Status Display / Prot]
⇧	*Signal: General Trip Phase A*

Prot . **Trip Phase B**	[Operation / Status Display / Prot]
⇧	*Signal: General Trip Phase B*

Prot . **Trip Phase C**	[Operation / Status Display / Prot]
⇧	*Signal: General Trip Phase C*

Prot . **Trip IX**	[Operation / Status Display / Prot]
⇧	*Signal: General Trip Ground Fault*

Prot . **Res FaultNo**	[Operation / Status Display / Prot]
⇧	*Signal: Resetting of fault number.*

Prot . **Fault No.**	[Operation / Count and RevData / Prot]
⇧	*Waveform number*

8.3 MStart – Motor Start

8.3.1 MStart: Settings

MStart . **Reversing**	[System Para]	
Inactive	Inactive, Active ↳ Active/Inactive.	P.2

This setting specifies whether or not the starter for this motor is designed to reverse the phase sequence and to make the motor run in either direction.

If set to “active”, either phase sequence is accepted during a motor start.

If set to “inactive”, the reversed phase sequence leads to a trip.

MStart . **FLA**	[System Para]	
10A	10A ... 6000A	P.2

Full load current (amperes). Set to maximum stator continuous RMS current primary (actual motor winding) amperes in each phase. Use motor nameplate or manufacturers data. Note that the ratio FLA/CT prim must lie between 0.25 and 1.5 in order to have reliable motor protection.

MStart . **LRC**	[System Para]	
3.00FLA	3.00FLA ... 12.00FLA	P.2

Set to the locked-rotor current (the current the motor draws when stalled), in times of FLA. Use motor nameplate or manufacturers data.

MStart . **LRTC**	[System Para]	
1s	1s ... 120s	P.2

Specifies how long a locked-rotor or stall condition can be maintained before the motor is damaged, in seconds, for a cold start. Use motor nameplate or manufacturers data.

MStart . **UTC**	[System Para]	
0.85	0.85 ... 1.50	P.2

Ultimate trip threshold. Sets the current level above which a trip will eventually occur when no RTD stator temperature data is available, in multiple of FLA. For normal use, set UTC to the service factor times 100%. The service factor is found on the motor nameplate or in manufacturers data.

MStart . **STPC**	[System Para]	
0.02FLA	0.02FLA ... 0.20FLA	P.2
Stop current threshold, in multiple of FLA, if the actual current is below the threshold for at least 300 milliseconds. If a stop state occurs, the jogging functions Starts per Hour Allowed (SPH), Time Between Starts (TBS) and Anti-Backspin (ABK) are enforced. All phases of the current must be below this level before a stop will be declared.		

MStart . **TRN Criteria**	[Protection Para / MStart / Start Control]	
TRN T and I	TRN I, TRN TIME, TRN T and I, TRN T or I ↳ 1..n, TRN List.	P.2
Start transition criterion		

MStart . **TRNT**	[Protection Para / MStart / Start Control]	
10s	0s ... 1200s	P.2
Motor start transition time limit		

MStart . **TRNC**	[Protection Para / MStart / Start Control]	
1.30FLA	0.10FLA ... 3.00FLA	P.2
Motor start transitions current level in FLA%		

MStart . **NOCS**	[Protection Para / MStart / Start Control]	
1	1 ... 5	P.2
Number of cold starts limit		

MStart . **TBS Fc**	[Protection Para / MStart / Start Control]	
Inactive	Inactive, Active ↳ Mode.	P.2
Time Between Starts on/off		

MStart . **TBS Timer**	[Protection Para / MStart / Start Control]	
60min	1min ... 240min	P.2
Time Between Starts Limit		

MStart . **SPH Fc**	[Protection Para / MStart / Start Control]	
Inactive	Inactive, Active ↳ Mode.	P.2
Starts Per Hour		

MStart . **SPH**	[Protection Para / MStart / Start Control]	
1	1 ... 10	P.2
SPH		

MStart . **INSQReportFrom**	[Protection Para / MStart / Start Control]	
Inactive	Inactive, InSq Start2Run, InSq Stop2Start ↳ 1..n, InSq List.	P.2
INcomplete SeQuence report time starting point		

MStart . **INSQReportTime**	[Protection Para / MStart / Start Control]	
1s	1s ... 240s	P.2
INSQ Report back time		

MStart . **LAT Fc**	[Protection Para / MStart / Start Control]	
Inactive	Inactive, Active ↳ Mode.	P.2
Long Time Acceleration Timer		

MStart . **LAT Timer**	[Protection Para / MStart / Start Control]	
1200s	1s ... 1200s	P.2
Large motors with a high inertia may experience starting currents that exceed the locked rotor current and time. The protective relay has logic and provisions for a zero speed switch input to differentiate between a stall and start condition. If the motor is spinning then the relay will not trip on the normal locked rotor time allowing the motor to start.		

MStart . **ABK Fc**	[Protection Para / MStart / Start Control]	
Inactive	Inactive, Active ↳ Mode.	P.2
For certain applications, such as pumping a fluid up a pipe, the motor may be driven backward for a period of time after it stops. The protective relay provides an anti-backspin timer to prevent starting the motor while it is spinning in the reverse direction. The timer begins counting from the moment a stop is declared by the relay.		

MStart . **ABK Timer**	[Protection Para / MStart / Start Control]	
3600s	1s . . . 3600s	P.2
For certain applications, such as pumping a fluid up a pipe, the motor may be driven backward for a period of time after it stops. The protective relay provides an anti-backspin timer to prevent starting the motor while it is spinning in the reverse direction. The timer begins counting from the moment a stop is declared by the relay.		

MStart . **ZSS**	[Protection Para / MStart / Start Control]	
Inactive	Inactive, Active ↳ 1..n, ZSS List.	P.2
Zero Speed Switch		

MStart . **EmgOvr**	[Protection Para / MStart / Start Control]	
Inactive	Inactive, DI, UI, DI or UI ↳ EmgOvr List.	P.2
Emergency override options. Signal has to be active in order to release the thermal capacity of the motor. Please notice that by doing this you run the risk of damaging the motor. “EMGOVR” has to be set to “DI” or “DI or UI” for this input to take effect.		

MStart . **RemStartBlo Fc**	[Protection Para / MStart / Start Control]	
Inactive	Inactive, Active ↳ Mode.	P.2
RemStartBlo Fc		

MStart . **ThermBlo Fc**	[Protection Para / MStart / Start Control]	
Inactive	Inactive, Active ↳ Mode.	P.2
ThermBlo Fc		

MStart . **RemStartBlock**	[Protection Para / MStart / Motor Inputs]	
“-”	“-” . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	P.2
Remote Motor Start Blocking		

MStart . **EmgOvr**	[Protection Para / MStart / Motor Inputs]	
“-”	“-” . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	P.2
Emergency Override. Signal has to be active in order to release the thermal capacity of the motor. Please notice that by doing this you run the risk of damaging the motor. “EMGOVR” has to be set to “DI” or “DI or UI” for this input to take effect		

MStart . **INSQ**	[Protection Para / MStart / Motor Inputs]	
“-”	“-” . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	P.2
INcomplete SeQuence		

MStart . **ZSS**	[Protection Para / MStart / Motor Inputs]	
“-”	“-” . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	P.2
Zero Speed Switch		

MStart . **STPC Blo**	[Protection Para / MStart / Motor Inputs]	
"-"	"-" ... Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	P.2
With this setting a Digital Input keeps the Motor in the RUN mode, even when the motor current drops below STPC (motor stop current).		

MStart . **t-Blo-IOC**	[Protection Para / MStart / Start Delay Timer]	
0.05s	0.03s ... 1.00s	P.2
Phase Instantaneous Overcurrent Start Delay. 50P[x] elements are blocked for the time programmed under this parameter, while the motor is starting.		

MStart . **t-Blo-GOC**	[Protection Para / MStart / Start Delay Timer]	
0.08s	0.03s ... 1.00s	P.2
Ground Instantaneous Overcurrent Start Delay. 50X[x], 50R[x] and 50G[x] elements are blocked for the time programmed under this parameter, while the motor is starting		

MStart . **t-Blo-UnderLoad**	[Protection Para / MStart / Start Delay Timer]	
60s	0s ... 1200s	P.2
Underload Start Delay. 37[x] elements are blocked for the time programmed under this parameter, while the motor is starting		

MStart . **t-Blo-IUnbalance**	[Protection Para / MStart / Start Delay Timer]	
10.00s	0.03s ... 1200.00s	P.2
Current Unbalance Start Delay. 46[x] elements are blocked for the time programmed under this parameter, while the motor is starting		

MStart . **t-Blo-JAM**	[Protection Para / MStart / Start Delay Timer]	
60.00s	0.03s ... 1200.00s	P.2
Jam Start Delay. 50J[x] elements are blocked for the time programmed under this parameter, while the motor is starting		

8.3.2 MStart: Direct Controls

MStart . **RstForcedStart**	[Operation / Reset / Flags]	
Inactive	Inactive, Active ↳ Mode.	S.3
◉	*Reset Forced Start flag*	

MStart . **EmergOverHMI**	[Operation / Reset / EmgOvr]	
Inactive	Inactive, Active ↳ Mode.	S.3
◉	*Emergency override through front display*	

8.3.3 MStart: Input States

MStart . **RemStartBlock-I**	[Operation / Status Display / MStart / Motor Inputs]
⇩	*State of the module input: Remote Motor Start Blocking*

MStart . **EmgOvr-I**	[Operation / Status Display / MStart / Motor Inputs]
⇩	*State of the module input: Emergency Override. Signal has to be active in order to release the thermal capacity of the motor. Please notice that by doing this you run the risk of damaging the motor. “EMGOVR” has to be set to “DI” or “DI or UI” for this input to take effect*

MStart . **INSQ-I**	[Operation / Status Display / MStart / Motor Inputs]
⇩	*State of the module input: INcomplete SeQuence*

MStart . **ZSS-I**	[Operation / Status Display / MStart / Motor Inputs]
⇩	*State of the module input: Zero Speed Switch*

MStart . **STPC Blo-I**	[Operation / Status Display / MStart / Motor Inputs]
⇩	*State of the module input: With this setting a Digital Input keeps the Motor in the RUN mode, even when the motor current drops below STPC (motor stop current).*

8.3.4 MStart: Signals (Output States)

MStart . **Active**	[Operation / Status Display / All Actives] [Operation / Status Display / MStart / Start Control]
Signal: Active	

MStart . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / MStart / Start Control]
Signal: Trip	

MStart . **Start**	[Operation / Status Display / MStart / Start Control]
Signal: Motor is in start mode	

MStart . **Run**	[Operation / Status Display / MStart / Start Control]
Signal: Motor is in run mode	

MStart . **Stop**	[Operation / Status Display / MStart / Start Control]
Signal: Motor is in stop mode	

MStart . **Blo**	[Operation / Status Display / MStart / Start Control]
Signal: Motor is blocked for starting or transition to Run mode	

MStart . **SPHBlocked**	[Operation / Status Display / MStart / Start Control]
Signal: Motor is prohibited to start due to starts per hour limits	

MStart . **SPHBlockAlarm**	[Operation / Status Display / MStart / Start Control]
Signal: Motor is prohibited to start due to starts per hour limits, would come active in the next stop	

MStart . **TBSBlocked**	[Operation / Status Display / MStart / Start Control]
Signal: Motor is prohibited to start due to time between starts limits	

MStart . **ThermalBlock**	[Operation / Status Display / MStart / Start Control]
⇪	*Signal: Thermal block*

MStart . **RemBlockStart**	[Operation / Status Display / MStart / Start Control]
⇪	*Signal: Motor is prohibited to start due to external blocking through digital input DI*

MStart . **TransitionTrip**	[Operation / Status Display / MStart / Start Control]
⇪	*Signal: Start transition fail trip*

MStart . **ZSSTrip**	[Operation / Status Display / MStart / Start Control]
⇪	*Signal: Zero speed trip (possible locked rotor)*

MStart . **INSQSP2STFaill**	[Operation / Status Display / MStart / Start Control]
⇪	*Signal: Fail to transit from stop to start based on reported back time*

MStart . **INSQSt2RunFail**	[Operation / Status Display / MStart / Start Control]
⇪	*Signal: Fail to transit from start to run based on reported back time*

MStart . **LATBlock**	[Operation / Status Display / MStart / Start Control]
⇪	*Signal: Long acceleration timer enforced*

MStart . **ColdStartSeq**	[Operation / Status Display / MStart / Start Control]
⇪	*Signal: Motor cold start sequence flag*

MStart . **ForcedStart**	[Operation / Status Display / MStart / Start Control]
⇪	*Signal: Motor being forced to start*

MStart . **TripPhaseReverse**	[Operation / Status Display / MStart / Start Control]
⇪	*Signal: Relay tripped because of phase reverse detection*

MStart . **EmergOverrideDI**	[Operation / Status Display / MStart / Start Control]
⇪	*Signal: Emergency override start blocking through digital input DI*

MStart . **EmergOverrideUI**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Emergency override start blocking through front panel*

MStart . **ABKActive**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Anti-backspin is active. For certain applications, such as pumping a fluid up a pipe, the motor may be driven backward for a period of time after it stops. The anti-backspin timer prevents starting the motor while it is spinning in the reverse direction.*

MStart . **I_Transit**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Current transition signal*

MStart . **T_Transit**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Time transition signal*

MStart . **MotorStopBlo**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Motor stop block other protection functions*

MStart . **RFD_IA_Normal**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: System IA RotaryFieldDetection Normal*

MStart . **RFD_IA_Reverse**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: System IA RotaryFieldDetection Reverse*

MStart . **NOCSBlocked**	[Operation / Status Display / MStart / Start Control]
⇫	*Signal: Motor is prohibited to start due to number of cold start limits*

MStart . **GOCStartBlock**	[Operation / Status Display / MStart / Start Delay Timer]
⇫	*Signal: Ground Instantaneous Overcurrent Start Delay. GOC (Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*

MStart . **IOCStartBlock**	[Operation / Status Display / MStart / Start Delay Timer]
⇫	*Signal: Phase Instantaneous Overcurrent Start Delay. IOC (Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*

MStart . **ULoadStartBlock**	[Operation / Status Display / MStart / Start Delay Timer]
⇧	*Signal: Underload Start Delay. Underload(Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*

MStart . **JamStartBlock**	[Operation / Status Display / MStart / Start Delay Timer]
⇧	*Signal: JAM Start Delay. JAM(Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*

MStart . **UnbalStartBlock**	[Operation / Status Display / MStart / Start Delay Timer]
⇧	*Signal: Motor start block current unbalance signal*

8.3.5 MStart: Values And Counters

MStart . **I3 PRMS avg**	[Operation / Measured Values / Current]
⇘	*Average RMS current of all 3 phases*

MStart . **IA FLA**	[Operation / Measured Values / Current]
#	*Measured value: Phase current multiples of FLA*

MStart . **IB FLA**	[Operation / Measured Values / Current]
#	*Measured value: Phase current multiples of FLA*

MStart . **IC FLA**	[Operation / Measured Values / Current]
#	*Measured value: Phase current multiples of FLA*

MStart . **I3 PFLA avg**	[Operation / Measured Values / Current]
#	*Average RMS current of all 3 phases as multiples of FLA*

MStart . **StartPerHour**	[Operation / Measured Values / Motor Values]
#	*StartPerHour*

MStart . **SPH Release**	[Operation / Measured Values / Motor Values]
#	*In case that the Motor is blocked by a SPH blocking, this timer needs to be expired before the blocking is released and the next motor start is permitted. The next Motor Start will increment the SPH counter again.*

MStart . **WaitTimeStarts**	[Operation / Measured Values / Motor Values]
#	*Wait time between starts remained*

MStart . **ColdStartPermit**	[Operation / Measured Values / Motor Values]
#	*Number of cold starts remaining*

MStart . **AntiBackSpin**	[Operation / Measured Values / Motor Values]
#	*Anti-BackspinTimer*

MStart . **OCNT**	[Operation / History / OperationsCr]
#	*Motor Operation count since last reset. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*

MStart . **RunTime**	[Operation / History / OperationsCr]
⟍	*Motor Operation time since last reset. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*

MStart . **HighestStartI**	[Operation / History / OperationsCr]
#	*Highest starting phase current. The time stamp indicates the point in time when the maximum current has occured. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*

MStart . **HighestRunI**	[Operation / History / OperationsCr]
#	*Highest running phase current. The time stamp indicates the point in time when the maximum current has occured. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*

MStart . **Highest%I2/I1**	[Operation / History / OperationsCr]
⟍	*Highest %I2/I1 value since last reset. The time stamp indicates the point in time when the maximum unbalanced load has occured. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*

MStart . **nEmrgOvr**	[Operation / History / OperationsCr]
#	*Number of emergency overrides since last reset. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*

MStart . **nTRNTrips**	[Operation / History / TripCr]
#	*Number of transition trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

MStart . **nRevTrips**	[Operation / History / TripCr]
#	*Number of reverse spinning trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

MStart . **nZSWTrips**	[Operation / History / TripCr]
#	*Number of zero speed switch trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

MStart . **nINSQTrips**	[Operation / History / TripCr]
#	*Number of incomplete sequence trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

MStart . **nSPHBlocks**	[Operation / History / TripCr]
#	*Number of start per hour blocks since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

MStart . **nTBSBlocks**	[Operation / History / TripCr]
#	*Number of time between start blocks since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

MStart . **TRunTime**	[Operation / History / TotalCr]
⟍	*Motor Operation (Motor run time) time since last reset. Resettable with »Sys . Res TotalCr« or »Sys . Res All«.*

MStart . **TOCS**	[Operation / History / TotalCr]
#	*Total Motor Operation count since last reset. Resettable with "Sys. Res TotalCr" or "All". Resettable with »Sys . Res TotalCr« or »Sys . Res All«.*

8.4 50P[1] . . . 50P[2] – Instantaneous Phase Overcurrent Element.

8.4.1 50P[1]: Device Planning Parameters

50P[1] . **Alarm only**	[Device Planning]	
No	No, Yes ↳ Yes/No.	S.3
Phase Overcurrent Element, if set to “Yes”: Restriction of the function to a supervision functionality, i.e. there is no general trip.		

8.4.2 50P[1]: Settings

50P[1] . **Function**	[Protection Para / 50P[1]]	
Inactive	Inactive, Active ↳ Mode.	P.2
Permanent activation or deactivation of module/element.		

50P[1] . **Pickup**	[Protection Para / 50P[1]]	
2In	0.02In . . . 40.00In	P.2
If the pickup value is exceeded, the module/element starts to time out to trip.		

50P[1] . **t**	[Protection Para / 50P[1]]	
0s	0.00s . . . 300.00s	P.2
Tripping delay		

8.4.3 50P[1]: Signals (Output States)

50P[1] . **Active**	[Operation / Status Display / All Actives] [Operation / Status Display / 50P[1]]
Signal: Active	

50P[1] . **Pickup**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / 50P[1]]
⇧	*Signal: Pickup*

50P[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / 50P[1]]
⇧	*Signal: Trip*

50P[1] . **Pickup IA**	[Operation / Status Display / 50P[1]]
⇧	*Signal: Pickup IA*

50P[1] . **Pickup IB**	[Operation / Status Display / 50P[1]]
⇧	*Signal: Pickup IB*

50P[1] . **Pickup IC**	[Operation / Status Display / 50P[1]]
⇧	*Signal: Pickup IC*

8.4.4 50P[1]: Counters

50P[1] . **nPickups**	[Operation / History / PickupCr]
#	*Number of pickups since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

50P[1] . **nTrips**	[Operation / History / TripCr]
#	*Number of trips since the last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

8.5 50X[1] ... 50X[2] – Instantaneous Ground Overcurrent Element (earth current measured)

8.5.1 50X[1]: Device Planning Parameters

50X[1] . **Alarm only**	[Device Planning]	
No	No, Yes ↳ Yes/No.	S.3
Ground current protection - Element, if set to “Yes”: Restriction of the function to a supervision functionality, i.e. there is no general trip.		

8.5.2 50X[1]: Settings

50X[1] . **Function**	[Protection Para / 50X[1]]	
Inactive	Inactive, Active ↳ Mode.	P.2
Permanent activation or deactivation of module/element.		

50X[1] . **Pickup**	[Protection Para / 50X[1]]	
1In *Avail. depends on HW*	0.02In ... 20.00In	P.2
If the pickup value is exceeded, the module/element will be started.		

50X[1] . **t**	[Protection Para / 50X[1]]	
0.5s	0.00s ... 300.00s	P.2
Tripping delay		

8.5.3 50X[1]: Signals (Output States)

50X[1] . **Active**	[Operation / Status Display / All Actives] [Operation / Status Display / 50X[1]]
Signal: Active	

50X[1] . **Pickup**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / 50X[1]]
⇧	*Signal: The pickup value has been exceeded.*

50X[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / 50X[1]]
⇧	*Signal: Trip*

8.5.4 50X[1]: Counters

50X[1] . **nPickups**	[Operation / History / PickupCr]
#	*Number of pickups since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

50X[1] . **nTrips**	[Operation / History / TripCr]
#	*Number of trips since the last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

8.6 49 – Thermal replica module

8.6.1 49: Settings

49 . **Alarm Function**	[Protection Para / 49]	
Active	Inactive, Active ↳ Mode.	P.2
Turn on or off the alarm function		

49 . **Alarm Threshold**	[Protection Para / 49]	
0.70	0.60 . . . 0.99	P.2
Alarm threshold at which the thermal model will trip, based on percentage of thermal capacity used		

49 . **Alarm Delay**	[Protection Para / 49]	
1min	1min . . . 360min	P.2
Thermal capacity used alarm delay		

8.6.2 49: Direct Controls

49 . **Res I2T Used**	[Operation / Reset / Flags]	
Inactive	Inactive, Active ↳ Mode.	S.3
Reset thermal capacity used.		

8.6.3 49: Signals (Output States)

49 . **Active**	[Operation / Status Display / All Actives] [Operation / Status Display / 49]
Signal: Active	

49 . **Pickup**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / 49]
⇧	*Signal: Pickup*

49 . **Alarm Pickup**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / 49]
⇧	*Signal: Alarm Pickup*

49 . **Alarm Timeout**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / 49]
⇧	*Signal: Alarm Timeout*

49 . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / 49]
⇧	*Signal: Trip*

49 . **RTD effective**	[Operation / Status Display / 49]
⇧	*This state becomes true if the following conditions are all fulfilled:* *- the state “Load above SF” is true,* *- the Winding Temperature Trip has been activated in the RTD module,* *- for at least one temperature a valid value above 0°C (32°F) is being displayed.*

49 . **Load above SF**	[Operation / Status Display / 49]
⇧	*“Load above Service Factor”: If the current exceeds the set value of “UTC” (“Ultimate trip threshold”) then the used thermal capacity counts up and the state “Load above SF” is becoming true. If the current is below the “UTC” value this state is false.*

8.6.4 49: Counters

49 . **I2T Used**	[Operation / Measured Values / Thermal Capacity]
#	*Thermal capacity used.*

49 . **I2T Remained**	[Operation / Measured Values / Thermal Capacity]
#	*Thermal capacity remained.*

49 . **nAlarms**	[Operation / History / PickupCr]
#	*Number of alarms since the last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

49 . **nTrips**	[Operation / History / TripCr]
#	*Number of trips since the last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

8.7 50J[1] ... 50J[2] – Jam and stall protection

8.7.1 50J[1]: Device Planning Parameters

50J[1] . **Alarm only**	[Device Planning]	
No	No, Yes ↳ Yes/No.	S.3
Jam and stall protection, if set to “Yes”: Restriction of the function to a supervision functionality, i.e. there is no general trip.		

8.7.2 50J[1]: Settings

50J[1] . **Function**	[Protection Para / 50J[1]]	
Inactive	Inactive, Active ↳ Mode.	P.2
Permanent activation or deactivation of module/element.		

50J[1] . **Pickup**	[Protection Para / 50J[1]]	
10FLA	1.00FLA ... 12.00FLA	P.2
JAM pickup based on a multipler of FLA		

50J[1] . **t**	[Protection Para / 50J[1]]	
2.0s	0.0s ... 1200.0s	P.2
Tripping delay		

8.7.3 50J[1]: Signals (Output States)

50J[1] . **Active**	[Operation / Status Display / All Actives] [Operation / Status Display / 50J[1]]
Signal: Active	

50J[1] . **Pickup**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / 50J[1]]
⇧	*Signal: Pickup*

50J[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / 50J[1]]
⇧	*Signal: Trip*

8.7.4 50J[1]: Counters

50J[1] . **nPickups**	[Operation / History / PickupCr]
#	*Number of pickups since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

50J[1] . **nTrips**	[Operation / History / TripCr]
#	*Number of trips since the last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

8.8 37[1] . . . 37[2] – Underload / Undercurrent

8.8.1 37[1]: Device Planning Parameters

37[1] . **Alarm only**	[Device Planning]	
No	No, Yes ↳ Yes/No.	S.3
Underload / Undercurrent, if set to “Yes”: Restriction of the function to a supervision functionality, i.e. there is no general trip.		

8.8.2 37[1]: Settings

37[1] . **Function**	[Protection Para / 37[1]]	
Inactive	Inactive, Active ↳ Mode.	P.2
Permanent activation or deactivation of module/element.		

37[1] . **Underload**	[Protection Para / 37[1]]	
0.50FLA	0.05FLA . . . 0.90FLA	P.2
Underload Pickup based on a multiplier of FLA		

37[1] . **Phases**	[Protection Para / 37[1]]	
any one	any one, all ↳ Phases.	P.2
Indicates if one, two of three or all phases are required for operation		

37[1] . **t**	[Protection Para / 37[1]]	
10.0s	0.4s . . . 1200.0s	P.2
Tripping delay		

8.8.3 37[1]: Signals (Output States)

37[1] . **Active**	[Operation / Status Display / All Actives] [Operation / Status Display / 37[1]]
⇪	*Signal: Active*

37[1] . **Pickup**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / 37[1]]
⇪	*Signal: Pickup*

37[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / 37[1]]
⇪	*Signal: Trip*

8.8.4 37[1]: Counters

37[1] . **nPickups**	[Operation / History / PickupCr]
#	*Number of pickups since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

37[1] . **nTrips**	[Operation / History / TripCr]
#	*Number of trips since the last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

8.9 MLS – Mechanical Load Shedding

8.9.1 MLS: Settings

MLS . **Function**	[Protection Para / MLS]	
Inactive	Inactive, Active ↳ Mode.	P.2
Permanent activation or deactivation of module/element.		

MLS . **Pickup Threshold**	[Protection Para / MLS]	
0.90FLA	0.50FLA ... 1.50FLA	P.2
Load shedding pickup current as multiplier of FLA		

MLS . **t-Pickup Delay**	[Protection Para / MLS]	
1.0s	0.0s ... 5.0s	P.2
Trip delay time		

MLS . **Dropout Threshold**	[Protection Para / MLS]	
0.50FLA	0.50FLA ... 1.50FLA	P.2
Load shedding dropout as multiplier of FLA (Hysteresis)		

MLS . **t-Drop Delay**	[Protection Para / MLS]	
1.0s	0.0s ... 5.0s	P.2
Dropout delay time		

8.9.2 MLS: Signals (Output States)

MLS . **Active**	[Operation / Status Display / All Actives] [Operation / Status Display / MLS]
Signal: Active	

MLS . **Pickup**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / MLS]
⇫	*Signal: Pickup*

MLS . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / MLS]
⇫	*Signal: Trip*

8.10 46[1] . . . 46[2] – Unbalanced Load / Negative Sequence Current

8.10.1 46[1]: Device Planning Parameters

46[1] . **Alarm only**	[Device Planning]	
No	No, Yes ↳ Yes/No.	S.3
Unbalanced Load-Element, if set to “Yes”: Restriction of the function to a supervision functionality, i.e. there is no general trip.		

8.10.2 46[1]: Settings

46[1] . **Function**	[Protection Para / 46[1]]	
Inactive	Inactive, Active ↳ Mode.	P.2
Permanent activation or deactivation of module/element.		

46[1] . **Threshold**	[Protection Para / 46[1]]	
0.3In	0.01In . . . 4.00In	P.2
The Threshold setting defines a minimum operating current magnitude of I2 for the 46 function to operate, which ensures that the relay has a solid basis for initiating a current unbalance trip. This is a supervisory function and not a trip level.		

46[1] . **%(I2/I1)**	[Protection Para / 46[1]]	
40%	2% . . . 40%	P.2
The %(I2/I1) setting is the unbalance trip pickup setting. It is defined by the ratio of negative sequence current to positive sequence current (% Unbalance=I2/I1). Phase sequence will be taken into account automatically.		

46[1] . **t**	[Protection Para / 46[1]]	
2s	0.00s . . . 300.00s	P.2
Tripping delay		

8.10.3 46[1]: Signals (Output States)

46[1] . **Active**	[Operation / Status Display / All Actives] [Operation / Status Display / 46[1]]
⇪	*Signal: Active*

46[1] . **Pickup**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / 46[1]]
⇪	*Signal: Pickup Negative Sequence*

46[1] . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / 46[1]]
⇪	*Signal: Trip*

8.10.4 46[1]: Counters

46[1] . **nPickups**	[Operation / History / PickupCr]
#	*Number of pickups since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

46[1] . **nTrips**	[Operation / History / TripCr]
#	*Number of trips since the last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

8.11 Ex87 – External Differential Protection

8.11.1 Ex87: Device Planning Parameters

Ex87 . **Alarm only**	[Device Planning]	
No	No, Yes ↳ Yes/No.	S.3
External Protection - Module, if set to “Yes”: Restriction of the function to a supervision functionality, i.e. there is no general trip.		

8.11.2 Ex87: Settings

Ex87 . **Alarm**	[Protection Para / Ex87]	
“-”	“-” . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	P.2
Assignment for External Alarm		

Ex87 . **Trip**	[Protection Para / Ex87]	
“-”	“-” . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	P.2
External trip of the Bkr. if the state of the assigned signal is true.		

8.11.3 Ex87: Input States

Ex87 . **Alarm-I**	[Operation / Status Display / Ex87]
Module Input State: Alarm	

Ex87 . **Trip-I**	[Operation / Status Display / Ex87]
Module Input State: Trip	

8.11.4 Ex87: Signals (Output States)

Ex87 . **Active**	[Operation / Status Display / All Actives] [Operation / Status Display / Ex87]
⇫	*Signal: Active*

Ex87 . **Alarm**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / Ex87]
⇫	*Signal: Alarm*

Ex87 . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / Ex87]
⇫	*Signal: Trip*

8.11.5 Ex87: Counters

Ex87 . **nPickups**	[Operation / History / PickupCr]
#	*Number of pickups since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

Ex87 . **nTrips**	[Operation / History / TripCr]
#	*Number of trips since the last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

8.12 Remote Trip – Remote Trip (External)

8.12.1 Remote Trip: Device Planning Parameters

Remote Trip . **Alarm only**	[Device Planning]	
No	No, Yes ↳ Yes/No.	S.3
External Protection - Module, if set to “Yes”: Restriction of the function to a supervision functionality, i.e. there is no general trip.		

8.12.2 Remote Trip: Settings

Remote Trip . **Alarm**	[Protection Para / Remote Trip]	
“-”	“-” . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	P.2
Assignment for External Alarm		

Remote Trip . **Trip**	[Protection Para / Remote Trip]	
“-”	“-” . . . Logic . LE80.Out inverted ↳ 1..n, DI-LogicList.	P.2
External trip of the Bkr. if the state of the assigned signal is true.		

8.12.3 Remote Trip: Input States

Remote Trip . **Alarm-I**	[Operation / Status Display / Remote Trip]
Module Input State: Alarm	

Remote Trip . **Trip-I**	[Operation / Status Display / Remote Trip]
Module Input State: Trip	

8.12.4 Remote Trip: Signals (Output States)

Remote Trip . **Active**	[Operation / Status Display / All Actives] [Operation / Status Display / Remote Trip]
⇪	*Signal: Active*

Remote Trip . **Alarm**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / Remote Trip]
⇪	*Signal: Alarm*

Remote Trip . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / Remote Trip]
⇪	*Signal: Trip*

8.12.5 Remote Trip: Counters

Remote Trip . **nPickups**	[Operation / History / PickupCr]
#	*Number of pickups since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

Remote Trip . **nTrips**	[Operation / History / TripCr]
#	*Number of trips since the last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

8.13 URTD – Universal Resistance Temperature Detector

8.13.1 URTD: Settings

URTD . **Temperature Unit**	[System Para]	
Celsius	Celsius, Fahrenheit ↳ Units.	P.2
Temperature Unit		

URTD . **Force Mode**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / URTD]	
Permanent	Permanent, Timeout ↳ Mode.	P.2
By means of this function the normal Relay Output States can be overwritten (forced) in case that the Relay Output is not in a disarmed state. The relays can be set from normal operation (relay works according to the assigned signals) to "force energized" or "force de-energized" state.		

URTD . **t-Timeout Force**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / URTD]	
0.03s *Only available if:* • URTD . Force Mode = Timeout	0.00s . . . 300.00s	P.2
The Output State will be set by force for the duration of this time. That means, for the duration of this time, the Relay Output does not show the state of the signals that are assigned on it.		

8.13.2 URTD: Direct Controls

URTD . **Function**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / URTD]	
Inactive	Inactive, Active ↳ Active/Inactive.	P.1
Permanent activation or deactivation of module/element.		

URTD . **Force WD1**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
Force Winding 1		

URTD . **Force WD2**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
Force Winding 2		

URTD . **Force WD3**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
Force Winding 3		

URTD . **Force WD4**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
Force Winding 4		

URTD . **Force WD5**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
◉	*Force Winding 5*	

URTD . **Force WD6**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
◉	*Force Winding 6*	

URTD . **Force MB1**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
◉	*Force Motor Bearing 1*	

URTD . **Force MB2**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
◉	*Force Motor Bearing 2*	

URTD . **Force LB1**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
Force Load Bearing 1		

URTD . **Force LB2**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
Force Load Bearing 2		

URTD . **Force Aux1**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
Force Auxiliary1		

URTD . **Force Aux2**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / URTD]	
0	If: URTD . Temperature Unit = Fahrenheit • 32 ... 392 If: URTD . Temperature Unit = Celsius • 0 ... 200	P.1
Force Auxiliary2		

8.13.3 URTD: Signals (Output States)

URTD . **WD1 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) WD1*

URTD . **WD2 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) WD2*

URTD . **WD3 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) WD3*

URTD . **WD4 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) WD4*

URTD . **WD5 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) WD5*

URTD . **WD6 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) WD6*

URTD . **MB1 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) MB1*

URTD . **MB2 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) MB2*

URTD . **LB1 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) LB1*

URTD . **LB2 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) LB2*

URTD . **Aux1 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) Aux1*

URTD . **Aux2 Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) Aux2*

URTD . **Superv**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Signal: URTD Channel Supervision. The value “1” reports a detected channel failure of at least one channel. (The value “0” means that all RTD channels are healthy.)*

URTD . **Connection active**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Signal: There is an active connection between the Temperature Detector (URTD) and the protective relay.*

URTD . **Outs forced**	[Operation / Status Display / Temp-Prot / URTD]
⇧	*Signal: The State of at least one Relay Output has been set by force. That means that the state of at least one Relay is forced and hence does not show the state of the assigned signals.*

8.13.4 URTD: Values

URTD . **WD1**	[Operation / Measured Values / URTD]
⇘	*Winding 1*

URTD . **WD2**	[Operation / Measured Values / URTD]
⇘	*Winding 2*

URTD . **WD3**	[Operation / Measured Values / URTD]
⇘	*Winding 3*

URTD . **WD4**	[Operation / Measured Values / URTD]
✎	*Winding 4*

URTD . **WD5**	[Operation / Measured Values / URTD]
✎	*Winding 5*

URTD . **WD6**	[Operation / Measured Values / URTD]
✎	*Winding 6*

URTD . **MB1**	[Operation / Measured Values / URTD]
✎	*Motor Bearing 1*

URTD . **MB2**	[Operation / Measured Values / URTD]
✎	*Motor Bearing 2*

URTD . **LB1**	[Operation / Measured Values / URTD]
✎	*Load Bearing 1*

URTD . **LB2**	[Operation / Measured Values / URTD]
✎	*Load Bearing 2*

URTD . **Aux1**	[Operation / Measured Values / URTD]
✎	*Auxiliary1*

URTD . **Aux2**	[Operation / Measured Values / URTD]
✎	*Auxiliary2*

URTD . **RTD Max**	[Operation / Measured Values / URTD]
✎	*Maximum temperature of all channels.*

8.14 RTD – Temperature Protection Module

8.14.1 RTD: Settings

RTD . **WD Alarm Function**	[Protection Para / RTD / WD Group]	
Inactive	Inactive, Active ↳ Mode.	P.2
Winding Alarm Function		

RTD . **WD Trip Function**	[Protection Para / RTD / WD Group]	
Inactive	Inactive, Active ↳ Mode.	P.2
Winding Trip Function		

RTD . **WD Alarm**	[Protection Para / RTD / WD Group]	
80°C	0°C ... 200°C	P.2
Winding Threshold for Temperature Alarm		

RTD . **WD t-Alarm-Delay**	[Protection Para / RTD / WD Group]	
1min	0min ... 360min	P.2
Winding After this time has expired a Temperature Alarm is issued.		

RTD . **WD Trip**	[Protection Para / RTD / WD Group]	
100°C	0°C ... 200°C	P.2
Winding Threshold for Temperature Trip		

RTD . **MB Alarm Function**	[Protection Para / RTD / MB Group]	
Inactive	Inactive, Active ↳ Mode.	P.2
Motor Bearing Alarm Function		

RTD . **MB Trip Function**	[Protection Para / RTD / MB Group]	
Inactive	Inactive, Active ↳ Mode.	P.2
Motor Bearing Trip Function		

RTD . **MB Alarm**	[Protection Para / RTD / MB Group]	
80°C	0°C ... 200°C	P.2
Motor Bearing Threshold for Temperature Alarm		

RTD . **MB t-Alarm-Delay**	[Protection Para / RTD / MB Group]	
1min	0min ... 360min	P.2
Motor Bearing After this time has expired a Temperature Alarm is issued.		

RTD . **MB Trip**	[Protection Para / RTD / MB Group]	
100°C	0°C ... 200°C	P.2
Motor Bearing Threshold for Temperature Trip		

RTD . **LB Alarm Function**	[Protection Para / RTD / LB Group]	
Inactive	Inactive, Active ↳ Mode.	P.2
Load Bearing Alarm Function		

RTD . **LB Trip Function**	[Protection Para / RTD / LB Group]	
Inactive	Inactive, Active ↳ Mode.	P.2
Load Bearing Trip Function		

RTD . **LB Alarm**	[Protection Para / RTD / LB Group]	
80°C	0°C ... 200°C	P.2
Load Bearing Threshold for Temperature Alarm		

RTD . **LB t-Alarm-Delay**	[Protection Para / RTD / LB Group]	
1min	0min ... 360min	P.2
Load Bearing After this time has expired a Temperature Alarm is issued.		

RTD . **LB Trip**	[Protection Para / RTD / LB Group]	
80°C	0°C ... 200°C	P.2
Load Bearing Threshold for Temperature Trip		

RTD . **Aux Alarm Function**	[Protection Para / RTD / Aux Group]	
Inactive	Inactive, Active ↳ Mode.	P.2
Auxiliary Alarm Function		

RTD . **Aux Trip Function**	[Protection Para / RTD / Aux Group]	
Inactive	Inactive, Active ↳ Mode.	P.2
Auxiliary Trip Function		

RTD . **Aux Alarm**	[Protection Para / RTD / Aux Group]	
80°C	0°C ... 200°C	P.2
Auxiliary Threshold for Temperature Alarm		

RTD . **Aux t-Alarm-Delay**	[Protection Para / RTD / Aux Group]	
1min	0min ... 360min	P.2
Auxiliary After this time has expired a Temperature Alarm is issued.		

RTD . **Aux Trip**	[Protection Para / RTD / Aux Group]	
100°C	0°C ... 200°C	P.2
Auxiliary Threshold for Temperature Trip		

8.14.2 RTD: Signals (Output States)

RTD . **Active**	[Operation / Status Display / All Actives] [Operation / Status Display / Temp-Prot / RTD / General]
	Signal: Active

RTD . **Alarm**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / Temp-Prot / RTD / General]
	Alarm RTD Temperature Protection

RTD . **Alarm WD Group**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / Temp-Prot / RTD / WD Group]
	Alarm all Windings

RTD . **TimeoutAlmWDGrp**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / Temp-Prot / RTD / WD Group]
	Timeout Alarm all Windings

RTD . **Alarm MB Group**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / Temp-Prot / RTD / MB Group]
	Alarm all Motor Bearings

RTD . **TimeoutAlmMBGrp**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / Temp-Prot / RTD / MB Group]
	Timeout Alarm all Motor Bearings

RTD . **Alarm LB Group**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / Temp-Prot / RTD / LB Group]
	Alarm all Load Bearings

RTD . **TimeoutAlmLBGrp**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / Temp-Prot / RTD / LB Group]
⇧	*Timeout Alarm all Load Bearings*

RTD . **Alarm Aux Group**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / Temp-Prot / RTD / Aux Group]
⇧	*Alarm Auxiliary Group*

RTD . **TimeoutAlmAuxGrp**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / Temp-Prot / RTD / Aux Group]
⇧	*Timeout Alarm Auxiliary Group*

RTD . **Trip**	[Operation / Status Display / Trips] [Operation / Status Display / Temp-Prot / RTD / General]
⇧	*Signal: Trip*

RTD . **Timeout Alarm**	[Operation / Status Display / Temp-Prot / RTD / General]
⇧	*Alarm timeout expired*

RTD . **Trip WD Group**	[Operation / Status Display / Temp-Prot / RTD / WD Group]
⇧	*Trip all Windings*

RTD . **WD Group Invalid**	[Operation / Status Display / Temp-Prot / RTD / WD Group]
⇧	*Winding Group Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*

RTD . **Trip MB Group**	[Operation / Status Display / Temp-Prot / RTD / MB Group]
⇧	*Trip all Motor Bearings*

RTD . **MB Group Invalid**	[Operation / Status Display / Temp-Prot / RTD / MB Group]
⇧	*Motor Bearing Group Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*

RTD . **Trip LB Group**	[Operation / Status Display / Temp-Prot / RTD / LB Group]
⇧	*Trip all Load Bearings*

RTD . **LB Group Invalid**	[Operation / Status Display / Temp-Prot / RTD / LB Group]
⇧	*Load Bearing Group Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*

RTD . **Trip Aux Group**	[Operation / Status Display / Temp-Prot / RTD / Aux Group]
⇧	*Trip Auxiliary Group*

RTD . **AuxGrpInvalid**	[Operation / Status Display / Temp-Prot / RTD / Aux Group]
⇧	*Invalid Auxiliary Group*

RTD . **Trip Any Group**	[Operation / Status Display / Temp-Prot / RTD / Any Group]
⇧	*Trip Any Group*

RTD . **Alarm Any Group**	[Operation / Status Display / Temp-Prot / RTD / Any Group]
⇧	*Alarm Any Group*

RTD . **TimeoutAlmAnyGrp**	[Operation / Status Display / Temp-Prot / RTD / Any Group]
⇧	*Timeout Alarm Any Group*

8.14.3 RTD: Values And Counters

RTD . **Hottest WD**	[Operation / Measured Values / URTD]
#	*The actual value for the hottest winding temperature.*

RTD . **Hottest MB**	[Operation / Measured Values / URTD]
#	*The actual value for the hottest motor bearing temperature.*

RTD . **Hottest LB**	[Operation / Measured Values / URTD]
#	*The actual value for the hottest load bearing temperature.*

RTD . **Hottest Aux**	[Operation / Measured Values / URTD]
#	*The actual value for the hottest Auxiliary temperature.*

RTD . **HighestWdTemp**	[Operation / History / OperationsCr]
#	*Highest motor winding temperature since the last reset. Resettable via »Sys . Res OperationsCr« oder »Sys . Res All«.*

RTD . **HighestMbTemp**	[Operation / History / OperationsCr]
#	*Highest motor bearing temperature since the last reset. Resettable via »Sys . Res OperationsCr« oder »Sys . Res All«.*

RTD . **HighestLbTemp**	[Operation / History / OperationsCr]
#	*Highest load bearing temperature since the last reset. Resettable via »Sys . Res OperationsCr« oder »Sys . Res All«.*

RTD . **HighestAuxTemp**	[Operation / History / OperationsCr]
#	*Highest Auxiliary temperature since the last reset. Resettable via »Sys . Res OperationsCr« oder »Sys . Res All«.*

RTD . **nWdAlarms**	[Operation / History / PickupCr]
#	*Number of winding temperature alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

RTD . **nMbAlarms**	[Operation / History / PickupCr]
#	*Number of motor bearing temperature alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

RTD . **nLbAlarms**	[Operation / History / PickupCr]
#	*Number of load bearing temperature alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

RTD . **nAuxAlarms**	[Operation / History / PickupCr]
#	*Number of auxiliary temperature alarms since last reset. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

RTD . **nChannelFails**	[Operation / History / PickupCr]
#	*Number of RTD channel failures. Resettable with »Sys . Res AlarmCr« or »Sys . Res All«.*

RTD . **nWdTrips**	[Operation / History / TripCr]
#	*Number of winding temperature trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

RTD . **nMbTrips**	[Operation / History / TripCr]
#	*Number of motor bearing temperature trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

RTD . **nLbTrips**	[Operation / History / TripCr]
#	*Number of load bearing temperature trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

RTD . **nAuxTrips**	[Operation / History / TripCr]
#	*Number of auxiliary temperature trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

8.15 Trip Bypass – Module Trip Bypass

8.15.1 Trip Bypass: Settings

Trip Bypass . **Function**	[Protection Para / Trip Bypass]	
Inactive	Inactive, Active ↳ Mode.	P.2
Permanent activation or deactivation of module/element.		

8.15.2 Trip Bypass: Signals (Output States)

Trip Bypass . **Active**	[Operation / Status Display / All Actives] [Operation / Status Display / Trip Bypass]
Signal: Active	

Trip Bypass . **Trip**	[Operation / Status Display / Pickups, Alarms] [Operation / Status Display / Trip Bypass]
Signal: Breaker Failure Trip	

Trip Bypass . **Waiting for Trigger**	[Operation / Status Display / Trip Bypass]
Waiting for Trigger	

Trip Bypass . **Pickup**	[Operation / Status Display / Trip Bypass]
Signal: BF-Module Started (Pickup)	

9 Records

9.1 Event rec – The event recorder logs all events like switching operations, change of parameters, pickups, trips, operating mode selections, blockings, and state transitions of inputs and outputs.

Event rec	[Operation / Recorders / Event rec]
	This item represents a special dialog. (See the Technical Manual for details.) *The event recorder logs all events like switching operations, change of parameters, pickups, trips, operating mode selections, blockings, and state transitions of inputs and outputs.*

9.1.1 Event rec: Direct Controls

Event rec . **Res all rec**	[Operation / Reset / Flags]	
Inactive	Inactive, Active Mode.	P.1
	Reset all records	

9.1.2 Event rec: Signals (Output States)

Event rec . **Res all records**	[Operation / Status Display / Recorders / Event rec]
	Signal: All records are being deleted. (Remark: Immediately afterwards, this signal becomes inactive again.)

9.2 Waveform rec – After a trigger event has become true, the waveform recorder writes analog and digital tracks

Waveform rec	[Operation / Recorders / Waveform rec]
This item represents a special dialog. (See the Technical Manual for details.) *After a trigger event has become true, the waveform recorder writes analog and digital tracks*	

9.2.1 Waveform rec: Settings

Waveform rec . **Start: 1**	[Device Para / Recorders / Waveform rec]	
Prot . Trip	"-" ... Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Start recording if the assigned signal is true.		

Waveform rec . **Start: 2** ... Waveform rec . **Start: 8**	[Device Para / Recorders / Waveform rec]	
"-"	"-" ... Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Start recording if the assigned signal is true.		

Waveform rec . **Auto overwriting**	[Device Para / Recorders / Waveform rec]	
Active	Inactive, Active ↳ Mode.	S.3
If there is no more free memory capacity left, the oldest file will be overwritten.		

Waveform rec . **Pre-trigger time**	[Device Para / Recorders / Waveform rec]	
20%	0% ... 99%	S.3
The pre trigger time is set in percent of the »Max file size« value. It corresponds to the part of recording before the onset of the trigger event.		

Waveform rec . **Post-trigger time**	[Device Para / Recorders / Waveform rec]	
20%	0% ... 99%	S.3
The post trigger time is set in percent of the »Max file size« value. It is the remaining time of the »Max file size«, depending on the »Pre-trigger time« setting and the duration of the trigger event, but at maximum the »Post-trigger time« set here.		

Waveform rec . **Max file size**	[Device Para / Recorders / Waveform rec]	
2s	0.1s ... 15.0s	S.3
The maximum storage capacity per record, including pre-trigger and post-trigger time. The amount of records depends on the size of each record, on the max. file size (set here), and on the total storage capacity.		

9.2.2 Waveform rec: Direct Controls

Waveform rec . **Man. Trigger**	[Operation / Recorders / Man. Trigger]	
False	False, True ↳ True or Not True.	P.1
Manual Trigger		

Waveform rec . **Res all rec**	[Operation / Reset / Flags]	
Inactive	Inactive, Active ↳ Mode.	P.1
Reset all records		

9.2.3 Waveform rec: Input States

Waveform rec . **Start1-I** ... Waveform rec . **Start8-I**	[Operation / Status Display / Recorders / Waveform rec]
State of the module input:: Trigger event / start recording	

9.2.4 Waveform rec: Signals (Output States)

Waveform rec . **Recording**	[Operation / Status Display / Recorders / Waveform rec]
⇧	*Signal: Recording*

Waveform rec . **Memory full**	[Operation / Status Display / Recorders / Waveform rec]
⇧	*Signal: Memory Full*

Waveform rec . **Clear fail**	[Operation / Status Display / Recorders / Waveform rec]
⇧	*Signal: Clear Failure in Memory*

Waveform rec . **Res all records**	[Operation / Status Display / Recorders / Waveform rec]
⇧	*Signal: All records are being deleted. (Remark: Immediately afterwards, this signal becomes inactive again.)*

Waveform rec . **Res record**	[Operation / Status Display / Recorders / Waveform rec]
⇧	*Signal: Delete record*

Waveform rec . **Man. Trigger**	[Operation / Status Display / Recorders / Waveform rec]
⇧	*Signal: Manual Trigger*

9.2.5 Waveform rec: Values

Waveform rec . **Rec state**	[Operation / Status Display / Recorders / Waveform rec]	
Ready	Ready, Recording, Writing file, Trigger Blo ↳ Rec state.	
⇘	*Recording state*	

Waveform rec . **Error code**	[Operation / Status Display / Recorders / Waveform rec]	
OK	OK, Write err, Clear fail, Calculation err, File not found, Auto overwriting off ↳ Fault.	
✎	*Error code*	

9.3 Fault rec – The values measured at the time of tripping are saved by the Fault Recorder.

Fault rec	[Operation / Recorders / Fault rec]
This item represents a special dialog. (See the Technical Manual for details.) *The values measured at the time of tripping are saved by the Fault Recorder.*	

9.3.1 Fault rec: Settings

Fault rec . **Record-Mode**	[Device Para / Recorders / Fault rec]	
Trips only	Pickups and Trips, Trips only ↳ Record-Mode.	S.3
Recorder Mode (Set the behaviour of the recorder)		

Fault rec . **t-meas-delay**	[Device Para / Recorders / Fault rec]	
0ms	0ms . . . 60ms	S.3
After the Trip, the measurement will be delayed for this time.		

9.3.2 Fault rec: Direct Controls

Fault rec . **Res all rec**	[Operation / Reset / Flags]	
Inactive	Inactive, Active ↳ Mode.	P.1
Reset all records		

9.3.3 Fault rec: Signals (Output States)

Fault rec . **Res record**	[Operation / Status Display / Recorders / Fault rec]
Signal: Delete record	

9.4 Trend rec – Trend Recorder

Trend rec	[Operation / Recorders / Trend rec]
	This item represents a special dialog. (See the Technical Manual for details.) *Trend Recorder*

9.4.1 Trend rec: Settings

Trend rec . **Resolution**	[Device Para / Recorders / Trend rec]	
15 min	60 min, 30 min, 15 min, 10 min, 5 min ↳ Resolution.	S.3
	Resolution (recording frequency)	

Trend rec . **Observed Value1**	[Device Para / Recorders / Trend rec]	
CT . IA RMS	"-" . . . RTD . Hottest Aux ↳ 1..n, TrendRecList.	S.3
	Observed Value1	

Trend rec . **Observed Value2**	[Device Para / Recorders / Trend rec]	
CT . IB RMS	"-" . . . RTD . Hottest Aux ↳ 1..n, TrendRecList.	S.3
	Observed Value2	

Trend rec . **Observed Value3**	[Device Para / Recorders / Trend rec]	
CT . IC RMS	"-" . . . RTD . Hottest Aux ↳ 1..n, TrendRecList.	S.3
	Observed Value3	

Trend rec . **Observed Value4**	[Device Para / Recorders / Trend rec]	
CT . IX meas RMS	“-” . . . RTD . Hottest Aux ↳ 1..n, TrendRecList.	S.3
Observed Value4		

Trend rec . **Observed Value5**	[Device Para / Recorders / Trend rec]	
CT . %(I2/I1)	“-” . . . RTD . Hottest Aux ↳ 1..n, TrendRecList.	S.3
Observed Value5		

Trend rec . **Observed Value6**	[Device Para / Recorders / Trend rec]	
49 . I2T Used	“-” . . . RTD . Hottest Aux ↳ 1..n, TrendRecList.	S.3
Observed Value6		

Trend rec . **Observed Value7**	[Device Para / Recorders / Trend rec]	
RTD . Hottest WD	“-” . . . RTD . Hottest Aux ↳ 1..n, TrendRecList.	S.3
Observed Value7		

Trend rec . **Observed Value8**	[Device Para / Recorders / Trend rec]	
RTD . Hottest MB	“-” . . . RTD . Hottest Aux ↳ 1..n, TrendRecList.	S.3
Observed Value8		

Trend rec . **Observed Value9**	[Device Para / Recorders / Trend rec]	
RTD . Hottest LB	“-” . . . RTD . Hottest Aux ↳ 1..n, TrendRecList.	S.3
Observed Value9		

Trend rec . **Observed Value10**	[Device Para / Recorders / Trend rec]	
RTD . Hottest Aux	“-” . . . RTD . Hottest Aux ↳ 1..n, TrendRecList.	S.3
Observed Value10		

9.4.2 Trend rec: Direct Controls

Trend rec . **Res all rec**	[Operation / Reset / Flags]	
Inactive	Inactive, Active ↳ Mode.	P.1
Reset all records		

9.4.3 Trend rec: Signals (Output States)

Trend rec . **Res all records**	[Operation / Status Display / Recorders / Trend rec]
Signal: All records are being deleted. (Remark: Immediately afterwards, this signal becomes inactive again.)	

9.4.4 Trend rec: Counters

Trend rec . **Max avail Entries**	[Operation / Count and RevData / Trend rec]
Maximum available entries in the current configuration	

9.5 Start rec – Startrecorder

Start rec	[Operation / Recorders / Start rec]
This item represents a special dialog. (See the Technical Manual for details.) *Startrecorder*	

Statistic rec	[Operation / Recorders / Statistic rec]
This item represents a special dialog. (See the Technical Manual for details.) *Statistic recorder*	

9.5.1 Start rec: Settings

Start rec . **Resolution**	[Device Para / Recorders / Start rec]	
50ms	50ms, 100ms, 1s ↳ Resolution.	S.3
Resolution (recording frequency)		

9.5.2 Start rec: Direct Controls

Start rec . **Res StartRec**	[Operation / Reset / Flags]	
Inactive	Inactive, Active ↳ Mode.	S.3
Delete all start recorder records		

Start rec . **Res StatisticRec**	[Operation / Reset / Flags]	
Inactive	Inactive, Active ↳ Mode.	S.3
Delete all statistic recorder records (start trending)		

9.5.3 Start rec: Signals (Output States)

Start rec . **Storing**	[Operation / Status Display / Recorders / Start rec]
⇧	*Signal: Data are saved*

10 Logic

10.1 Logic

10.1.1 Logic: Device Planning Parameters

Logic . **No of Equations:**	[Device Planning]	
0	0, 5, 10, 20, 40, 80 ↳ No of Equations:.	S.3
	Number of required Logic Equations:	

10.1.2 Logic ... Logic

10.1.2.1 Logic: Settings

Logic . **LE1.Gate**	[Logic / LE 1]	
AND	AND, OR, NAND, NOR ↳ LE1.Gate.	S.3
Logic gate		

Logic . **LE1.IN1** **...** Logic . **LE1.IN4**	[Logic / LE 1]	
"-"	"-" ... Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Assignment of the Input Signal		

Logic . **LE1.Inverting1** **...** Logic . **LE1.Inverting4**	[Logic / LE 1]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting the input signals.		

Logic . **LE1.t-On Delay**	[Logic / LE 1]	
0.00s	0.00s ... 36000.00s	S.3
Switch On Delay		

Logic . **LE1.t-Off Delay**	[Logic / LE 1]	
0.00s	0.00s ... 36000.00s	S.3
Switch Off Delay		

Logic . **LE1.Reset Latched**	[Logic / LE 1]	
"-"	"-" . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Reset Signal for the Latching		

Logic . **LE1.Inverting Reset**	[Logic / LE 1]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting Reset Signal for the Latching		

Logic . **LE1.Inverting Set**	[Logic / LE 1]	
Inactive	Inactive, Active ↳ Mode.	S.3
Inverting the Setting Signal for the Latching		

10.1.2.2 Logic: Input States

Logic . **LE1.Gate In1-I** **. . .** Logic . **LE1.Gate In4-I**	[Operation / Status Display / Logic]
State of the module input: Assignment of the Input Signal	

Logic . **LE1.Reset Latch-I**	[Operation / Status Display / Logic]
State of the module input: Reset Signal for the Latching	

10.1.2.3 Logic: Signals (Output States)

Logic . **LE1.Gate Out**	[Operation / Status Display / Logic]
Signal: Output of the logic gate	

Logic . **LE1.Timer Out**	[Operation / Status Display / Logic]
⇧	*Signal: Timer Output*

Logic . **LE1.Out**	[Operation / Status Display / Logic]
⇧	*Signal: Latched Output (Q)*

Logic . **LE1.Out inverted**	[Operation / Status Display / Logic]
⇧	*Signal: Negated Latched Output (Q NOT)*

11 Self-Supervision

Messages	[Operation / Self-Supervision / Messages]
	This item represents a special dialog. (See the Technical Manual for details.) *Internal messages*

11.1 SSV: Direct Controls

SSV . **Ack System LED**	[Operation / Reset / Flags]	
False	False, True ↳ True or Not True.	P.1
	Ack System LED (red/green flashing LED)	

11.2 SSV: Signals (Output States)

SSV . **System Error**	[Operation / Self-Supervision / System State]
	Signal: Device Failure

SSV . **SelfSuperVision Contact**	[Operation / Self-Supervision / System State]
	Signal: SelfSuperVision Contact

11.3 SSV: Counters

SSV . **Cr No of free sockets**	[Operation / Self-Supervision / System State]
	Counter for network diagnosis. Number of free sockets.

12 Service

- Sys . Reboot: ⮡ Table

12.1 Sgen – Sine wave generator

12.1.1 Sgen: Device Planning Parameters

Sgen . **Mode**	[Device Planning]	
“-”	“-”, Use ↳ Mode.	S.3
General Operation Mode		

12.1.2 Sgen: Settings

Sgen . **Ex Start Simulation**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Process]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
External Start of Fault Simulation (Using the test parameters)		

Sgen . **ExBlo1**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Process]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.1		

Sgen . **ExBlo2**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Process]	
“-”	“-” . . . Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
External blocking of the module, if blocking is activated (allowed) within a parameter set and if the state of the assigned signal is true.2		

Sgen . **Ex ForcePost**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Process]	
“-”	“-” ... Sys . Ack Comm-HMI ↳ 1..n, Assignment List.	S.3
Force Post state. Abort simulation.		

Sgen . **PreFault**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / Times]	
0.0s	0.00s ... 300.00s	S.3
Pre Fault Duration		

Sgen . **FaultSimulation**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / Times]	
0.0s	0.00s ... 10800.00s	S.3
Duration of Fault Simulation		

Sgen . **PostFault**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / Times]	
0.0s	0.00s ... 300.00s	S.3
Post Fault Duration		

12.1.3 Sgen: Direct Controls

Sgen . **Start Simulation**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Process]	
Inactive	Inactive, Active ↳ Mode.	S.3
Start Fault Simulation (Using the test parameters)		

Sgen . **Stop Simulation**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Process]	
Inactive	Inactive, Active ↳ Mode.	S.3
◉	*Stop Fault Simulation (Using the test parameters)*	

12.1.4 Sgen: Input States

Sgen . **Ex Start Simulation-I**	[Operation / Status Display / Sgen]
⇩	*State of the module input:External Start of Fault Simulation (Using the test parameters)*

Sgen . **ExBlo1-I**	[Operation / Status Display / Sgen] [Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / State]
⇩	*Module Input State: External Blocking1*

Sgen . **ExBlo2-I**	[Operation / Status Display / Sgen] [Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / State]
⇩	*Module Input State: External Blocking2*

Sgen . **Ex ForcePost-I**	[Operation / Status Display / Sgen] [Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / State]
⇩	*State of the module input:Force Post state. Abort simulation.*

12.1.5 Sgen: Signals (Output States)

Sgen . **Manual Start**	[Operation / Status Display / Sgen]
⇧	*Fault Simulation has been started manually.*

Sgen . **Manual Stop**	[Operation / Status Display / Sgen]
⇧	*Fault Simulation has been stopped manually.*

Sgen . **Running**	[Operation / Status Display / Sgen] [Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / State]
⇧	*Signal: Measuring value simulation is running*

Sgen . **Started**	[Operation / Status Display / Sgen]
⇧	*Fault Simulation has been started*

Sgen . **Stopped**	[Operation / Status Display / Sgen]
⇧	*Fault Simulation has been stopped*

Sgen . **State**	[Operation / Status Display / Sgen]
⇧	*Signal: Wave generation states: 0=Off, 1=PreFault, 2=Fault, 3=PostFault, 4=InitReset*

12.1.6 Sgen: Values

Sgen . **State**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / State]	
Off	Off, PreFault, FaultSimulation, PostFault, Init Res ↳ State.	
⇗	*Wave generation states: 0=Off, 1=PreFault, 2=Fault, 3=PostFault, 4=InitReset*	

12.1.7 Sgen – Sine wave generator

12.1.7.1 Sgen: Settings

Sgen . **IA Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / PreFault / CT]	
0.0In	0.00In ... 40.00In	S.3
Current Fundamental Magnitude in Pre State: Phase A		

Sgen . **IB Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / PreFault / CT]	
0.0In	0.00In ... 40.00In	S.3
Current Fundamental Magnitude in Pre State: Phase B		

Sgen . **IC Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / PreFault / CT]	
0.0In	0.00In ... 40.00In	S.3
Current Fundamental Magnitude in Pre State: Phase C		

Sgen . **IX meas Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / PreFault / CT]	
0.0In	If: Slot 3 = Current Measuring Inputs2 • 0.00In ... 2.500In If: Slot 3 ≠ Current Measuring Inputs2 • 0.00In ... 25.00In	S.3
Current Fundamental Magnitude in Pre State: IX		

Sgen . **Angle IA Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / PreFault / CT]	
0°	-360° ... 360°	S.3
Start Position respectively Start Angle of the Current Phasor during Pre Phase:Phase A		

Sgen . **Angle IB Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / PreFault / CT]	
240°	-360° ... 360°	S.3
Start Position respectively Start Angle of the Current Phasor during Pre Phase:Phase B		

Sgen . **Angle IC Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / PreFault / CT]	
120°	-360° ... 360°	S.3
Start Position respectively Start Angle of the Current Phasor during Pre Phase:Phase C		

Sgen . **Angle IX meas Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / PreFault / CT]	
0°	-360° ... 360°	S.3
Start Position respectively Start Angle of the Current Phasor during Pre Phase: IX		

Sgen . **IA Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / FaultSimulation / CT]	
0.0In	0.00In ... 40.00In	S.3
Current Fundamental Magnitude in Fault State: Phase A		

Sgen . **IB Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / FaultSimulation / CT]	
0.0In	0.00In ... 40.00In	S.3
Current Fundamental Magnitude in Fault State: Phase B		

Sgen . **IC Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / FaultSimulation / CT]	
0.0In	0.00In ... 40.00In	S.3
Current Fundamental Magnitude in Fault State: Phase C		

Sgen . **IX meas Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / FaultSimulation / CT]	
0.0In	If: Slot 3 = Current Measuring Inputs2 • 0.00In ... 2.500In If: Slot 3 ≠ Current Measuring Inputs2 • 0.00In ... 25.00In	S.3
Current Fundamental Magnitude in Fault State: IX		

Sgen . **Angle IA Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / FaultSimulation / CT]	
0°	-360° ... 360°	S.3
Start Position respectively Start Angle of the Current Phasor during Fault Phase:Phase A		

Sgen . **Angle IB Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / FaultSimulation / CT]	
240°	-360° ... 360°	S.3
Start Position respectively Start Angle of the Current Phasor during Fault Phase:Phase B		

Sgen . **Angle IC Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / FaultSimulation / CT]	
120°	-360° ... 360°	S.3
Start Position respectively Start Angle of the Current Phasor during Fault Phase:Phase C		

Sgen . **Angle IX meas Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / FaultSimulation / CT]	
0°	-360° ... 360°	S.3
Start Position respectively Start Angle of the Current Phasor during Fault Phase: IX		

Sgen . **IA Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / PostFault / CT]	
0.0In	0.00In ... 40.00In	S.3
Current Fundamental Magnitude during Post phase: Phase A		

Sgen . **IB Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / PostFault / CT]	
0.0In	0.00In ... 40.00In	S.3
Current Fundamental Magnitude during Post phase: Phase B		

Sgen . **IC Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / PostFault / CT]	
0.0In	0.00In ... 40.00In	S.3
Current Fundamental Magnitude during Post phase: Phase C		

Sgen . **IX meas Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / PostFault / CT]	
0.0In	If: Slot 3 = Current Measuring Inputs2 • 0.00In ... 2.500In If: Slot 3 ≠ Current Measuring Inputs2 • 0.00In ... 25.00In	S.3
Current Fundamental Magnitude during Post phase: IX		

Sgen . **Angle IA Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / PostFault / CT]	
0°	-360° ... 360°	S.3
Start Position respectively Start Angle of the Current Phasor during Post phase: Phase A		

Sgen . **Angle IB Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / PostFault / CT]	
240°	-360° ... 360°	S.3
Start Position respectively Start Angle of the Current Phasor during Post phase: Phase B		

Sgen . **Angle IC Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / PostFault / CT]	
120°	-360° ... 360°	S.3
Start Position respectively Start Angle of the Current Phasor during Post phase: Phase C		

Sgen . **Angle IX meas Fund.**	[Service / Test Mode (Prot inhibit) / WARNING! Cont? / Sgen / Configuration / PostFault / CT]	
0°	-360° ... 360°	S.3
Start Position respectively Start Angle of the Current Phasor during Post phase: IX		

13 Selection Lists

Scaling

Display of the measured values as primary, secondary, or per unit values

Selection list referenced by parameters:

- ⮡ Sys . Scaling

Scaling	Description
Per unit values	*Per unit values*
Primary values	*Primary values*
Secondary values	*Secondary values*

Rec state

Recording state

Selection list referenced by parameters:

- ⮡ Waveform rec . Rec state

Rec state	Description
Ready	*Ready*
Recording	*Recording*
Writing file	*Signal: Writing file*
Trigger Blo	*Trigger signal is still active - wait for dropout. A new record can only be started if and only the trigger signal that started the previous record has fallen back once. Therewith endless records are prevented.*

Fault

Selection list referenced by parameters:

- ⮡ Waveform rec . Error code

Fault	Description
OK	*OK*
Write err	*Signal: Writing Error in Memory*
Clear fail	*Signal: Clear Failure in Memory*
Calculation err	*Calculation error*
File not found	*File not found*
Auto overwriting off	*If there is no more memory available the record is being stopped.*

State

Selection list referenced by parameters:

- ⮡ IEC 61850 . GoosePublisherState
- ⮡ IEC 61850 . GooseSubscriberState
- ⮡ IEC 61850 . MmsServerState

State	Description
Off	*Off*
On	*On*
Error	*Error*

State

Selection list referenced by parameters:

- ⮡ Profibus . Slave State

State	Description
Baud Search	*No connection to the PROFIBUS-DP Master*
Baud Found	*The PROFIBUS DP Slave is connected to the bus. The slave has not yet been addressed by the master device (and it was not yet addressed since the last break of the connection).*

State	Description
PRM OK	*The slave was addressed by the master, the parameter setting message was received and is OK, a configuration message is expected from the master.*
PRM REQ	*The slave is no longer addressed by the master (modified parameters within the master without having the connection stopped, master software is tuned off but lower PROFIBUS layer is still active).*
PRM Fault	*An error in the parameter setting message (e.g.: wrong PNO identification number)*
CFG Fault	*Configuration error the number of input/output bytes parameterized in the master does not match the number parametrized in the device (slave).*
Clear Data	*Master sends a General Control command to clear the data.*
Data exchange	*Master and slave exchange data.*

Baud rate

Selection list referenced by parameters:

- ↳ Profibus . Baud rate

Baud rate	Description
12 Mb/s	*12 Mb/s*
6 Mb/s	*6 Mb/s*
3 Mb/s	*3 Mb/s*
1.5 Mb/s	*1.5 Mb/s*
0.5 Mb/s	*0.5 Mb/s*
187500 baud	*187500 baud*
93750 baud	*93750 baud*
45450 baud	*45450 baud*
19200 baud	*19200 baud*
9600 baud	*9600 baud*
-.-	*-.-*

PNO Id

PNO Identification Number. GSD Identification Number.

Selection list referenced by parameters:

- ⮡ Profibus . PNO Id

PNO Id	Description
0C50h	*PnodID for the Config file.*

Server State

Server State.

Selection list referenced by parameters:

- ⮡ SNTP . Used Server

Server State	Description
Server1	*Server1 used.*
Server2	*Server2 used.*
None	*No Server used.*

State

Selection list referenced by parameters:

- ⮡ SNTP . ServerQlty
- ⮡ SNTP . NetConn

State	Description
GOOD	*GOOD*
SUFFICIENT	*SUFFICIENT*
BAD	*BAD*
“-”	*NO CONNECTION*

Mode

General Operation Mode

Selection list referenced by parameters:

- ⮡ RO-3AI X2 . Latched
- ⮡ RO-3AI X2 . Latched
- ⮡ RO-3AI X2 . Latched
- ⮡ LEDs . Inverting 1
- ⮡ LEDs . Inverting 2
- ⮡ LEDs . Inverting 3
- *[. . .]*

Mode	Description
Inactive	*Inactive*
Active	*Active*

True or Not True

Selection list referenced by parameters:

- ⮡ Waveform rec . Man. Trigger
- ⮡ SSV . Ack System LED

True or Not True	Description
False	*False*
True	*True*

Phase Sequence

Selection list referenced by parameters:

- ⮡ System Para . Phase Sequence

Phase Sequence	Description
ABC	*Rotating clockwise*
ACB	*Counter-clockwise phase sequence. Positive and negative phase sequence are exchanged and MTA is turned for 180°.*

fN

Selection list referenced by parameters:

- ⮡ System Para . f

fN	Description
50	*Rated frequency*
60	*Rated frequency*

Ratio prim/sec

Selection list referenced by parameters:

- ⮡ CT . CT sec
- ⮡ CT . XCT sec

Ratio prim/sec	Description
1	*Rated value of the secondary side of the current transformers.*
5	*Rated value of the secondary side of the current transformers.*

Polarity

Selection list referenced by parameters:

- ⮡ CT . CT dir
- ⮡ CT . XCT dir

Polarity	Description
0	*0*
180	*180 degree polarity correction (wiring faults)*

Active/Inactive

Selection list referenced by parameters:

- ⮡ RO-3AI X2 . DISARMED Ctrl
- ⮡ MStart . Reversing

Active/Inactive	Description
Inactive	*Inactive*
Active	*Active*

Selection list referenced by parameters:

- ⮡ Sys . Program Mode

	Description
Either Motor Stopped or Running	*Either Motor Stopped or Running*
Motor Stop	*Motor Stopped*

Motor Stop

Motor Stopped

Motor Stop	Description
MStart . **Stop**	*Signal: Motor is in stop mode*

Units

Units for the measurement

Selection list referenced by parameters:

- ⮡ URTD . Temperature Unit

Units	Description
Celsius	*Celsius*
Fahrenheit	*Fahrenheit*

1..n, TRN List

Motor operation mode transition criteria options

Selection list referenced by parameters:

- ⮡ MStart . TRN Criteria

1..n, TRN List	Description
TRN I	*Transition on current only*
TRN TIME	*Transition on time only*
TRN T and I	*Transition on current AND time*
TRN T or I	*Transition on current OR time*

1..n, InSq List

Incomplete sequence report starting options

Selection list referenced by parameters:

- ⮡ MStart . INSQReportFrom

1..n, InSq List	Description
Inactive	*Inactive*
InSq Start2Run	*INSQ reporting from start-to-run*
InSq Stop2Start	*INSQ reporting from stop-to-start*

1..n, ZSS List

Zero speed switch trip function

Selection list referenced by parameters:

- ⮡ MStart . ZSS

1..n, ZSS List	Description
Inactive	*Inactive*
Active	*Active*

EmgOvr List

Emergency override options

Selection list referenced by parameters:

- ⮡ MStart . EmgOvr

EmgOvr List	Description
Inactive	*Inactive*
DI	*Enable emergency override from digital input DI*
UI	*Enable emergency override from front panel*
DI or UI	*Enable emergency override from digital (DI) input or front panel (UI)*

1..n, DI-LogicList

Selection list referenced by parameters:

- ⮡ LEDs . Ack signal
- ⮡ LEDs . Ack signal
- ⮡ LEDs . Ack signal
- ⮡ LEDs . Ack signal

- ⮡ LEDs . Ack signal
- ⮡ LEDs . Ack signal
- *[. . .]*

1..n, DI-LogicList	Description
“-”	*No assignment*
DI Slot X1 . **DI 1**	*Signal: Digital Input*
DI Slot X1 . **DI 2**	*Signal: Digital Input*
DI Slot X1 . **DI 3**	*Signal: Digital Input*
DI Slot X1 . **DI 4**	*Signal: Digital Input*
Logic . **LE1.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE1.Timer Out**	*Signal: Timer Output*
Logic . **LE1.Out**	*Signal: Latched Output (Q)*
Logic . **LE1.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE2.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE2.Timer Out**	*Signal: Timer Output*
Logic . **LE2.Out**	*Signal: Latched Output (Q)*
Logic . **LE2.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE3.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE3.Timer Out**	*Signal: Timer Output*
Logic . **LE3.Out**	*Signal: Latched Output (Q)*
Logic . **LE3.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE4.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE4.Timer Out**	*Signal: Timer Output*
Logic . **LE4.Out**	*Signal: Latched Output (Q)*
Logic . **LE4.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE5.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE5.Timer Out**	*Signal: Timer Output*
Logic . **LE5.Out**	*Signal: Latched Output (Q)*

1..n, DI-LogicList	Description
Logic . **LE5.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE6.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE6.Timer Out**	*Signal: Timer Output*
Logic . **LE6.Out**	*Signal: Latched Output (Q)*
Logic . **LE6.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE7.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE7.Timer Out**	*Signal: Timer Output*
Logic . **LE7.Out**	*Signal: Latched Output (Q)*
Logic . **LE7.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE8.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE8.Timer Out**	*Signal: Timer Output*
Logic . **LE8.Out**	*Signal: Latched Output (Q)*
Logic . **LE8.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE9.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE9.Timer Out**	*Signal: Timer Output*
Logic . **LE9.Out**	*Signal: Latched Output (Q)*
Logic . **LE9.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE10.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE10.Timer Out**	*Signal: Timer Output*
Logic . **LE10.Out**	*Signal: Latched Output (Q)*
Logic . **LE10.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE11.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE11.Timer Out**	*Signal: Timer Output*
Logic . **LE11.Out**	*Signal: Latched Output (Q)*
Logic . **LE11.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE12.Gate Out**	*Signal: Output of the logic gate*

1..n, DI-LogicList	Description
Logic . **LE12.Timer Out**	*Signal: Timer Output*
Logic . **LE12.Out**	*Signal: Latched Output (Q)*
Logic . **LE12.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE13.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE13.Timer Out**	*Signal: Timer Output*
Logic . **LE13.Out**	*Signal: Latched Output (Q)*
Logic . **LE13.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE14.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE14.Timer Out**	*Signal: Timer Output*
Logic . **LE14.Out**	*Signal: Latched Output (Q)*
Logic . **LE14.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE15.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE15.Timer Out**	*Signal: Timer Output*
Logic . **LE15.Out**	*Signal: Latched Output (Q)*
Logic . **LE15.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE16.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE16.Timer Out**	*Signal: Timer Output*
Logic . **LE16.Out**	*Signal: Latched Output (Q)*
Logic . **LE16.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE17.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE17.Timer Out**	*Signal: Timer Output*
Logic . **LE17.Out**	*Signal: Latched Output (Q)*
Logic . **LE17.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE18.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE18.Timer Out**	*Signal: Timer Output*
Logic . **LE18.Out**	*Signal: Latched Output (Q)*

1..n, DI-LogicList	Description
Logic . **LE18.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE19.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE19.Timer Out**	*Signal: Timer Output*
Logic . **LE19.Out**	*Signal: Latched Output (Q)*
Logic . **LE19.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE20.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE20.Timer Out**	*Signal: Timer Output*
Logic . **LE20.Out**	*Signal: Latched Output (Q)*
Logic . **LE20.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE21.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE21.Timer Out**	*Signal: Timer Output*
Logic . **LE21.Out**	*Signal: Latched Output (Q)*
Logic . **LE21.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE22.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE22.Timer Out**	*Signal: Timer Output*
Logic . **LE22.Out**	*Signal: Latched Output (Q)*
Logic . **LE22.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE23.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE23.Timer Out**	*Signal: Timer Output*
Logic . **LE23.Out**	*Signal: Latched Output (Q)*
Logic . **LE23.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE24.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE24.Timer Out**	*Signal: Timer Output*
Logic . **LE24.Out**	*Signal: Latched Output (Q)*
Logic . **LE24.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE25.Gate Out**	*Signal: Output of the logic gate*

1..n, DI-LogicList	Description
Logic . **LE25.Timer Out**	*Signal: Timer Output*
Logic . **LE25.Out**	*Signal: Latched Output (Q)*
Logic . **LE25.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE26.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE26.Timer Out**	*Signal: Timer Output*
Logic . **LE26.Out**	*Signal: Latched Output (Q)*
Logic . **LE26.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE27.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE27.Timer Out**	*Signal: Timer Output*
Logic . **LE27.Out**	*Signal: Latched Output (Q)*
Logic . **LE27.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE28.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE28.Timer Out**	*Signal: Timer Output*
Logic . **LE28.Out**	*Signal: Latched Output (Q)*
Logic . **LE28.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE29.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE29.Timer Out**	*Signal: Timer Output*
Logic . **LE29.Out**	*Signal: Latched Output (Q)*
Logic . **LE29.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE30.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE30.Timer Out**	*Signal: Timer Output*
Logic . **LE30.Out**	*Signal: Latched Output (Q)*
Logic . **LE30.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE31.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE31.Timer Out**	*Signal: Timer Output*
Logic . **LE31.Out**	*Signal: Latched Output (Q)*

1..n, DI-LogicList	Description
Logic . **LE31.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE32.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE32.Timer Out**	*Signal: Timer Output*
Logic . **LE32.Out**	*Signal: Latched Output (Q)*
Logic . **LE32.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE33.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE33.Timer Out**	*Signal: Timer Output*
Logic . **LE33.Out**	*Signal: Latched Output (Q)*
Logic . **LE33.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE34.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE34.Timer Out**	*Signal: Timer Output*
Logic . **LE34.Out**	*Signal: Latched Output (Q)*
Logic . **LE34.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE35.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE35.Timer Out**	*Signal: Timer Output*
Logic . **LE35.Out**	*Signal: Latched Output (Q)*
Logic . **LE35.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE36.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE36.Timer Out**	*Signal: Timer Output*
Logic . **LE36.Out**	*Signal: Latched Output (Q)*
Logic . **LE36.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE37.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE37.Timer Out**	*Signal: Timer Output*
Logic . **LE37.Out**	*Signal: Latched Output (Q)*
Logic . **LE37.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE38.Gate Out**	*Signal: Output of the logic gate*

1..n, DI-LogicList	Description
Logic . **LE38.Timer Out**	*Signal: Timer Output*
Logic . **LE38.Out**	*Signal: Latched Output (Q)*
Logic . **LE38.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE39.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE39.Timer Out**	*Signal: Timer Output*
Logic . **LE39.Out**	*Signal: Latched Output (Q)*
Logic . **LE39.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE40.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE40.Timer Out**	*Signal: Timer Output*
Logic . **LE40.Out**	*Signal: Latched Output (Q)*
Logic . **LE40.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE41.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE41.Timer Out**	*Signal: Timer Output*
Logic . **LE41.Out**	*Signal: Latched Output (Q)*
Logic . **LE41.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE42.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE42.Timer Out**	*Signal: Timer Output*
Logic . **LE42.Out**	*Signal: Latched Output (Q)*
Logic . **LE42.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE43.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE43.Timer Out**	*Signal: Timer Output*
Logic . **LE43.Out**	*Signal: Latched Output (Q)*
Logic . **LE43.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE44.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE44.Timer Out**	*Signal: Timer Output*
Logic . **LE44.Out**	*Signal: Latched Output (Q)*

1..n, DI-LogicList	Description
Logic . **LE44.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE45.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE45.Timer Out**	*Signal: Timer Output*
Logic . **LE45.Out**	*Signal: Latched Output (Q)*
Logic . **LE45.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE46.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE46.Timer Out**	*Signal: Timer Output*
Logic . **LE46.Out**	*Signal: Latched Output (Q)*
Logic . **LE46.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE47.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE47.Timer Out**	*Signal: Timer Output*
Logic . **LE47.Out**	*Signal: Latched Output (Q)*
Logic . **LE47.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE48.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE48.Timer Out**	*Signal: Timer Output*
Logic . **LE48.Out**	*Signal: Latched Output (Q)*
Logic . **LE48.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE49.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE49.Timer Out**	*Signal: Timer Output*
Logic . **LE49.Out**	*Signal: Latched Output (Q)*
Logic . **LE49.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE50.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE50.Timer Out**	*Signal: Timer Output*
Logic . **LE50.Out**	*Signal: Latched Output (Q)*
Logic . **LE50.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE51.Gate Out**	*Signal: Output of the logic gate*

1..n, DI-LogicList	Description
Logic . **LE51.Timer Out**	*Signal: Timer Output*
Logic . **LE51.Out**	*Signal: Latched Output (Q)*
Logic . **LE51.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE52.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE52.Timer Out**	*Signal: Timer Output*
Logic . **LE52.Out**	*Signal: Latched Output (Q)*
Logic . **LE52.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE53.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE53.Timer Out**	*Signal: Timer Output*
Logic . **LE53.Out**	*Signal: Latched Output (Q)*
Logic . **LE53.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE54.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE54.Timer Out**	*Signal: Timer Output*
Logic . **LE54.Out**	*Signal: Latched Output (Q)*
Logic . **LE54.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE55.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE55.Timer Out**	*Signal: Timer Output*
Logic . **LE55.Out**	*Signal: Latched Output (Q)*
Logic . **LE55.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE56.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE56.Timer Out**	*Signal: Timer Output*
Logic . **LE56.Out**	*Signal: Latched Output (Q)*
Logic . **LE56.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE57.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE57.Timer Out**	*Signal: Timer Output*
Logic . **LE57.Out**	*Signal: Latched Output (Q)*

1..n, DI-LogicList	Description
Logic . **LE57.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE58.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE58.Timer Out**	*Signal: Timer Output*
Logic . **LE58.Out**	*Signal: Latched Output (Q)*
Logic . **LE58.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE59.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE59.Timer Out**	*Signal: Timer Output*
Logic . **LE59.Out**	*Signal: Latched Output (Q)*
Logic . **LE59.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE60.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE60.Timer Out**	*Signal: Timer Output*
Logic . **LE60.Out**	*Signal: Latched Output (Q)*
Logic . **LE60.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE61.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE61.Timer Out**	*Signal: Timer Output*
Logic . **LE61.Out**	*Signal: Latched Output (Q)*
Logic . **LE61.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE62.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE62.Timer Out**	*Signal: Timer Output*
Logic . **LE62.Out**	*Signal: Latched Output (Q)*
Logic . **LE62.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE63.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE63.Timer Out**	*Signal: Timer Output*
Logic . **LE63.Out**	*Signal: Latched Output (Q)*
Logic . **LE63.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE64.Gate Out**	*Signal: Output of the logic gate*

1..n, DI-LogicList	Description
Logic . **LE64.Timer Out**	*Signal: Timer Output*
Logic . **LE64.Out**	*Signal: Latched Output (Q)*
Logic . **LE64.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE65.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE65.Timer Out**	*Signal: Timer Output*
Logic . **LE65.Out**	*Signal: Latched Output (Q)*
Logic . **LE65.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE66.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE66.Timer Out**	*Signal: Timer Output*
Logic . **LE66.Out**	*Signal: Latched Output (Q)*
Logic . **LE66.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE67.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE67.Timer Out**	*Signal: Timer Output*
Logic . **LE67.Out**	*Signal: Latched Output (Q)*
Logic . **LE67.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE68.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE68.Timer Out**	*Signal: Timer Output*
Logic . **LE68.Out**	*Signal: Latched Output (Q)*
Logic . **LE68.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE69.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE69.Timer Out**	*Signal: Timer Output*
Logic . **LE69.Out**	*Signal: Latched Output (Q)*
Logic . **LE69.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE70.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE70.Timer Out**	*Signal: Timer Output*
Logic . **LE70.Out**	*Signal: Latched Output (Q)*

1..n, DI-LogicList	Description
Logic . **LE70.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE71.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE71.Timer Out**	*Signal: Timer Output*
Logic . **LE71.Out**	*Signal: Latched Output (Q)*
Logic . **LE71.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE72.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE72.Timer Out**	*Signal: Timer Output*
Logic . **LE72.Out**	*Signal: Latched Output (Q)*
Logic . **LE72.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE73.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE73.Timer Out**	*Signal: Timer Output*
Logic . **LE73.Out**	*Signal: Latched Output (Q)*
Logic . **LE73.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE74.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE74.Timer Out**	*Signal: Timer Output*
Logic . **LE74.Out**	*Signal: Latched Output (Q)*
Logic . **LE74.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE75.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE75.Timer Out**	*Signal: Timer Output*
Logic . **LE75.Out**	*Signal: Latched Output (Q)*
Logic . **LE75.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE76.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE76.Timer Out**	*Signal: Timer Output*
Logic . **LE76.Out**	*Signal: Latched Output (Q)*
Logic . **LE76.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE77.Gate Out**	*Signal: Output of the logic gate*

1..n, DI-LogicList	Description
Logic . **LE77.Timer Out**	*Signal: Timer Output*
Logic . **LE77.Out**	*Signal: Latched Output (Q)*
Logic . **LE77.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE78.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE78.Timer Out**	*Signal: Timer Output*
Logic . **LE78.Out**	*Signal: Latched Output (Q)*
Logic . **LE78.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE79.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE79.Timer Out**	*Signal: Timer Output*
Logic . **LE79.Out**	*Signal: Latched Output (Q)*
Logic . **LE79.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE80.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE80.Timer Out**	*Signal: Timer Output*
Logic . **LE80.Out**	*Signal: Latched Output (Q)*
Logic . **LE80.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

Phases

Indicates if one, two of three or all phases are required for operation

Selection list referenced by parameters:

- ⮡ 37[1] . Phases

Phases	Description
any one	*any one: Trip Command, if the tripping criterion is fulfilled within at least one phase.*
all	*all: Trip Command for 3p-faults, i.e. if the tripping criterion is fulfilled in all three phases.*

Nom Voltage

Nominal voltage of the digital inputs

Selection list referenced by parameters:

- ⮡ DI Slot X1 . Nom Voltage

Nom Voltage	Description
24 Vdc	*24 Vdc*
48 Vdc	*48 Vdc*
60 Vdc	*60 Vdc*
125 Vdc	*125 Vdc*
250 Vdc	*250 Vdc*
110/120 Vac	*110 Vac*
230/240 Vac	*230/240 Vac*

1...n Operating Modes

Selection list referenced by parameters:

- ⮡ RO-3AI X2 . Operating Mode
- ⮡ RO-3AI X2 . Operating Mode
- ⮡ RO-3AI X2 . Operating Mode

1...n Operating Modes	Description
Norm De-energ. (NO)	*The working principle of the relay corresponds to normally de-energized (normally open) contact.*
Norm Energ. (NC)	*The working principle of the relay corresponds to normally energized (normally closed) contact.*

1..n, Assignment List

Assignment List

Selection list referenced by parameters:

- ⮡ RO-3AI X2 . Assignment 1
- ⮡ RO-3AI X2 . Assignment 2
- ⮡ RO-3AI X2 . Assignment 3
- ⮡ RO-3AI X2 . Assignment 4
- ⮡ RO-3AI X2 . Assignment 5
- ⮡ RO-3AI X2 . Assignment 6
- *[. . .]*

1..n, Assignment List	Description
“-”	*No assignment*
Prot . **Available**	*Signal: Protection is available.*
Prot . **Active**	*Signal: Active*
Prot . **Pickup Phase A**	*Signal: General Pickup Phase A*
Prot . **Pickup Phase B**	*Signal: General Pickup Phase B*
Prot . **Pickup Phase C**	*Signal: General Pickup Phase C*
Prot . **Pickup IX**	*Signal: General Pickup - Ground Fault*
Prot . **Pickup**	*Signal: General Pickup*
Prot . **Trip Phase A**	*Signal: General Trip Phase A*
Prot . **Trip Phase B**	*Signal: General Trip Phase B*
Prot . **Trip Phase C**	*Signal: General Trip Phase C*
Prot . **Trip IX**	*Signal: General Trip Ground Fault*
Prot . **Trip**	*Signal: General Trip*
Prot . **Res FaultNo**	*Signal: Resetting of fault number.*
MStart . **Active**	*Signal: Active*
MStart . **Trip**	*Signal: Trip*
MStart . **Start**	*Signal: Motor is in start mode*
MStart . **Run**	*Signal: Motor is in run mode*
MStart . **Stop**	*Signal: Motor is in stop mode*
MStart . **Blo**	*Signal: Motor is blocked for starting or transition to Run mode*
MStart . **NOCSBlocked**	*Signal: Motor is prohibited to start due to number of cold start limits*

1..n, Assignment List	Description
MStart . **SPHBlocked**	*Signal: Motor is prohibited to start due to starts per hour limits*
MStart . **SPHBlockAlarm**	*Signal: Motor is prohibited to start due to starts per hour limits, would come active in the next stop*
MStart . **TBSBlocked**	*Signal: Motor is prohibited to start due to time between starts limits*
MStart . **ThermalBlock**	*Signal: Thermal block*
MStart . **RemBlockStart**	*Signal: Motor is prohibited to start due to external blocking through digital input DI*
MStart . **TransitionTrip**	*Signal: Start transition fail trip*
MStart . **ZSSTrip**	*Signal: Zero speed trip (possible locked rotor)*
MStart . **INSQSP2STFaill**	*Signal: Fail to transit from stop to start based on reported back time*
MStart . **INSQSt2RunFail**	*Signal: Fail to transit from start to run based on reported back time*
MStart . **LATBlock**	*Signal: Long acceleration timer enforced*
MStart . **ColdStartSeq**	*Signal: Motor cold start sequence flag*
MStart . **ForcedStart**	*Signal: Motor being forced to start*
MStart . **TripPhaseReverse**	*Signal: Relay tripped because of phase reverse detection*
MStart . **EmergOverrideDI**	*Signal: Emergency override start blocking through digital input DI*
MStart . **EmergOverrideUI**	*Signal: Emergency override start blocking through front panel*
MStart . **ABKActive**	*Signal: Anti-backspin is active. For certain applications, such as pumping a fluid up a pipe, the motor may be driven backward for a period of time after it stops. The anti-backspin timer prevents starting the motor while it is spinning in the reverse direction.*
MStart . **GOCStartBlock**	*Signal: Ground Instantaneous Overcurrent Start Delay. GOC (Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*
MStart . **IOCStartBlock**	*Signal: Phase Instantaneous Overcurrent Start Delay. IOC (Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*
MStart . **ULoadStartBlock**	*Signal: Underload Start Delay. Underload(Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*
MStart . **JamStartBlock**	*Signal: JAM Start Delay. JAM(Instantaneous Overcurrent) elements are blocked for the time programmed under this parameter*

1..n, Assignment List	Description
MStart . **UnbalStartBlock**	*Signal: Motor start block current unbalance signal*
MStart . **I_Transit**	*Signal: Current transition signal*
MStart . **T_Transit**	*Signal: Time transition signal*
MStart . **MotorStopBlo**	*Signal: Motor stop block other protection functions*
MStart . **RFD_IA_Normal**	*Signal: System IA RotaryFieldDetection Normal*
MStart . **RFD_IA_Reverse**	*Signal: System IA RotaryFieldDetection Reverse*
MStart . **RemStartBlock-I**	*State of the module input: Remote Motor Start Blocking*
MStart . **EmgOvr-I**	*State of the module input: Emergency Override. Signal has to be active in order to release the thermal capacity of the motor. Please notice that by doing this you run the risk of damaging the motor. “EMGOVR” has to be set to “DI” or “DI or UI” for this input to take effect*
MStart . **INSQ-I**	*State of the module input: INcomplete SeQuence*
MStart . **ZSS-I**	*State of the module input: Zero Speed Switch*
MStart . **STPC Blo-I**	*State of the module input: With this setting a Digital Input keeps the Motor in the RUN mode, even when the motor current drops below STPC (motor stop current).*
50P[1] . **Active**	*Signal: Active*
50P[1] . **Pickup IA**	*Signal: Pickup IA*
50P[1] . **Pickup IB**	*Signal: Pickup IB*
50P[1] . **Pickup IC**	*Signal: Pickup IC*
50P[1] . **Pickup**	*Signal: Pickup*
50P[1] . **Trip**	*Signal: Trip*
50P[2] . **Active**	*Signal: Active*
50P[2] . **Pickup IA**	*Signal: Pickup IA*
50P[2] . **Pickup IB**	*Signal: Pickup IB*
50P[2] . **Pickup IC**	*Signal: Pickup IC*
50P[2] . **Pickup**	*Signal: Pickup*
50P[2] . **Trip**	*Signal: Trip*
50X[1] . **Active**	*Signal: Active*

1..n, Assignment List	Description
50X[1] . **Pickup**	*Signal: The pickup value has been exceeded.*
50X[1] . **Trip**	*Signal: Trip*
50X[2] . **Active**	*Signal: Active*
50X[2] . **Pickup**	*Signal: The pickup value has been exceeded.*
50X[2] . **Trip**	*Signal: Trip*
49 . **Alarm Pickup**	*Signal: Alarm Pickup*
49 . **Alarm Timeout**	*Signal: Alarm Timeout*
49 . **RTD effective**	*This state becomes true if the following conditions are all fulfilled:* *- the state “Load above SF” is true,* *- the Winding Temperature Trip has been activated in the RTD module,* *- for at least one temperature a valid value above 0°C (32°F) is being displayed.*
49 . **Load above SF**	*“Load above Service Factor”: If the current exceeds the set value of “UTC” (“Ultimate trip threshold”) then the used thermal capacity counts up and the state “Load above SF” is becoming true. If the current is below the “UTC” value this state is false.*
49 . **Active**	*Signal: Active*
49 . **Pickup**	*Signal: Pickup*
49 . **Trip**	*Signal: Trip*
50J[1] . **Active**	*Signal: Active*
50J[1] . **Pickup**	*Signal: Pickup*
50J[1] . **Trip**	*Signal: Trip*
50J[2] . **Active**	*Signal: Active*
50J[2] . **Pickup**	*Signal: Pickup*
50J[2] . **Trip**	*Signal: Trip*
37[1] . **Active**	*Signal: Active*
37[1] . **Pickup**	*Signal: Pickup*
37[1] . **Trip**	*Signal: Trip*
37[2] . **Active**	*Signal: Active*
37[2] . **Pickup**	*Signal: Pickup*
37[2] . **Trip**	*Signal: Trip*

1..n, Assignment List	Description
MLS . **Active**	*Signal: Active*
MLS . **Pickup**	*Signal: Pickup*
MLS . **Trip**	*Signal: Trip*
46[1] . **Active**	*Signal: Active*
46[1] . **Pickup**	*Signal: Pickup Negative Sequence*
46[1] . **Trip**	*Signal: Trip*
46[2] . **Active**	*Signal: Active*
46[2] . **Pickup**	*Signal: Pickup Negative Sequence*
46[2] . **Trip**	*Signal: Trip*
Ex87 . **Active**	*Signal: Active*
Ex87 . **Alarm**	*Signal: Alarm*
Ex87 . **Trip**	*Signal: Trip*
Ex87 . **Alarm-I**	*Module Input State: Alarm*
Ex87 . **Trip-I**	*Module Input State: Trip*
Remote Trip . **Active**	*Signal: Active*
Remote Trip . **Alarm**	*Signal: Alarm*
Remote Trip . **Trip**	*Signal: Trip*
Remote Trip . **Alarm-I**	*Module Input State: Alarm*
Remote Trip . **Trip-I**	*Module Input State: Trip*
URTD . **WD1 Superv**	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) WD1*
URTD . **WD2 Superv**	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) WD2*
URTD . **WD3 Superv**	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) WD3*
URTD . **WD4 Superv**	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) WD4*
URTD . **WD5 Superv**	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) WD5*
URTD . **WD6 Superv**	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) WD6*
URTD . **MB1 Superv**	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) MB1*

1..n, Assignment List	Description
URTD . **MB2 Superv**	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) MB2*
URTD . **LB1 Superv**	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) LB1*
URTD . **LB2 Superv**	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) LB2*
URTD . **Aux1 Superv**	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) Aux1*
URTD . **Aux2 Superv**	*Channel Supervision. The value “1” reports a detected channel failure. (The value “0” means that this RTD channel is healthy.) Aux2*
URTD . **Superv**	*Signal: URTD Channel Supervision. The value “1” reports a detected channel failure of at least one channel. (The value “0” means that all RTD channels are healthy.)*
URTD . **Connection active**	*Signal: There is an active connection between the Temperature Detector (URTD) and the protective relay.*
URTD . **Outs forced**	*Signal: The State of at least one Relay Output has been set by force. That means that the state of at least one Relay is forced and hence does not show the state of the assigned signals.*
RTD . **Active**	*Signal: Active*
RTD . **Alarm**	*Alarm RTD Temperature Protection*
RTD . **Trip**	*Signal: Trip*
RTD . **Trip WD Group**	*Trip all Windings*
RTD . **Alarm WD Group**	*Alarm all Windings*
RTD . **TimeoutAlmWDGrp**	*Timeout Alarm all Windings*
RTD . **WD Group Invalid**	*Winding Group Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **Trip MB Group**	*Trip all Motor Bearings*
RTD . **Alarm MB Group**	*Alarm all Motor Bearings*
RTD . **TimeoutAlmMBGrp**	*Timeout Alarm all Motor Bearings*
RTD . **MB Group Invalid**	*Motor Bearing Group Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **Trip LB Group**	*Trip all Load Bearings*
RTD . **Alarm LB Group**	*Alarm all Load Bearings*

1..n, Assignment List	Description
RTD . **TimeoutAlmLBGrp**	*Timeout Alarm all Load Bearings*
RTD . **LB Group Invalid**	*Load Bearing Group Signal: Invalid Temperature Measurement Value (e.g caused by an defective or interrupted RTD Measurement)*
RTD . **Trip Any Group**	*Trip Any Group*
RTD . **Alarm Any Group**	*Alarm Any Group*
RTD . **TimeoutAlmAnyGrp**	*Timeout Alarm Any Group*
RTD . **Voting Trip Grp 1**	*Voting Trip Group 1*
RTD . **Voting Trip Grp 2**	*Voting Trip Group 2*
RTD . **Timeout Alarm**	*Alarm timeout expired*
RTD . **Trip Aux Group**	*Trip Auxiliary Group*
RTD . **Alarm Aux Group**	*Alarm Auxiliary Group*
RTD . **TimeoutAlmAuxGrp**	*Timeout Alarm Auxiliary Group*
RTD . **AuxGrpInvalid**	*Invalid Auxiliary Group*
Trip Bypass . **Active**	*Signal: Active*
Trip Bypass . **Waiting for Trigger**	*Waiting for Trigger*
Trip Bypass . **Pickup**	*Signal: BF-Module Started (Pickup)*
Trip Bypass . **Trip**	*Signal: Breaker Failure Trip*
DI Slot X1 . **DI 1**	*Signal: Digital Input*
DI Slot X1 . **DI 2**	*Signal: Digital Input*
DI Slot X1 . **DI 3**	*Signal: Digital Input*
DI Slot X1 . **DI 4**	*Signal: Digital Input*
RO-3AI X2 . **RO 1**	*Signal: Relay Output*
RO-3AI X2 . **RO 2**	*Signal: Relay Output*
RO-3AI X2 . **RO 3**	*Signal: Relay Output*
RO-3AI X2 . **DISARMED!**	*Signal: CAUTION! RELAYS DISARMED in order to safely perform maintenance while eliminating the risk of taking an entire process off-line. (Note: Zone Interlocking and Supervision Contact cannot be disarmed). YOU MUST ENSURE that the relays are ARMED AGAIN after maintenance*

1..n, Assignment List	Description
RO-3AI X2 . **Outs forced**	*Signal: The State of at least one Relay Output has been set by force. That means that the state of at least one Relay is forced and hence does not show the state of the assigned signals.*
AnOut . **Force Mode**	*For commissioning purposes or for maintanance, Analog Outputs can be set by force. By means of this function the normal Analog Outputs can be overwritten (forced).*
Event rec . **Res all records**	*Signal: All records are being deleted. (Remark: Immediately afterwards, this signal becomes inactive again.)*
Waveform rec . **Recording**	*Signal: Recording*
Waveform rec . **Memory full**	*Signal: Memory Full*
Waveform rec . **Clear fail**	*Signal: Clear Failure in Memory*
Waveform rec . **Res all records**	*Signal: All records are being deleted. (Remark: Immediately afterwards, this signal becomes inactive again.)*
Waveform rec . **Res record**	*Signal: Delete record*
Waveform rec . **Man. Trigger**	*Signal: Manual Trigger*
Waveform rec . **Start1-I**	*State of the module input:: Trigger event / start recording*
Waveform rec . **Start2-I**	*State of the module input:: Trigger event / start recording*
Waveform rec . **Start3-I**	*State of the module input:: Trigger event / start recording*
Waveform rec . **Start4-I**	*State of the module input:: Trigger event / start recording*
Waveform rec . **Start5-I**	*State of the module input:: Trigger event / start recording*
Waveform rec . **Start6-I**	*State of the module input:: Trigger event / start recording*
Waveform rec . **Start7-I**	*State of the module input:: Trigger event / start recording*
Waveform rec . **Start8-I**	*State of the module input:: Trigger event / start recording*
Fault rec . **Res record**	*Signal: Delete record*
Trend rec . **Res all records**	*Signal: All records are being deleted. (Remark: Immediately afterwards, this signal becomes inactive again.)*
Start rec . **Storing**	*Signal: Data are saved*
SSV . **System Error**	*Signal: Device Failure*
SSV . **SelfSuperVision Contact**	*Signal: SelfSuperVision Contact*

1..n, Assignment List	Description
SCADA . **Comm connected**	*At least one Communication system is connected to the device.*
SCADA . **Comm not connected**	*No Communication system is connected to the device.*
DNP . **busy**	*This message is set if the protocol is started. It will be reset if the protocol is shut down.*
DNP . **ready**	*The message will be set if the protocol is successfully started and ready for data exchange.*
DNP . **active**	*The communication with the Master (SCADA) is active.* *Note that for TCP/UDP, this state is permanently “Low” unless »DataLink confirm« is set to “Always”.*
DNP . **BinaryOutput0**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput1**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput2**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput3**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput4**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput5**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput6**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput7**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput8**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput9**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput10**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput11**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput12**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*

1..n, Assignment List	Description
DNP . **BinaryOutput13**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput14**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput15**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput16**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput17**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput18**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput19**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput20**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput21**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput22**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput23**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput24**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput25**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput26**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput27**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput28**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput29**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput30**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*
DNP . **BinaryOutput31**	*Virtual Digital Output (DNP). This corresponds to a virtual binary input of the protective device.*

1..n, Assignment List	Description
DNP . **BinaryInput0-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput1-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput2-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput3-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput4-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput5-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput6-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput7-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput8-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput9-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput10-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput11-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput12-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput13-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput14-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput15-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput16-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput17-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput18-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*

1..n, Assignment List	Description
DNP . **BinaryInput19-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput20-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput21-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput22-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput23-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput24-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput25-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput26-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput27-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput28-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput29-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput30-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput31-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput32-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput33-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput34-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput35-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput36-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput37-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*

1..n, Assignment List	Description
DNP . **BinaryInput38-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput39-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput40-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput41-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput42-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput43-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput44-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput45-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput46-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput47-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput48-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput49-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput50-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput51-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput52-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput53-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput54-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput55-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput56-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*

1..n, Assignment List	Description
DNP . **BinaryInput57-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput58-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput59-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput60-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput61-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput62-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
DNP . **BinaryInput63-I**	*Virtual Digital Input (DNP). This corresponds to a virtual binary output of the protective device.*
Modbus . **Transmission RTU**	*Signal: Communication Active*
Modbus . **Transmission TCP**	*Signal: Communication Active*
Modbus . **Comm Cmd 1**	*Communication Command*
Modbus . **Comm Cmd 2**	*Communication Command*
Modbus . **Comm Cmd 3**	*Communication Command*
Modbus . **Comm Cmd 4**	*Communication Command*
Modbus . **Comm Cmd 5**	*Communication Command*
Modbus . **Comm Cmd 6**	*Communication Command*
Modbus . **Comm Cmd 7**	*Communication Command*
Modbus . **Comm Cmd 8**	*Communication Command*
Modbus . **Comm Cmd 9**	*Communication Command*
Modbus . **Comm Cmd 10**	*Communication Command*
Modbus . **Comm Cmd 11**	*Communication Command*
Modbus . **Comm Cmd 12**	*Communication Command*
Modbus . **Comm Cmd 13**	*Communication Command*

1..n, Assignment List	Description
Modbus . **Comm Cmd 14**	*Communication Command*
Modbus . **Comm Cmd 15**	*Communication Command*
Modbus . **Comm Cmd 16**	*Communication Command*
Modbus . **Config Bin Inp1-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp2-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp3-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp4-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp5-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp6-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp7-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp8-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp9-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp10-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp11-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp12-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp13-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp14-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp15-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp16-I**	*State of the module input: Config Bin Inp*

1..n, Assignment List	Description
Modbus . **Config Bin Inp17-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp18-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp19-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp20-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp21-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp22-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp23-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp24-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp25-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp26-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp27-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp28-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp29-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp30-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp31-I**	*State of the module input: Config Bin Inp*
Modbus . **Config Bin Inp32-I**	*State of the module input: Config Bin Inp*
IEC 61850 . **MMS Client connected**	*At least one MMS client is connected to the device*
IEC 61850 . **All Goose Subscriber active**	*All Goose subscriber in the device are working*
IEC 61850 . **VirtInp1**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp2**	*Signal: Virtual Input (IEC61850 GGIO Ind)*

1..n, Assignment List	Description
IEC 61850 . **VirtInp3**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp4**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp5**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp6**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp7**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp8**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp9**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp10**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp11**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp12**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp13**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp14**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp15**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp16**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp17**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp18**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp19**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp20**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp21**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp22**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp23**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp24**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp25**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp26**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp27**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp28**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp29**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp30**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp31**	*Signal: Virtual Input (IEC61850 GGIO Ind)*
IEC 61850 . **VirtInp32**	*Signal: Virtual Input (IEC61850 GGIO Ind)*

1..n, Assignment List	Description
IEC 61850 . **Quality of GGIO In1**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In2**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In3**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In4**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In5**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In6**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In7**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In8**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In9**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In10**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In11**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In12**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In13**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In14**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In15**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In16**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In17**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In18**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In19**	*Self-Supervision of the GGIO Input*

1..n, Assignment List	Description
IEC 61850 . **Quality of GGIO In20**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In21**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In22**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In23**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In24**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In25**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In26**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In27**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In28**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In29**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In30**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In31**	*Self-Supervision of the GGIO Input*
IEC 61850 . **Quality of GGIO In32**	*Self-Supervision of the GGIO Input*
IEC 61850 . **SPCSO1**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO2**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO3**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO4**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO5**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO6**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*

1..n, Assignment List	Description
IEC 61850 . **SPCSO7**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO8**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO9**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO10**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO11**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO12**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO13**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO14**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO15**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO16**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO17**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO18**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO19**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO20**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO21**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO22**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO23**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO24**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO25**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*

1..n, Assignment List	Description
IEC 61850 . **SPCSO26**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO27**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO28**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO29**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO30**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO31**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **SPCSO32**	*Status bit that can be set by clients like e.g. the Master Communication System (Single Point Controllable Status Output).*
IEC 61850 . **VirtOut1-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut2-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut3-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut4-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut5-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut6-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut7-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut8-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut9-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut10-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut11-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut12-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut13-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut14-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut15-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut16-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut17-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut18-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut19-I**	*Module input state: Binary state of the Virtual Output (GGIO)*

1..n, Assignment List	Description
IEC 61850 . **VirtOut20-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut21-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut22-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut23-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut24-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut25-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut26-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut27-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut28-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut29-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut30-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut31-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
IEC 61850 . **VirtOut32-I**	*Module input state: Binary state of the Virtual Output (GGIO)*
Profibus . **Data OK**	*Data within the input field are OK (Yes=1)*
Profibus . **SubModul Err**	*Assignable Signal, Failure in Sub-Module, Communication Failure.*
Profibus . **Connection active**	*Connection active*
Profibus . **Comm Cmd 1**	*Communication Command*
Profibus . **Comm Cmd 2**	*Communication Command*
Profibus . **Comm Cmd 3**	*Communication Command*
Profibus . **Comm Cmd 4**	*Communication Command*
Profibus . **Comm Cmd 5**	*Communication Command*
Profibus . **Comm Cmd 6**	*Communication Command*
Profibus . **Comm Cmd 7**	*Communication Command*
Profibus . **Comm Cmd 8**	*Communication Command*
Profibus . **Comm Cmd 9**	*Communication Command*
Profibus . **Comm Cmd 10**	*Communication Command*
Profibus . **Comm Cmd 11**	*Communication Command*

1..n, Assignment List	Description
Profibus . **Comm Cmd 12**	*Communication Command*
Profibus . **Comm Cmd 13**	*Communication Command*
Profibus . **Comm Cmd 14**	*Communication Command*
Profibus . **Comm Cmd 15**	*Communication Command*
Profibus . **Comm Cmd 16**	*Communication Command*
IRIG-B . **IRIG-B active**	*Signal: If there is no valid IRIG-B signal for 60 sec, IRIG-B is regarded as inactive.*
IRIG-B . **High-Low Invert**	*Signal: The High and Low signals of the IRIG-B are inverted. This does NOT mean that the wiring is faulty. If the wiring is faulty no IRIG-B signal will be detected.*
IRIG-B . **Control Signal1**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal2**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal3**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal4**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal5**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal6**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal7**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal8**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*

1..n, Assignment List	Description
IRIG-B . **Control Signal9**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal10**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal11**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal12**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal13**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal14**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal15**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal16**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal17**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
IRIG-B . **Control Signal18**	*Signal: IRIG-B Control Signal. The external IRIG-B generator can set these signals. They can be used for further control procedures inside the device (e.g. logic funtions).*
SNTP . **SNTP active**	*Signal: If there is no valid SNTP signal for 120 sec, SNTP is regarded as inactive.*
TimeSync . **synchronized**	*Clock is synchronized.*
Logic . **LE1.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE1.Timer Out**	*Signal: Timer Output*
Logic . **LE1.Out**	*Signal: Latched Output (Q)*
Logic . **LE1.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE1.Gate In1-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logic . **LE1.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE1.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE1.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE1.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE2.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE2.Timer Out**	*Signal: Timer Output*
Logic . **LE2.Out**	*Signal: Latched Output (Q)*
Logic . **LE2.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE2.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE2.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE2.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE2.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE2.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE3.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE3.Timer Out**	*Signal: Timer Output*
Logic . **LE3.Out**	*Signal: Latched Output (Q)*
Logic . **LE3.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE3.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE3.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE3.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE3.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE3.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE4.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE4.Timer Out**	*Signal: Timer Output*
Logic . **LE4.Out**	*Signal: Latched Output (Q)*
Logic . **LE4.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

1..n, Assignment List	Description
Logic . **LE4.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE4.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE4.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE4.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE4.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE5.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE5.Timer Out**	*Signal: Timer Output*
Logic . **LE5.Out**	*Signal: Latched Output (Q)*
Logic . **LE5.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE5.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE5.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE5.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE5.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE5.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE6.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE6.Timer Out**	*Signal: Timer Output*
Logic . **LE6.Out**	*Signal: Latched Output (Q)*
Logic . **LE6.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE6.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE6.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE6.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE6.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE6.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE7.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE7.Timer Out**	*Signal: Timer Output*
Logic . **LE7.Out**	*Signal: Latched Output (Q)*

1..n, Assignment List	Description
Logic . **LE7.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE7.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE7.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE7.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE7.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE7.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE8.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE8.Timer Out**	*Signal: Timer Output*
Logic . **LE8.Out**	*Signal: Latched Output (Q)*
Logic . **LE8.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE8.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE8.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE8.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE8.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE8.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE9.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE9.Timer Out**	*Signal: Timer Output*
Logic . **LE9.Out**	*Signal: Latched Output (Q)*
Logic . **LE9.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE9.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE9.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE9.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE9.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE9.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE10.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE10.Timer Out**	*Signal: Timer Output*

1..n, Assignment List	Description
Logic . **LE10.Out**	*Signal: Latched Output (Q)*
Logic . **LE10.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE10.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE10.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE10.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE10.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE10.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE11.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE11.Timer Out**	*Signal: Timer Output*
Logic . **LE11.Out**	*Signal: Latched Output (Q)*
Logic . **LE11.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE11.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE11.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE11.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE11.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE11.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE12.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE12.Timer Out**	*Signal: Timer Output*
Logic . **LE12.Out**	*Signal: Latched Output (Q)*
Logic . **LE12.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE12.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE12.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE12.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE12.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE12.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE13.Gate Out**	*Signal: Output of the logic gate*

1..n, Assignment List	Description
Logic . **LE13.Timer Out**	*Signal: Timer Output*
Logic . **LE13.Out**	*Signal: Latched Output (Q)*
Logic . **LE13.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE13.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE13.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE13.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE13.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE13.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE14.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE14.Timer Out**	*Signal: Timer Output*
Logic . **LE14.Out**	*Signal: Latched Output (Q)*
Logic . **LE14.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE14.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE14.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE14.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE14.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE14.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE15.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE15.Timer Out**	*Signal: Timer Output*
Logic . **LE15.Out**	*Signal: Latched Output (Q)*
Logic . **LE15.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE15.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE15.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE15.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE15.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE15.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*

1..n, Assignment List	Description
Logic . **LE16.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE16.Timer Out**	*Signal: Timer Output*
Logic . **LE16.Out**	*Signal: Latched Output (Q)*
Logic . **LE16.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE16.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE16.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE16.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE16.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE16.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE17.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE17.Timer Out**	*Signal: Timer Output*
Logic . **LE17.Out**	*Signal: Latched Output (Q)*
Logic . **LE17.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE17.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE17.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE17.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE17.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE17.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE18.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE18.Timer Out**	*Signal: Timer Output*
Logic . **LE18.Out**	*Signal: Latched Output (Q)*
Logic . **LE18.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE18.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE18.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE18.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE18.Gate In4-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logic . **LE18.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE19.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE19.Timer Out**	*Signal: Timer Output*
Logic . **LE19.Out**	*Signal: Latched Output (Q)*
Logic . **LE19.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE19.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE19.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE19.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE19.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE19.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE20.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE20.Timer Out**	*Signal: Timer Output*
Logic . **LE20.Out**	*Signal: Latched Output (Q)*
Logic . **LE20.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE20.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE20.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE20.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE20.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE20.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE21.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE21.Timer Out**	*Signal: Timer Output*
Logic . **LE21.Out**	*Signal: Latched Output (Q)*
Logic . **LE21.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE21.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE21.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE21.Gate In3-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logic . **LE21.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE21.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE22.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE22.Timer Out**	*Signal: Timer Output*
Logic . **LE22.Out**	*Signal: Latched Output (Q)*
Logic . **LE22.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE22.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE22.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE22.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE22.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE22.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE23.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE23.Timer Out**	*Signal: Timer Output*
Logic . **LE23.Out**	*Signal: Latched Output (Q)*
Logic . **LE23.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE23.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE23.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE23.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE23.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE23.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE24.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE24.Timer Out**	*Signal: Timer Output*
Logic . **LE24.Out**	*Signal: Latched Output (Q)*
Logic . **LE24.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE24.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE24.Gate In2-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logic . **LE24.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE24.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE24.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE25.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE25.Timer Out**	*Signal: Timer Output*
Logic . **LE25.Out**	*Signal: Latched Output (Q)*
Logic . **LE25.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE25.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE25.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE25.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE25.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE25.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE26.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE26.Timer Out**	*Signal: Timer Output*
Logic . **LE26.Out**	*Signal: Latched Output (Q)*
Logic . **LE26.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE26.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE26.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE26.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE26.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE26.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE27.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE27.Timer Out**	*Signal: Timer Output*
Logic . **LE27.Out**	*Signal: Latched Output (Q)*
Logic . **LE27.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE27.Gate In1-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logic . **LE27.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE27.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE27.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE27.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE28.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE28.Timer Out**	*Signal: Timer Output*
Logic . **LE28.Out**	*Signal: Latched Output (Q)*
Logic . **LE28.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE28.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE28.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE28.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE28.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE28.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE29.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE29.Timer Out**	*Signal: Timer Output*
Logic . **LE29.Out**	*Signal: Latched Output (Q)*
Logic . **LE29.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE29.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE29.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE29.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE29.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE29.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE30.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE30.Timer Out**	*Signal: Timer Output*
Logic . **LE30.Out**	*Signal: Latched Output (Q)*
Logic . **LE30.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

1..n, Assignment List	Description
Logic . **LE30.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE30.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE30.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE30.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE30.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE31.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE31.Timer Out**	*Signal: Timer Output*
Logic . **LE31.Out**	*Signal: Latched Output (Q)*
Logic . **LE31.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE31.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE31.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE31.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE31.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE31.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE32.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE32.Timer Out**	*Signal: Timer Output*
Logic . **LE32.Out**	*Signal: Latched Output (Q)*
Logic . **LE32.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE32.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE32.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE32.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE32.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE32.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE33.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE33.Timer Out**	*Signal: Timer Output*
Logic . **LE33.Out**	*Signal: Latched Output (Q)*

1..n, Assignment List	Description
Logic . **LE33.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE33.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE33.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE33.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE33.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE33.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE34.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE34.Timer Out**	*Signal: Timer Output*
Logic . **LE34.Out**	*Signal: Latched Output (Q)*
Logic . **LE34.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE34.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE34.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE34.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE34.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE34.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE35.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE35.Timer Out**	*Signal: Timer Output*
Logic . **LE35.Out**	*Signal: Latched Output (Q)*
Logic . **LE35.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE35.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE35.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE35.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE35.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE35.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE36.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE36.Timer Out**	*Signal: Timer Output*

1..n, Assignment List	Description
Logic . **LE36.Out**	*Signal: Latched Output (Q)*
Logic . **LE36.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE36.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE36.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE36.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE36.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE36.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE37.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE37.Timer Out**	*Signal: Timer Output*
Logic . **LE37.Out**	*Signal: Latched Output (Q)*
Logic . **LE37.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE37.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE37.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE37.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE37.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE37.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE38.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE38.Timer Out**	*Signal: Timer Output*
Logic . **LE38.Out**	*Signal: Latched Output (Q)*
Logic . **LE38.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE38.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE38.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE38.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE38.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE38.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE39.Gate Out**	*Signal: Output of the logic gate*

1..n, Assignment List	Description
Logic . **LE39.Timer Out**	*Signal: Timer Output*
Logic . **LE39.Out**	*Signal: Latched Output (Q)*
Logic . **LE39.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE39.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE39.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE39.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE39.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE39.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE40.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE40.Timer Out**	*Signal: Timer Output*
Logic . **LE40.Out**	*Signal: Latched Output (Q)*
Logic . **LE40.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE40.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE40.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE40.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE40.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE40.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE41.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE41.Timer Out**	*Signal: Timer Output*
Logic . **LE41.Out**	*Signal: Latched Output (Q)*
Logic . **LE41.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE41.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE41.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE41.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE41.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE41.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*

1..n, Assignment List	Description
Logic . **LE42.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE42.Timer Out**	*Signal: Timer Output*
Logic . **LE42.Out**	*Signal: Latched Output (Q)*
Logic . **LE42.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE42.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE42.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE42.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE42.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE42.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE43.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE43.Timer Out**	*Signal: Timer Output*
Logic . **LE43.Out**	*Signal: Latched Output (Q)*
Logic . **LE43.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE43.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE43.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE43.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE43.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE43.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE44.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE44.Timer Out**	*Signal: Timer Output*
Logic . **LE44.Out**	*Signal: Latched Output (Q)*
Logic . **LE44.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE44.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE44.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE44.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE44.Gate In4-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logic . **LE44.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE45.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE45.Timer Out**	*Signal: Timer Output*
Logic . **LE45.Out**	*Signal: Latched Output (Q)*
Logic . **LE45.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE45.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE45.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE45.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE45.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE45.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE46.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE46.Timer Out**	*Signal: Timer Output*
Logic . **LE46.Out**	*Signal: Latched Output (Q)*
Logic . **LE46.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE46.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE46.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE46.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE46.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE46.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE47.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE47.Timer Out**	*Signal: Timer Output*
Logic . **LE47.Out**	*Signal: Latched Output (Q)*
Logic . **LE47.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE47.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE47.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE47.Gate In3-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logic . **LE47.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE47.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE48.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE48.Timer Out**	*Signal: Timer Output*
Logic . **LE48.Out**	*Signal: Latched Output (Q)*
Logic . **LE48.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE48.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE48.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE48.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE48.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE48.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE49.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE49.Timer Out**	*Signal: Timer Output*
Logic . **LE49.Out**	*Signal: Latched Output (Q)*
Logic . **LE49.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE49.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE49.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE49.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE49.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE49.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE50.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE50.Timer Out**	*Signal: Timer Output*
Logic . **LE50.Out**	*Signal: Latched Output (Q)*
Logic . **LE50.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE50.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE50.Gate In2-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logic . **LE50.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE50.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE50.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE51.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE51.Timer Out**	*Signal: Timer Output*
Logic . **LE51.Out**	*Signal: Latched Output (Q)*
Logic . **LE51.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE51.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE51.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE51.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE51.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE51.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE52.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE52.Timer Out**	*Signal: Timer Output*
Logic . **LE52.Out**	*Signal: Latched Output (Q)*
Logic . **LE52.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE52.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE52.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE52.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE52.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE52.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE53.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE53.Timer Out**	*Signal: Timer Output*
Logic . **LE53.Out**	*Signal: Latched Output (Q)*
Logic . **LE53.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE53.Gate In1-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logic . **LE53.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE53.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE53.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE53.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE54.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE54.Timer Out**	*Signal: Timer Output*
Logic . **LE54.Out**	*Signal: Latched Output (Q)*
Logic . **LE54.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE54.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE54.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE54.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE54.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE54.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE55.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE55.Timer Out**	*Signal: Timer Output*
Logic . **LE55.Out**	*Signal: Latched Output (Q)*
Logic . **LE55.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE55.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE55.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE55.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE55.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE55.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE56.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE56.Timer Out**	*Signal: Timer Output*
Logic . **LE56.Out**	*Signal: Latched Output (Q)*
Logic . **LE56.Out inverted**	*Signal: Negated Latched Output (Q NOT)*

1..n, Assignment List	Description
Logic . **LE56.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE56.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE56.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE56.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE56.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE57.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE57.Timer Out**	*Signal: Timer Output*
Logic . **LE57.Out**	*Signal: Latched Output (Q)*
Logic . **LE57.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE57.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE57.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE57.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE57.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE57.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE58.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE58.Timer Out**	*Signal: Timer Output*
Logic . **LE58.Out**	*Signal: Latched Output (Q)*
Logic . **LE58.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE58.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE58.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE58.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE58.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE58.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE59.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE59.Timer Out**	*Signal: Timer Output*
Logic . **LE59.Out**	*Signal: Latched Output (Q)*

1..n, Assignment List	Description
Logic . **LE59.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE59.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE59.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE59.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE59.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE59.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE60.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE60.Timer Out**	*Signal: Timer Output*
Logic . **LE60.Out**	*Signal: Latched Output (Q)*
Logic . **LE60.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE60.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE60.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE60.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE60.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE60.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE61.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE61.Timer Out**	*Signal: Timer Output*
Logic . **LE61.Out**	*Signal: Latched Output (Q)*
Logic . **LE61.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE61.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE61.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE61.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE61.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE61.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE62.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE62.Timer Out**	*Signal: Timer Output*

1..n, Assignment List	Description
Logic . **LE62.Out**	*Signal: Latched Output (Q)*
Logic . **LE62.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE62.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE62.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE62.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE62.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE62.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE63.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE63.Timer Out**	*Signal: Timer Output*
Logic . **LE63.Out**	*Signal: Latched Output (Q)*
Logic . **LE63.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE63.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE63.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE63.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE63.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE63.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE64.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE64.Timer Out**	*Signal: Timer Output*
Logic . **LE64.Out**	*Signal: Latched Output (Q)*
Logic . **LE64.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE64.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE64.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE64.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE64.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE64.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE65.Gate Out**	*Signal: Output of the logic gate*

1..n, Assignment List	Description
Logic . **LE65.Timer Out**	*Signal: Timer Output*
Logic . **LE65.Out**	*Signal: Latched Output (Q)*
Logic . **LE65.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE65.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE65.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE65.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE65.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE65.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE66.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE66.Timer Out**	*Signal: Timer Output*
Logic . **LE66.Out**	*Signal: Latched Output (Q)*
Logic . **LE66.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE66.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE66.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE66.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE66.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE66.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE67.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE67.Timer Out**	*Signal: Timer Output*
Logic . **LE67.Out**	*Signal: Latched Output (Q)*
Logic . **LE67.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE67.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE67.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE67.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE67.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE67.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*

1..n, Assignment List	Description
Logic . **LE68.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE68.Timer Out**	*Signal: Timer Output*
Logic . **LE68.Out**	*Signal: Latched Output (Q)*
Logic . **LE68.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE68.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE68.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE68.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE68.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE68.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE69.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE69.Timer Out**	*Signal: Timer Output*
Logic . **LE69.Out**	*Signal: Latched Output (Q)*
Logic . **LE69.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE69.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE69.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE69.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE69.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE69.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE70.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE70.Timer Out**	*Signal: Timer Output*
Logic . **LE70.Out**	*Signal: Latched Output (Q)*
Logic . **LE70.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE70.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE70.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE70.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE70.Gate In4-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logic . **LE70.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE71.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE71.Timer Out**	*Signal: Timer Output*
Logic . **LE71.Out**	*Signal: Latched Output (Q)*
Logic . **LE71.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE71.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE71.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE71.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE71.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE71.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE72.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE72.Timer Out**	*Signal: Timer Output*
Logic . **LE72.Out**	*Signal: Latched Output (Q)*
Logic . **LE72.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE72.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE72.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE72.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE72.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE72.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE73.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE73.Timer Out**	*Signal: Timer Output*
Logic . **LE73.Out**	*Signal: Latched Output (Q)*
Logic . **LE73.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE73.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE73.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE73.Gate In3-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logic . **LE73.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE73.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE74.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE74.Timer Out**	*Signal: Timer Output*
Logic . **LE74.Out**	*Signal: Latched Output (Q)*
Logic . **LE74.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE74.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE74.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE74.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE74.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE74.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE75.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE75.Timer Out**	*Signal: Timer Output*
Logic . **LE75.Out**	*Signal: Latched Output (Q)*
Logic . **LE75.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE75.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE75.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE75.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE75.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE75.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE76.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE76.Timer Out**	*Signal: Timer Output*
Logic . **LE76.Out**	*Signal: Latched Output (Q)*
Logic . **LE76.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE76.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE76.Gate In2-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logic . **LE76.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE76.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE76.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE77.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE77.Timer Out**	*Signal: Timer Output*
Logic . **LE77.Out**	*Signal: Latched Output (Q)*
Logic . **LE77.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE77.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE77.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE77.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE77.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE77.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE78.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE78.Timer Out**	*Signal: Timer Output*
Logic . **LE78.Out**	*Signal: Latched Output (Q)*
Logic . **LE78.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE78.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE78.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE78.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE78.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE78.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE79.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE79.Timer Out**	*Signal: Timer Output*
Logic . **LE79.Out**	*Signal: Latched Output (Q)*
Logic . **LE79.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE79.Gate In1-I**	*State of the module input: Assignment of the Input Signal*

1..n, Assignment List	Description
Logic . **LE79.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE79.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE79.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE79.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Logic . **LE80.Gate Out**	*Signal: Output of the logic gate*
Logic . **LE80.Timer Out**	*Signal: Timer Output*
Logic . **LE80.Out**	*Signal: Latched Output (Q)*
Logic . **LE80.Out inverted**	*Signal: Negated Latched Output (Q NOT)*
Logic . **LE80.Gate In1-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE80.Gate In2-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE80.Gate In3-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE80.Gate In4-I**	*State of the module input: Assignment of the Input Signal*
Logic . **LE80.Reset Latch-I**	*State of the module input: Reset Signal for the Latching*
Sgen . **Manual Start**	*Fault Simulation has been started manually.*
Sgen . **Manual Stop**	*Fault Simulation has been stopped manually.*
Sgen . **Running**	*Signal: Measuring value simulation is running*
Sgen . **Started**	*Fault Simulation has been started*
Sgen . **Stopped**	*Fault Simulation has been stopped*
Sgen . **Ex Start Simulation-I**	*State of the module input:External Start of Fault Simulation (Using the test parameters)*
Sgen . **ExBlo1-I**	*Module Input State: External Blocking1*
Sgen . **ExBlo2-I**	*Module Input State: External Blocking2*
Sgen . **Ex ForcePost-I**	*State of the module input:Force Post state. Abort simulation.*
Sys . **Min. 1 param changed**	*Signal: At least one parameter has been changed*
Sys . **Program Mode Bypass**	*Signal: Short-period bypass of the Program Mode.*
Sys . **Ack LED-HMI**	*Signal: LEDs Acknowledgment, triggered at the HMI*
Sys . **Ack RO-HMI**	*Signal: Acknowledgment of the Relay Outputs, triggered at the HMI*

1..n, Assignment List	Description
Sys . **Ack Comm-HMI**	*Signal: Acknowledge latched communication (SCADA) signals, triggered at the HMI*

1..n, AnalogOutputList

Selection list referenced by parameters:

- ↳ AnOut . Assignment

1..n, AnalogOutputList	Description
“-”	*No assignment*
CT . **IA RMS**	*Measured value: Phase current (RMS)*
CT . **IB RMS**	*Measured value: Phase current (RMS)*
CT . **IC RMS**	*Measured value: Phase current (RMS)*
CT . **IX meas RMS**	*Measured value (measured): IX (RMS)*
CT . **IR calc RMS**	*Measured value (calculated): IR (RMS)*
CT . **IA THD**	*Measured Value (Calculated): IA Total Harmonic Current*
CT . **IB THD**	*Measured Value (Calculated): IB Total Harmonic Current*
CT . **IC THD**	*Measured Value (Calculated): IC Total Harmonic Current*
MStart . **IA FLA**	*Measured value: Phase current multiples of FLA*
MStart . **IB FLA**	*Measured value: Phase current multiples of FLA*
MStart . **IC FLA**	*Measured value: Phase current multiples of FLA*
MStart . **I3 PFLA avg**	*Average RMS current of all 3 phases as multiples of FLA*
MStart . **I3P Fla Demand**	*RMS current of all 3 phases calculated in a fixed demand window as multiples of FLA*
49 . **I2T Used**	*Thermal capacity used.*
49 . **I2T Remained**	*Thermal capacity remained.*
URTD . **WD1**	*Winding 1*
URTD . **WD2**	*Winding 2*
URTD . **WD3**	*Winding 3*
URTD . **WD4**	*Winding 4*

1..n, AnalogOutputList	Description
URTD . **WD5**	*Winding 5*
URTD . **WD6**	*Winding 6*
URTD . **MB1**	*Motor Bearing 1*
URTD . **MB2**	*Motor Bearing 2*
URTD . **LB1**	*Load Bearing 1*
URTD . **LB2**	*Load Bearing 2*
URTD . **Aux1**	*Auxiliary1*
URTD . **Aux2**	*Auxiliary2*
URTD . **RTD Max**	*Maximum temperature of all channels.*
RTD . **Hottest WD**	*The actual value for the hottest winding temperature.*
RTD . **Hottest MB**	*The actual value for the hottest motor bearing temperature.*

Type of Output

Type of Output: Select the output range and type

Selection list referenced by parameters:

- ⮡ AnOut . Range

Type of Output	Description
0...20mA	*0...20mA*
4...20mA	*4...20mA*

Mode

General Operation Mode

Selection list referenced by parameters:

- ⮡ LEDs . Latched
- ⮡ LEDs . Latched

- ↳ LEDs . Latched
- ↳ LEDs . Latched
- ↳ LEDs . Latched
- ↳ LEDs . Latched
- *[. . .]*

Mode	Description
Inactive	*Inactive*
Active	*Active*
active, ack. by pickup	*Latching of LEDs is active, but will be acknowledged (reset) automatically (by a protection function) in case of a new pickup.*

LED Active Color

Selection list referenced by parameters:

- ↳ LEDs . LED Active Color
- ↳ LEDs . LED Inactive Color
- ↳ LEDs . LED Active Color
- ↳ LEDs . LED Inactive Color
- ↳ LEDs . LED Active Color
- ↳ LEDs . LED Inactive Color
- *[. . .]*

LED Active Color	Description
Green	*Green*
Red	*Red*
Red flash	*Red flashing*
Green flash	*Green blinking*
“-”	*No assignment*

Config. Device Reset

If the »Ack/Rst« key is pressed while the device is performing a cold restart a general Reset Dialog appears on the screen. Select which options shall be available with this dialog.

Selection list referenced by parameters:

- ⮡ HMI . Config. Device Reset
- ⮡ HMI . Config. Device Reset

Config. Device Reset	Description
“Fact.def.”, “PW rst”	*Two Reset Options shall be available:* *- "Reset to factory defaults",* *- "Reset passwords".*
Only “Fact.defaults”	*Only one Reset Option shall be available:* *- "Reset to factory defaults".* *CAUTION: If this option has been chosen and the password should ever get lost then the only chance to recover control is to reset the protection device to factory defaults.*
Reset deact.	*The Reset Options shall be deactivated.* *CAUTION: If this option has been chosen and the password should ever get lost, then the protection device has to be sent to the manufacturer as a service request.*

Record-Mode

Recorder Mode (Set the behaviour of the recorder)

Selection list referenced by parameters:

- ⮡ Fault rec . Record-Mode

Record-Mode	Description
Pickups and Trips	*A recording is started in case of a pickup or a trip.*
Trips only	*A recording is started only in case of a trip.*

Resolution

Resolution (recording frequency)

Selection list referenced by parameters:

- ⮡ Start rec . Resolution

Resolution	Description
50ms	*The resolution is: 50ms*
100ms	*The resolution is: 100ms*
1s	*The resolution is: 1s*

Resolution

Resolution (recording frequency)

Selection list referenced by parameters:

- ⮡ Trend rec . Resolution

Resolution	Description
60 min	*Add next entry: 60 min*
30 min	*Add next entry: 30 min*
15 min	*Add next entry: 15 min*
10 min	*Add next entry: 10 min*
5 min	*Add next entry: 5 min*

1..n, TrendRecList

Selection list referenced by parameters:

- ⮡ DNP . Analog value 0
- ⮡ Modbus . Mapped Meas 1
- ⮡ Trend rec . Observed Value1

- ⮡ Trend rec . Observed Value2
- ⮡ Trend rec . Observed Value3
- ⮡ Trend rec . Observed Value4
- *[. . .]*

1..n, TrendRecList	Description
“-”	*No assignment*
CT . **IA RMS**	*Measured value: Phase current (RMS)*
CT . **IB RMS**	*Measured value: Phase current (RMS)*
CT . **IC RMS**	*Measured value: Phase current (RMS)*
CT . **IX meas RMS**	*Measured value (measured): IX (RMS)*
CT . **I0 Fund.**	*Measured value (calculated): Zero current (Fundamental)*
CT . **I1 Fund.**	*Measured value (calculated): Positive phase sequence current (Fundamental)*
CT . **I2 Fund.**	*Measured value (calculated): Unbalanced load current (Fundamental)*
CT . **%(I2/I1)**	*Measured value (calculated): I2/I1, phase sequence will be taken into account automatically.*
CT . **%(I2/I1) max**	*Measured value (calculated): I2/I1 maximum value, phase sequence will be taken into account automatically*
CT . **IA avg RMS**	*IA average value (RMS)*
CT . **IB avg RMS**	*IB average value (RMS)*
CT . **IC avg RMS**	*IC average value (RMS)*
MStart . **IA FLA**	*Measured value: Phase current multiples of FLA*
MStart . **IB FLA**	*Measured value: Phase current multiples of FLA*
MStart . **IC FLA**	*Measured value: Phase current multiples of FLA*
MStart . **I3 PFLA avg**	*Average RMS current of all 3 phases as multiples of FLA*
49 . **I2T Used**	*Thermal capacity used.*
URTD . **WD1**	*Winding 1*
URTD . **WD1 max**	*Winding1 Maximum Value*
URTD . **WD2**	*Winding 2*
URTD . **WD2 max**	*Winding2 Maximum Value*
URTD . **WD3**	*Winding 3*
URTD . **WD3 max**	*Winding3 Maximum Value*

1..n, TrendRecList	Description
URTD . **WD4**	*Winding 4*
URTD . **WD4 max**	*Winding4 Maximum Value*
URTD . **WD5**	*Winding 5*
URTD . **WD5 max**	*Winding5 Maximum Value*
URTD . **WD6**	*Winding 6*
URTD . **WD6 max**	*Winding6 Maximum Value*
URTD . **MB1**	*Motor Bearing 1*
URTD . **MB1 max**	*Motor Bearing1 Maximum Value*
URTD . **MB2**	*Motor Bearing 2*
URTD . **MB2 max**	*Motor Bearing2 Maximum Value*
URTD . **LB1**	*Load Bearing 1*
URTD . **LB1 max**	*Load Bearing1 Maximum Value*
URTD . **LB2**	*Load Bearing 2*
URTD . **LB2 max**	*Load Bearing2 Maximum Value*
URTD . **Aux1**	*Auxiliary1*
URTD . **Aux1 max**	*Auxiliary1 Maximum Value*
URTD . **Aux2**	*Auxiliary2*
URTD . **Aux2 max**	*Auxiliary2 Maximum Value*
URTD . **RTD Max**	*Maximum temperature of all channels.*
RTD . **Hottest WD**	*The actual value for the hottest winding temperature.*
RTD . **Hottest MB**	*The actual value for the hottest motor bearing temperature.*
RTD . **Hottest LB**	*The actual value for the hottest load bearing temperature.*
RTD . **Hottest Aux**	*The actual value for the hottest Auxiliary temperature.*

1..n, OnOffList

Selection list referenced by parameters:

- ⮡ IEC 61850 . Function

1..n, OnOffList	Description
Inactive	*Inactive*
Active	*Active*

Baud rate

Selection list referenced by parameters:

- ⮡ DNP . Baud rate

Baud rate	Description
1200	*1200*
2400	*2400*
4800	*4800*
9600	*9600*
19200	*19200*
38400	*38400*
57600	*57600*
115200	*115200*

Byte Frame

Selection list referenced by parameters:

- ⮡ DNP . Frame Layout

Byte Frame	Description
8E1	*8 data bits, even parity, 1 stopbit.*
8O1	*8 data bits, odd, 1 stopbit.*
8N1	*8 data bits, no parity, 1 stopbit.*
8N2	*8 data bits, no parity, 2 stopbits.*

Optical rest position

Selection list referenced by parameters:

- ⮡ DNP . Optical rest position

Optical rest position	Description
Light off	*Light off*
Light on	*Light on*

Communication Start Variants

Selection list referenced by parameters:

- ⮡ DNP . DataLink confirm

Communication Start Variants	Description
Never	*Option Never is recommended*
Always	*If this variable is set to Always then LinkLayer needs to establish a connection before sending any Frame.*
On_Large	*If set to On_Large then a connection needs to be established before sending the first Frame of a multi Term Message*

_AL_ResponseType_k

_AL_ResponseType_h

Selection list referenced by parameters:

- ⮡ DNP . AppLink confirm

_AL_ResponseType_k	Description
Never	*Never*
Always	*Always*
Event	*Event*

1..n, Assignment List

Assignment List

Selection list referenced by parameters:

- ⮡ DNP . BinaryCounter 0

1..n, Assignment List	Description
“-”	*No assignment*
Prot . **Fault No.**	*Waveform number*
Prot . **No of Grid Faults**	*Number of grid faults: This is a counter for all faults (i.e. General Pickups »Prot . Pickup«), but except faults during a running cycle of the Automatic Reclosure module (signal »AR . Running«). (Remark: The »Fault No.« counts every new fault independent of AR cycles. This means that for protective devices without AR module these two counters are equivalent.)*
MStart . **StartPerHour**	*StartPerHour*
MStart . **SPH Release**	*In case that the Motor is blocked by a SPH blocking, this timer needs to be expired before the blocking is released and the next motor start is permitted. The next Motor Start will increment the SPH counter again.*
MStart . **ColdStartPermit**	*Number of cold starts remaining*
MStart . **OCNT**	*Motor Operation count since last reset. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*
MStart . **RunTime**	*Motor Operation time since last reset. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*
MStart . **nEmrgOvr**	*Number of emergency overrides since last reset. Resettable with »Sys . Res OperationsCr« or »Sys . Res All«.*
MStart . **TRunTime**	*Motor Operation (Motor run time) time since last reset. Resettable with »Sys . Res TotalCr« or »Sys . Res All«.*
MStart . **TOCS**	*Total Motor Operation count since last reset. Resettable with "Sys. Res TotalCr" or "All". Resettable with »Sys . Res TotalCr« or »Sys . Res All«.*
MStart . **nTRNTrips**	*Number of transition trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*
MStart . **nRevTrips**	*Number of reverse spinning trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*
MStart . **nZSWTrips**	*Number of zero speed switch trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*

1..n, Assignment List	Description
MStart . **nINSQTrips**	*Number of incomplete sequence trips since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*
MStart . **nSPHBlocks**	*Number of start per hour blocks since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*
MStart . **nTBSBlocks**	*Number of time between start blocks since last reset. Resettable with »Sys . Res TripCr« or »Sys . Res All«.*
Sys . **Operating hours Cr**	*Operating hours counter of the protective device*
Sys . **Hours Counter**	*Resettable device operation hours counter. Resettable with »Sys . Res TotalCr« or »Sys . Res All«.*

Scale Factor

Multiplier in order to convert float values into integer.

Selection list referenced by parameters:

- ⮡ DNP . Scale Factor 0

Scale Factor	Description
0.001	*0.001*
0.01	*0.01*
0.1	*0.1*
1	*1*
10	*10*
100	*100*
1000	*1000*
10000	*10000*
100000	*100000*
1000000	*1000000*

Optical rest position

Selection list referenced by parameters:

- ⮡ Modbus . Optical rest position

Optical rest position	Description
Light off	*Light off*
Light on	*Light on*

Port selection

Selection list referenced by parameters:

- ⮡ Modbus . TCP Port Config

Port selection	Description
Default	*Default Port*
Private	*Private Port*

Baud rate

Selection list referenced by parameters:

- ⮡ Modbus . Baud rate

Baud rate	Description
1200	*1200*
2400	*2400*
4800	*4800*
9600	*9600*
19200	*19200*
38400	*38400*

Byte Frame

Selection list referenced by parameters:

- ⮡ Modbus . Physical Settings

Byte Frame	Description
8E1	*8 data bits, even parity, 1 stopbit.*
8O1	*8 data bits, odd, 1 stopbit.*
8N1	*8 data bits, no parity, 1 stopbit.*
8N2	*8 data bits, no parity, 2 stopbits.*

Time Zones

Selection list referenced by parameters:

- ⮡ TimeSync . Time Zones

Time Zones	Description
UTC+14 Kiritimati	*UTC+14 Kiritimati*
UTC+13 Rawaki	*UTC+13 Rawaki*
UTC+12.75 Chatham Island	*UTC+12.75 Chatham Island*
UTC+12 Wellington	*UTC+12 Wellington*
UTC+11.5 Kingston	*UTC+11.5 Kingston*
UTC+11 Port Vila	*UTC+11 Port Vila*
UTC+10.5 Lord Howe Island	*UTC+10.5 Lord Howe Island*
UTC+10 Sydney	*UTC+10 Sydney*
UTC+9.5 Adelaide	*UTC+9.5 Adelaide*
UTC+9 Tokyo	*UTC+9 Tokyo*
UTC+8 Hong Kong	*UTC+8 Hong Kong*
UTC+7 Bangkok	*UTC+7 Bangkok*
UTC+6.5 Rangoon	*UTC+6.5 Rangoon*
UTC+6 Colombo	*UTC+6 Colombo*

Time Zones	Description
UTC+5.75 Kathmandu	*UTC+5.75 Kathmandu*
UTC+5.5 New Delhi	*UTC+5.5 New Delhi*
UTC+5 Islamabad	*UTC+5 Islamabad*
UTC+4.5 Kabul	*UTC+4.5 Kabul*
UTC+4 Abu Dhabi	*UTC+4 Abu Dhabi*
UTC+3.5 Tehran	*UTC+3.5 Tehran*
UTC+3 Moscow	*UTC+3 Moscow*
UTC+2 Athens	*UTC+2 Athens*
UTC+1 Berlin	*UTC+1 Berlin*
UTC+0 London	*UTC+0 London*
UTC-1 Azores	*UTC-1 Azores*
UTC-2 Fern. d. Noronha	*UTC-2 Fern. d. Noronha*
UTC-3 Buenos Aires	*UTC-3 Buenos Aires*
UTC-3.5 St. John’s	*UTC-3.5 St. John’s*
UTC-4 Santiago	*UTC-4 Santiago*
UTC-5 New York	*UTC-5 New York*
UTC-6 Chicago	*UTC-6 Chicago*
UTC-7 Salt Lake City	*UTC-7 Salt Lake City*
UTC-8 Los Angeles	*UTC-8 Los Angeles*
UTC-9 Anchorage	*UTC-9 Anchorage*
UTC-9.5 Taiohae	*UTC-9.5 Taiohae*
UTC-10 Honolulu	*UTC-10 Honolulu*
UTC-11 Midway Islands	*UTC-11 Midway Islands*

Month of clock change

Selection list referenced by parameters:

- ⮡ TimeSync . Summertime m

- ↳ TimeSync . Wintertime m

Month of clock change	Description
January	*January*
February	*February*
March	*March*
April	*April*
May	*May*
June	*June*
July	*July*
August	*August*
September	*September*
October	*October*
November	*November*
December	*December*

Date

Selection list referenced by parameters:

- ↳ TimeSync . Summertime d
- ↳ TimeSync . Wintertime d

Date	Description
Sunday	*Sunday*
Monday	*Monday*
Tuesday	*Tuesday*
Wednesday	*Wednesday*
Thursday	*Thursday*
Friday	*Friday*
Saturday	*Saturday*
General day	*General day: Examples: first day of month, last day of month*

Day of clock change

Day of Time Saving change

Selection list referenced by parameters:

- ⮡ TimeSync . Summertime w
- ⮡ TimeSync . Wintertime w

Day of clock change	Description
First	*First week of the month*
Second	*Second week of the month*
Third	*Third week of the month*
Fourth	*Fourth week of the month*
Last	*Last week of the month*

Used Protocol

Selection list referenced by parameters:

- ⮡ TimeSync . TimeSync

Used Protocol	Description
“-”	-
IRIG-B . **IRIG-B**	*IRIG-B Module*
SNTP . **SNTP**	*SNTP-Module*
Modbus . **Modbus**	*Modbus Protocol*
DNP . **DNP**	*Distributed Network Protocol*

IRIG-B00X

Determination of the Type: IRIG-B00X. IRIG-B types differ in types of included “Coded Expressions” (year, control-functions, straight-binary-seconds).

Selection list referenced by parameters:

- ⮡ IRIG-B . IRIG-B00X

IRIG-B00X	Description
IRIGB-000	*Please refer to: IRIG STANDARD 200-04*
IRIGB-001	*Please refer to: IRIG STANDARD 200-04*
IRIGB-002	*Please refer to: IRIG STANDARD 200-04*
IRIGB-003	*Please refer to: IRIG STANDARD 200-04*
IRIGB-004	*Please refer to: IRIG STANDARD 200-04*
IRIGB-005	*Please refer to: IRIG STANDARD 200-04*
IRIGB-006	*Please refer to: IRIG STANDARD 200-04*
IRIGB-007	*Please refer to: IRIG STANDARD 200-04*

Selection list referenced by parameters:

- ⮡ Sys . DM version

	Description
3.6.a	*Version*

LE1.Gate

Logic gate

Selection list referenced by parameters:

- ⮡ Logic . LE1.Gate

LE1.Gate	Description
AND	*AND Gate*
OR	*OR Gate*
NAND	*NAND Gate*
NOR	*NOR Gate*

Yes/No

Selection list referenced by parameters:

- ⮡ Sys . Reboot
- ⮡ 50P[1] . Alarm only
- ⮡ 50X[1] . Alarm only
- ⮡ 50J[1] . Alarm only
- ⮡ 37[1] . Alarm only
- ⮡ 46[1] . Alarm only
- *[. . .]*

Yes/No	Description
No	*No*
Yes	*Yes*

Used Protocol

Used Communication Protocol

Selection list referenced by parameters:

- ⮡ SCADA . Protocol

Used Protocol	Description
“-”	*Do not use*
Modbus RTU	*Modbus Protocol RTU*
Modbus TCP	*Modbus Protocol TCP*
Modbus TCP/RTU	*Modbus Protocol TCP/RTU*
DNP RTU	*Distributed Network Protocol RTU*
DNP TCP	*Distributed Network Protocol TCP*
DNP UDP	*Distributed Network Protocol UDP*
IEC 61850	*IEC 61850 communication*

Used Protocol	Description
Profibus	*Profibus Module*

Mode

General Operation Mode

Selection list referenced by parameters:

- ⮡ IRIG-B . Mode

Mode	Description
“-”	*Do not use*
Use	*Use*

Mode

General Operation Mode

Selection list referenced by parameters:

- ⮡ SNTP . Mode

Mode	Description
“-”	*Do not use*
Use	*Use*

No of Equations:

Number of required Logic Equations:

Selection list referenced by parameters:

- ⮡ Logic . No of Equations:

No of Equations:	Description
0	*0*
5	*5*
10	*10*
20	*20*
40	*40*
80	*80*

Mode

General Operation Mode

Selection list referenced by parameters:

- ⮡ Sgen . Mode

Mode	Description
“-”	*Do not use*
Use	*Use*

Mode

General Operation Mode

Selection list referenced by parameters:

- ⮡ RO-3AI X2 . Disarm Mode
- ⮡ RO-3AI X2 . Force Mode

Mode	Description
Permanent	*Permanent*
Timeout	*Timeout*

Active/Inactive

Selection list referenced by parameters:

- ⮡ RO-3AI X2 . DISARMED

Active/Inactive	Description
Inactive	*Inactive*
Active	*Active*

Relay operating modes

Selection list referenced by parameters:

- ⮡ RO-3AI X2 . Force all Outs
- ⮡ RO-3AI X2 . Force RO1

Relay operating modes	Description
Normal	*Normal*
De-Energized	*De-Energized*
Energized	*Energized*

Mode

General Operation Mode

Selection list referenced by parameters:

- ⮡ URTD . Force Mode

Mode	Description
Permanent	*Permanent*
Timeout	*Timeout*

Active/Inactive

Selection list referenced by parameters:

- ⮡ URTD . Function

Active/Inactive	Description
Inactive	*Inactive*
Active	*Active*

Disarm

Selection list referenced by parameters:

- ⮡ AnOut . Force Mode

Disarm	Description
Permanent	*Permanent*
Timeout	*Timeout*

Active

Selection list referenced by parameters:

- ⮡ AnOut . Function

Active	Description
Inactive	*Inactive*
Active	*Active*

State

Selection list referenced by parameters:

- ⮡ Sgen . State

State	Description
Off	*Off*
PreFault	*Pre Fault Duration*
FaultSimulation	*Duration of Fault Simulation*
PostFault	*Post Fault Duration*
Init Res	*Init Reset*

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Instruction Leaflet MN026012EN

EMR-3MP0

Effective 2021-02-16

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