Switchgear
Technical Data
TD280014EN

Effective July 2015
Supersedes R280-90-17 8/2012

COOPER POWER
SERIES

Communications Point Data Base

for MODBUS Protocol

For use with Eaton's Cooper Power series
Form 6 Recloser Control

Powering Business Worldwide

Form 6 Modbus Map Points

July 9, 2015 3.00

Document	Date	Description
1.00	5/8/2001	Initial release.
1.01	5/15/2001	Changed status input 54 to "Reclose Retry Enable"; added HLT source indication to status input map
1.02	5/30/2001	Changed wording on SGF "enable" to "block". Made hot line tag coils self-resetting.
1.03	5/8/2002	Changed status input 58 to "CCI: Control Circuit Interrupted".
1.04	5/29/2002	Added Modbus register naming explanation to cover page.
1.05	5/12/2003	Reworded Modbus register numbering explanation.
1.06	8/29/2003	Added coil descriptions for 18 & 19, fixed descriptions for status registers 10058 thru 10061
1.07	3/15/2004	Added Triple-Single Information, Supervisory Enable Status, and Minor Edits
1.08	7/26/2005	Corrected the descriptions for the Triple-Single Coils 20 through 23.
1.09	10/28/2005	Minor edits in the Status (Standard) and Status (Triple-Single) tabs.
2.00	8/24/2012	Updates and re-release for ProView 5.0
3.00	7/9/2015	Updates and re-release for ProView 5.1

Modbus Register Numbering Convention

Modbus data points consist of 4 main types: coils, status, input registers, and holding registers.
The numbering convention refers to the individual data points by prefixing their addresses so that
when looking at a number for a given point the user would know which type of data point was being referenced.

For example:
Coils do not have a prefix and so are referred to by their register number 1 through XXX.
Status registers are prefixed with 1X,XXX so they would fall in the range 10,001 through 1X,XXX.
Input registers are prefixed with 3X,XXX so they are in the range 30,001 to 3X,XXX.
Holding registers use a prefix of 4X,XXX so they are numbered between 40,001 and 4X,XXX.

These prefixes are automatically dropped in the actual low level messages and all data points are zero referenced.
When configuring master software to access these data points, care must be taken to address the registers
correctly, i.e. if the software used does not automatically remove the prefix, be certain only the register
portion of the address is used.

Data type	Range	Read func.	Write func.
Coils	1 through XXX	01	05
Status	10,001 through 1X,XXX	02	N/A
Input	30,001 through 3X,XXX	04	N/A
Holding	40,001 through 4X,XXX	03	06

Note: The Form 6 does not have any Holding Registers defined.

INPUT SUBSYSTEM

Status Registers

Description	Register	Hex Register
Recloser Closed	10001	2711
Recloser Open	10002	2712
Control is Locked Out	10003	2713
Control OK	10004	2714
Any Control or System Alarm	10005	2715
Above Minimum Trip	10006	2716
Supervisory Off	10007	2717
Non-Reclosing	10008	2718
Ground Trip Blocked	10009	2719
SEF Blocked	10010	271A
CLPU Blocked	10011	271B
Fast Trips Blocked	10012	271C
Profile Selected (Normal)	10013	271D
Profile Selected (Alt1)	10014	271E
Profile Selected (Alt2)	10015	271F
Profile Selected (Alt3)	10016	2720
Hot Line Tag	10017	2721
Bus Voltage Present (Phase A)	10018	2722
Bus Voltage Present (Phase B)	10019	2723
Bus Voltage Present (Phase C)	10020	2724
A Phase Fault Trip	10021	2725
B Phase Fault Trip	10022	2726
C Phase Fault Trip	10023	2727
Ground Fault Trip	10024	2728
SEF Trip	10025	2729
Reverse Power Flow	10026	272A
Battery Test in Progress	10027	272B
No AC Power	10028	272C
Battery Alarm	10029	272D
ci1:RTrip (TB1:3-4)	10030	272E
ci2:SClose (TB1:5-6)	10031	272F
ci3:STrip (TB1:7-8)	10032	2730
ci4:GTB (TB3:1-2)	10033	2731
ci5:NRecl (TB3:3-4)	10034	2732
ci6:TargR (TB3:5-6)	10035	2733
ci7 (TB3:7-8)	10036	2734
ci8:Alt1 (TB3:9-10)	10037	2735
ci9:Alt2 (TB3:11-12)	10038	2736
ci10:Alt3 (TB3:13-14)	10039	2737
ci11:Nrml (TB3:15-16)	10040	2738
co1:aux (TB1:11-12,13)	10041	2739

INPUT SUBSYSTEM

Status Registers

Description	Register	Hex Register
co2:ok (TB1:14-15)	10042	273A
co3:hlt (TB1:16-17)	10043	273B
co4:gtb (TB1:18-19)	10044	273C
ss1:lo (TB1:9-10)	10045	273D
co5:nr (TB3:17-18)	10046	273E
co6:alm (TB3:19-20,21)	10047	273F
co7:nrm (TB4:1-2)	10048	2740
co8:alt1 (TB4:3-4)	10049	2741
co9:alt2 (TB4:5-6)	10050	2742
co10:alt3 (TB4:7-8)	10051	2743
co11:frq (TB4:9-10)	10052	2744
co12:vlt (TB4:11-12,13)	10053	2745
Reclose Retry Enabled	10054	2746
Hot Line Tag On from Workbench	10055	2747
Hot Line Tag On from Communications	10056	2748
Hot Line Tag On from Front Panel Switch	10057	2749
Phase Overcurrent Alarm	10058	274A
Ground Overcurrent Alarm	10059	274B
Negative Sequence Overcurrent Alarm	10060	274C
Control Circuit Interrupted	10061	274D
USEF Blocked	10062	274E
Profile Selected (Alt4)	10063	274F
Profile Selected (Alt5)	10064	2750

INPUT SUBSYSTEM

Status Registers (Triple-Single)

Description	Register	Hex Register
Recloser Closed	10001	2711
Recloser Open	10002	2712
Control is Locked Out	10003	2713
Control OK	10004	2714
Any Control or System Alarm	10005	2715
Above Minimum Trip	10006	2716
Supervisory Off	10007	2717
Non-Reclosing	10008	2718
Ground Trip Blocked	10009	2719
SEF Blocked	10010	271A
CLPU Blocked	10011	271B
Fast Trips Blocked	10012	271C
Profile Selected (Normal)	10013	271D
Profile Selected (Alt1)	10014	271E
Profile Selected (Alt2)	10015	271F
Profile Selected (Alt3)	10016	2720
Hot Line Tag	10017	2721
Bus Voltage Present (Phase A)	10018	2722
Bus Voltage Present (Phase B)	10019	2723
Bus Voltage Present (Phase C)	10020	2724
A Phase Fault Trip	10021	2725
B Phase Fault Trip	10022	2726
C Phase Fault Trip	10023	2727
Ground Fault Trip	10024	2728
SEF Trip	10025	2729
Reverse Power Flow	10026	272A
Battery Test in Progress	10027	272B
No AC Power	10028	272C
Battery Alarm	10029	272D
ci1:RTrip (TB1:3-4)	10030	272E
ci2:SClose (TB1:5-6)	10031	272F
ci3:STrip (TB1:7-8)	10032	2730
ci4:GTB (TB3:1-2)	10033	2731
ci5:NRecl (TB3:3-4)	10034	2732
ci6:TargR (TB3:5-6)	10035	2733
ci7 (TB3:7-8)	10036	2734
ci8:Alt1 (TB3:9-10)	10037	2735
ci9:Alt2 (TB3:11-12)	10038	2736
ci10:Alt3 (TB3:13-14)	10039	2737
ci11:Nrml (TB3:15-16)	10040	2738
co1:aux (TB1:11-12,13)	10041	2739

INPUT SUBSYSTEM

Status Registers (Triple-Single)

Description	Register	Hex Register
co2:ok (TB1:14-15)	10042	273A
co3:hlt (TB1:16-17)	10043	273B
co4:gtb (TB1:18-19)	10044	273C
ss1:lo (TB1:9-10)	10045	273D
co5:nr (TB3:17-18)	10046	273E
co6:alm (TB3:19-20,21)	10047	273F
co7:nrm (TB4:1-2)	10048	2740
co8:alt1 (TB4:3-4)	10049	2741
co9:alt2 (TB4:5-6)	10050	2742
co10:alt3 (TB4:7-8)	10051	2743
co11:frq (TB4:9-10)	10052	2744
co12:vlt (TB4:11-12,13)	10053	2745
Reclose Retry Enabled	10054	2746
Hot Line Tag On from Workbench	10055	2747
Hot Line Tag On from Communications	10056	2748
Hot Line Tag On from Front Panel Switch	10057	2749
Phase A Overcurrent Alarm	10058	274A
Ground Overcurrent Alarm	10059	274B
Negative Sequence Overcurrent Alarm	10060	274C
Control Circuit Interrupted (Phase A)	10061	274D
Recloser Closed (Phase B)	10062	274E
Recloser Open (Phase B)	10063	274F
Control is Locked Out (Phase B)	10064	2750
Control Circuit Interrupted (Phase B)	10065	2751
Recloser Closed (Phase C)	10066	2752
Recloser Open (Phase C)	10067	2753
Control is Locked Out (Phase C)	10068	2754
Control Circuit Interrupted (Phase C)	10069	2755
Phase B Overcurrent Alarm	10070	2756
Phase C Overcurrent Alarm	10071	2757
Ganged Mode	10072	2758
1-3 Mode	10073	2759
1-1 Mode	10074	275A
USEF Blocked	10075	275B
Profile Selected (Alt4)	10076	275C
Profile Selected (Alt5)	10077	275D
Reserved	10078	275E
Reserved	10079	275F
Reserved	10080	2760

INPUT SUBSYSTEM

Input Registers

Description	Register	Hex Register	Division Scale Factor	Units
Reserved	30001	7531		
Reserved	30002	7532		
Reserved	30003	7533		
Reserved	30004	7534		
Reserved	30005	7535		
Reserved	30006	7536		
Reserved	30007	7537		
Reserved	30008	7538		
Reserved	30009	7539		
Reserved	30010	753A		
A Phase Primary Current Magnitude	30011	753B	10	Amps
B Phase Primary Current Magnitude	30012	753C	10	Amps
C Phase Primary Current Magnitude	30013	753D	10	Amps
3I0 Primary Current Magnitude	30014	753E	10	Amps
A Phase Primary Voltage Magnitude	30015	753F	1	Volts
B Phase Primary Voltage Magnitude	30016	7540	1	Volts
C Phase Primary Voltage Magnitude	30017	7541	1	Volts
A Phase Power Factor	30018	7542	10000	
B Phase Power Factor	30019	7543	10000	
C Phase Power Factor	30020	7544	10000	
A Phase Primary Apparent Power	30021	7545	1	kVA
B Phase Primary Apparent Power	30022	7546	1	kVA
C Phase Primary Apparent Power	30023	7547	1	kVA
A Phase Primary Real Power	30024	7548	1	kW
B Phase Primary Real Power	30025	7549	1	kW
C Phase Primary Real Power	30026	754A	1	kW
A Phase Primary Reactive Power	30027	754B	1	kvar
B Phase Primary Reactive Power	30028	754C	1	kvar
C Phase Primary Reactive Power	30029	754D	1	kvar
Line Frequency	30030	754E	100	Hz
A Phase Primary Demand Currents	30031	754F	10	Amps
B Phase Primary Demand Currents	30032	7550	10	Amps
C Phase Primary Demand Currents	30033	7551	10	Amps

INPUT SUBSYSTEM

Input Registers

Description	Register	Hex Register	Division Scale Factor	Units
Battery Voltage	30034	7552	100	Volts
Battery Current	30035	7553	1000	Amps
Target Counter (Phase A)	30036	7554	1	(count)
Target Counter (Phase B)	30037	7555	1	(count)
Target Counter (Phase C)	30038	7556	1	(count)
Target Counter (Ground)	30039	7557	1	(count)
Target Counter (SEF)	30040	7558	1	(count)
Total Trip Counter	30041	7559	1	(count)
Reserved	30042	755A		
Reserved	30043	755B		
Reserved	30044	755C		
Reserved	30045	755D		
Reserved	30046	755E		

INPUT SUBSYSTEM

Input Registers (Triple-Single)

Description	Register	Hex Register	Division Scale Factor	Units
Reserved	30001	7531		
Reserved	30002	7532		
Reserved	30003	7533		
Reserved	30004	7534		
Reserved	30005	7535		
Reserved	30006	7536		
Reserved	30007	7537		
Reserved	30008	7538		
Reserved	30009	7539		
Reserved	30010	753A		
A Phase Primary Current Magnitude	30011	753B	10	Amps
B Phase Primary Current Magnitude	30012	753C	10	Amps
C Phase Primary Current Magnitude	30013	753D	10	Amps
3I0 Primary Current Magnitude	30014	753E	10	Amps
A Phase Primary Voltage Magnitude	30015	753F	1	Volts
B Phase Primary Voltage Magnitude	30016	7540	1	Volts
C Phase Primary Voltage Magnitude	30017	7541	1	Volts
A Phase Power Factor	30018	7542	10000	
B Phase Power Factor	30019	7543	10000	
C Phase Power Factor	30020	7544	10000	
A Phase Primary Apparent Power	30021	7545	1	kVA
B Phase Primary Apparent Power	30022	7546	1	kVA
C Phase Primary Apparent Power	30023	7547	1	kVA
A Phase Primary Real Power	30024	7548	1	kW
B Phase Primary Real Power	30025	7549	1	kW
C Phase Primary Real Power	30026	754A	1	kW
A Phase Primary Reactive Power	30027	754B	1	kvar
B Phase Primary Reactive Power	30028	754C	1	kvar
C Phase Primary Reactive Power	30029	754D	1	kvar
Line Frequency	30030	754E	100	Hz
A Phase Primary Demand Currents	30031	754F	10	Amps
B Phase Primary Demand Currents	30032	7550	10	Amps
C Phase Primary Demand Currents	30033	7551	10	Amps

INPUT SUBSYSTEM

Input Registers (Triple-Single)

Description	Register	Hex Register	Division Scale Factor	Units
Battery Voltage	30034	7552	100	Volts
Battery Current	30035	7553	1000	Amps
Target Counter (Phase A)	30036	7554	1	(count)
Target Counter (Phase B)	30037	7555	1	(count)
Target Counter (Phase C)	30038	7556	1	(count)
Target Counter (Ground)	30039	7557	1	(count)
Target Counter (SEF)	30040	7558	1	(count)
Total Trip Counter	30041	7559	1	(count)
Trip Counter (Phase A)	30042	755A	1	(count)
Trip Counter (Phase B)	30043	755B	1	(count)
Trip Counter (Phase C)	30044	755C	1	(count)
Reserved	30045	755D		
Reserved	30046	755E		
Reserved	30047	755F		
Reserved	30048	7560		
Reserved	30049	7561		
Reserved	30050	7562		
Reserved	30051	7563		
Reserved	30052	7564		
Reserved	30053	7565		
Reserved	30054	7566		

OUTPUT SUBSYSTEM

Coils

Description	Register	Hex Register	Conditioned by Supervisory State (Factory Default)
* Close Mechanism	01	01	Yes
* Trip Mechanism	02	02	Yes
Block Reclosing	03	03	Yes
Block Ground Trip	04	04	Yes
Block SEF	05	05	Yes
Block CLPU	06	06	Yes
Block Fast Trips	07	07	Yes
* Profile - Normal	08	08	Yes
* Profile - Alt1	09	09	Yes
* Profile - Alt2	10	0A	Yes
* Profile - Alt3	11	0B	Yes
* Reset Targets	12	0C	Yes
* Reset Demand Meters	13	0D	Yes
* Reset Alarms	14	0E	Yes
* Test Battery	15	0F	Yes
* Hot Line Tag Set	16	10	No
* Hot Line Tag Reset	17	11	Yes
Enable Reclose Retry	18	12	Yes
Enable Sync Check	19	13	Yes
Block USEF	20	14	Yes
* Profile - Alt4	21	15	Yes
* Profile - Alt5	22	16	Yes
User Defined	23	17	Yes
User Defined	24	18	Yes
User Defined	25	19	Yes
User Defined	26	1A	Yes
User Defined	27	1B	Yes
User Defined	28	1C	Yes
User Defined	29	1D	Yes
User Defined	30	1E	Yes
User Defined	31	1F	Yes
User Defined	32	20	Yes
Reserved	33	21	--
Reserved	34	22	--
Reserved	35	23	--
Reserved	36	24	--

* Momentary/Self Resetting

Crosshatch indicates point is supervised regardless of setting

OUTPUT SUBSYSTEM

Coils (Triple-Single)

Description	Register	Hex Register	Conditioned by Supervisory State (Factory Default)
* Close Mechanism	01	01	Yes
* Trip Mechanism	02	02	Yes
Block Reclosing	03	03	Yes
Block Ground Trip	04	04	Yes
Block SEF	05	05	Yes
Block CLPU	06	06	Yes
Block Fast Trips	07	07	Yes
* Profile - Normal	08	08	Yes
* Profile - Alt1	09	09	Yes
* Profile - Alt2	10	0A	Yes
* Profile - Alt3	11	0B	Yes
* Reset Targets	12	0C	Yes
* Reset Demand Meters	13	0D	Yes
* Reset Alarms	14	0E	Yes
* Test Battery	15	0F	Yes
* Hot Line Tag Set	16	10	No
* Hot Line Tag Reset	17	11	Yes
Enable Reclose Retry	18	12	Yes
Enable Sync Check	19	13	Yes
* Trip Mechanism (Phase B)	20	14	Yes
* Trip Mechanism (Phase C)	21	15	Yes
* Close Mechanism (Phase B)	22	16	Yes
* Close Mechanism (Phase C)	23	17	Yes
* Activate Ganged Mode	24	18	Yes
* Activate 1-3 Mode	25	19	Yes
* Activate 1-1 Mode	26	1A	Yes
* Trip All Phases	27	1B	Yes
* Close All Phases	28	1C	Yes
User Defined	29	1D	Yes
User Defined	30	1E	Yes
User Defined	31	1F	Yes
User Defined	32	20	Yes
Block USEF	33	21	Yes
* Profile - Alt4	34	22	Yes
* Profile - Alt5	35	23	Yes
Reserved	36	24	--

* Momentary/Self Resetting

Crosshatch indicates point is supervised regardless of setting

Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

Eaton's Cooper Power Systems Division
2300 Badger Drive
Waukesha, WI 53188
United States
Eaton.com/cooperpowerseries

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For Eaton's Cooper Power series Form 6 recloser control information call 1-877-277-4636 or visit: www.eaton.com/cooperpowerseries.

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