



LMR Plus Electric Fire Pump Controllers - Modbus Communications

Modbus Configuration Instructions

OVERVIEW

Eaton's LMR Plus electric fire pump controllers communicate to systems using the Regular level of Modbus (includes both RTU and ASCII transmission modes).

Communication settings are user configurable through the LMR Plus configuration menu. Present LMR Plus values can be read over the implemented Modbus serial channel. Requests to the LMR Plus to write data over the implemented Modbus serial channel are not accepted.

MODBUS CONFIGURATION

The following parameters can be changed and supported within the LMR Plus.

Modbus Transmission Mode

The LMR Plus supports Modbus RTU and ASCII transmission modes. The user can select the mode required for their system from the LMR Plus configuration menu.

Baud Rate

Communication Baud rates of 19,200 bps or 9600 bps can be selected.

Parity

Parity is selectable as EVEN, ODD or NONE.

Address

The LMR Plus must be set as a Slave unit within the Modbus system. It cannot be used as a Modbus master. Selectable address range is (1-247).

MODBUS ADDRESSING

Input Registers - Function Code 4

When the register addresses below are accessed by a Modbus master device, the LMR Plus input registers will provide register content values to the master.

LMR Plus Input Registers	Register Address
SYSTEM PRESSURE	0x0000
VOLTAGE PHASE A	0x0001
VOLTAGE PHASE B	0x0002
VOLTAGE PHASE C	0x0003
CURRENT PHASE A	0x0004
CURRENT PHASE B	0x0005
CURRENT PHASE C	0x0006
FREQUENCY	0x0007
RUN PERIOD TIMER TIME	0x0008
SEQUENTIAL START TIMER TIME	0x0009
WEEKLY TEST TIMER TIME	0x000A

MODBUS ADDRESSING

Input Registers - Function Code 2

When the discrete addresses below are accessed by a Modbus master device, the LMR Plus discrete input registers will provide register content values to the master.

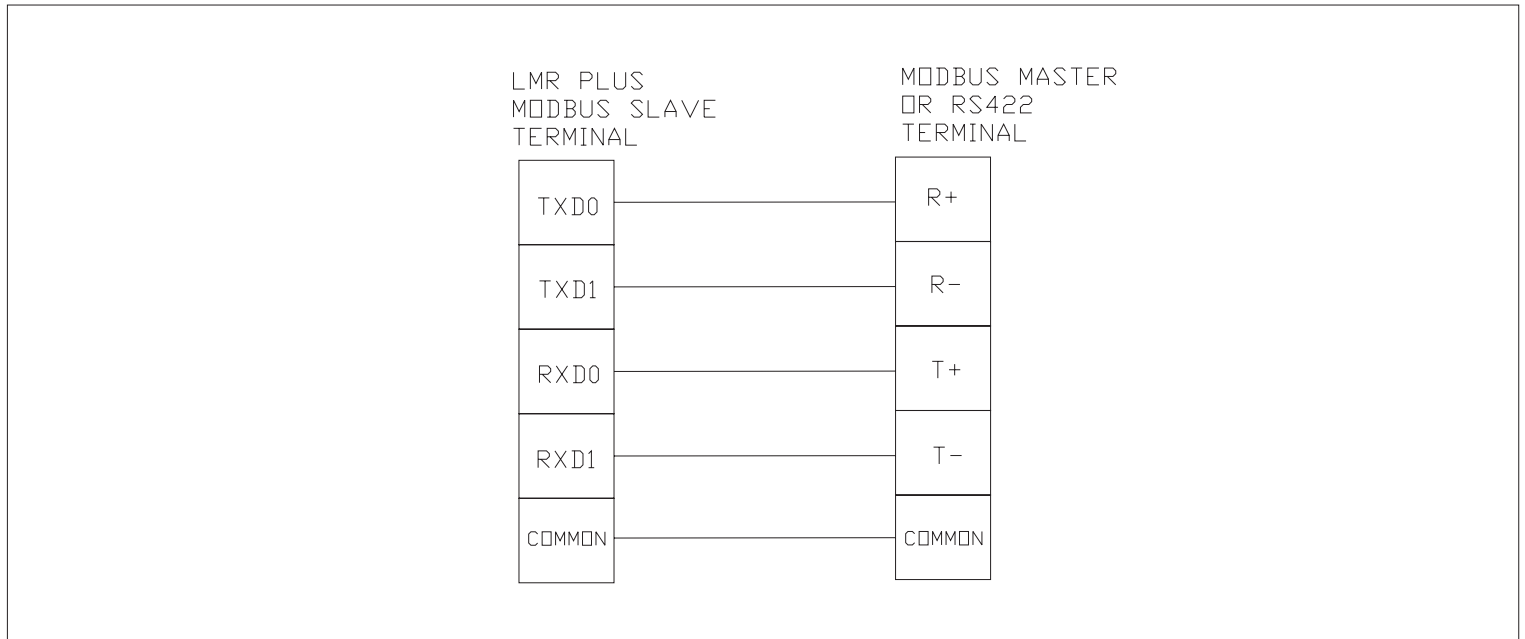
LMR Plus Discrete Inputs	Discrete Address
POWER ON	0x0000
PUMP RUNNING	0x0001
LOCAL START	0x0002
REMOTE START	0x0003
DELUGE VALVE	0x0004
EMERGENCY START	0x0005
LOW PRESSURE ALARM	0x0006
HIGH PRESSURE ALARM	0x0007
INTERLOCK ON	0x0008
PHASE REVERSAL	0x0009
PHASE FAILURE	0x000A
FAIL TO START	0x000B
FAIL TO STOP	0x000C
UNDER VOLTAGE	0x000D
OVER VOLTAGE	0x000E
UNDER FREQUENCY	0x000F
OVER FREQUENCY	0x0010
LOW ROOM TEMPERATURE	0x0011
LOCKED ROTOR TRIP	0x0012
LOW SUCTION PRESSURE	0x0013
PRESSURE TRANSMITTER FAILURE	0x0014
BATTERY BACKUP LOW	0x0015
COMMON ALARM	0x0016
TRANSFER SWITCH IN NORMAL	0x0017
TRANSFER SWITCH IN EMERGENCY	0x0018
RUN PERIOD TIMER ACTIVE	0x0019
SEQUENTIAL START TIMER ACTIVE	0x001A
WEEKLY TEST TIMER ACTIVE	0x001B
CUSTOM INPUT # 1	0x001C
CUSTOM INPUT # 2	0x001D
CUSTOM INPUT # 3	0x001E
CUSTOM INPUT # 4	0x001F
CUSTOM INPUT # 5	0x0020
CUSTOM INPUT # 6	0x0021
CUSTOM INPUT # 7	0x0022
CUSTOM INPUT # 8	0x0023
CUSTOM INPUT # 9	0x0024
FUTURE RELAY	0x0025
OPTIONAL RELAY# 1	0x0026
OPTIONAL RELAY# 2	0x0027
OPTIONAL RELAY# 3	0x0028
OPTIONAL RELAY# 4	0x0029
OPTIONAL RELAY# 5	0x002A
OPTIONAL RELAY# 6	0x002B
OPTIONAL RELAY# 7	0x002C
OPTIONAL RELAY# 8	0x002D

As of February 1, 2008 - all LMR Plus controllers will have MODBUS communication capability. Contact the factory for information on converting controllers built prior to this date.

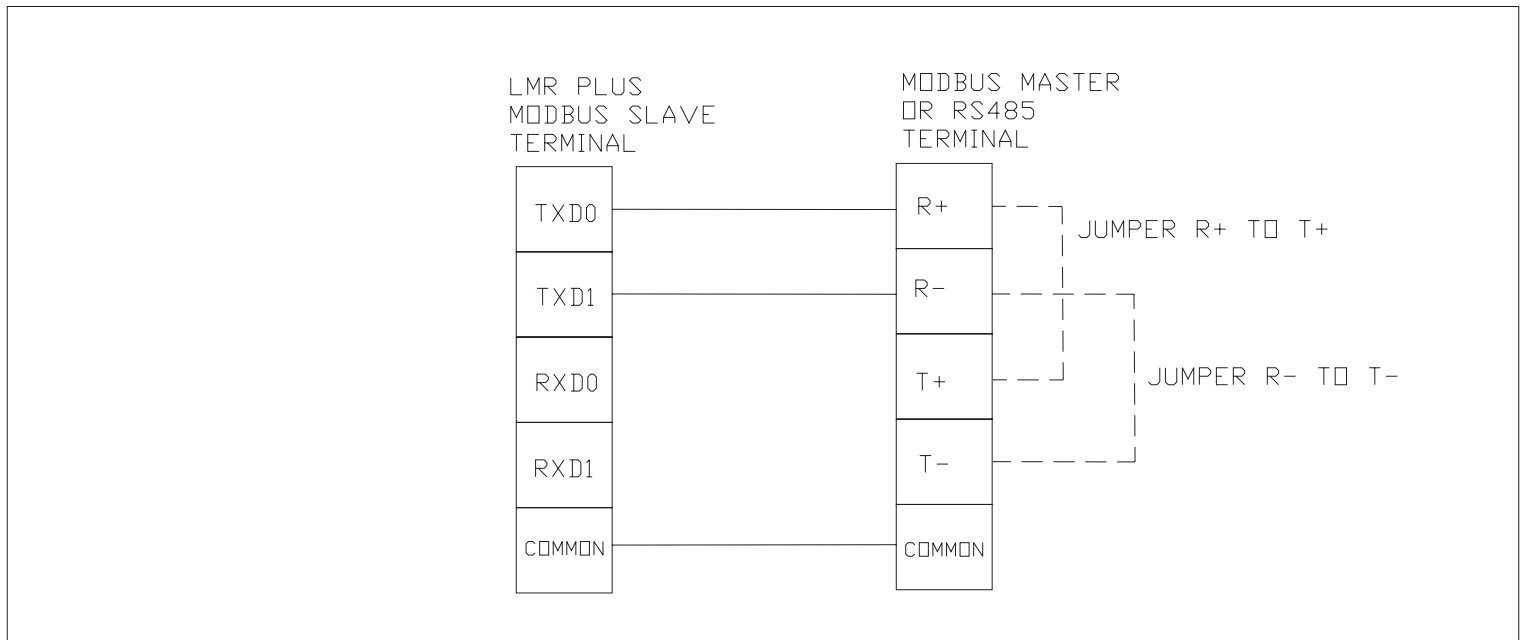
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Modbus Configuration Instructions

Wiring Configuration - Four-Wire MODBUS System



Wiring Configuration - Two-Wire MODBUS System



NOTE:
Twisted Pair wire is recommended. Short runs can be 24 gauge wire, unshielded. However, longer runs (+100ft) should use shielded cable. Shielded twisted pair should also be used if electrical noise is present, from motors, relays, etc.