Modbus Communications
Diesel Plus Fire Pump Controllers

OVERVIEW

Eaton's DIESEL Plus 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 DIESEL Plus configuration menu. Present DIESEL Plus values can be read over the implemented Modbus serial channel. Requests to the DIESEL 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 DIESEL Plus.

Modbus Transmission Mode

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

Baud Rate

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

Parity

Parity is selectable as EVEN, ODD or NONE.

Address

The DIESEL 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).

Diesel Plus Input Registers	Register Address
SYSTEM MODE (MANUAL/AUTO/OFF)	0x0000
SYSTEM PRESSURE	0x0001
ENGINE SPEED	0x0002
COOLANT TEMPERATURE	0x0003
ENGINE OIL PRESSURE	0x0004
BATTERY #1 VOLTAGE	0x0005
BATTERY #2 VOLTAGE	0x0006
BATTERY #1 CURRENT	0x0007
BATTERY #2 CURRENT	0x0008
AC FAILURE TIMER COUNT	0x0009
RUN PERIOD TIMR COUNT	0x000A
SEQUENTIAL START TIMER COUNT	0x000B
WEEKLY TEST TIMER COUNT	0x000C

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MODBUS ADDRESSING

Input Registers - Function Code 2

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

Diesel Plus Discrete Inputs	Discrete Address
POWER ON	0x0000
ENGINE RUN	0x0001
OFF MODE	0x0002
LOW FUEL	0x0003
LOCAL START (MANUAL CRANK)	0x0004
REMOTE START	0x0005
AUTO MODE	0x0006
MANUAL MODE	0x0007
DELUGE START	0x0008
LOW PRESSURE ALARM	0x0009
HIGH PRESSURE ALARM	0x000A
INTERLOCK ON	0x000B
FAIL TO START	0x000C
CRANKING BATTERY #1	0x000D
CRANKING BATTERY #2	0x000E
OVERSPEED SHUTDOWN	0x000F
LOW OIL PRESSURE	0x0010
LOW ROOM TEMPERATURE	0x0011
LOW SUCTION PRESSURE	0x0012
PRESSURE TRANSDUCER FAILURE	0x0013
COMMON ALARM	0x0014
RUN PERIOD TIMER ACTIVE	0x0015
SEQUENTIAL START TIMER ACTIVE	0x0016
WEEKLY TEST TIMER ACTIVE	0x0017
WEEKLY TEST START	0x0018
HIGH ENGINE TEMPERATURE	0x0019
SPEED SWITCH MALFUNCTION	0x001A
FUEL STOP	0x001B
ENGINE TEST START	0x001C
AC FAILURE	0x001D
AC FAILURE START	0x001E
ECM IN ALTERNATE	0x001F
FUEL INJECTOR FAIL	0x0020
BATTERY #1 FAILURE	0x0021
BATTERY #2 FAILURE	0x0022
CHARGER #1 FAILURE	0x0023
CHARGER #2 FAILURE	0x0024
CUSTOM INPUT #1	0x0025
CUSTOM INPUT #2	0x0026
CUSTOM INPUT #3	0x0027
CUSTOM INPUT #4	0x0028
CUSTOM INPUT #5	0x0029
CUSTOM INPUT #6	0x002A
CUSTOM INPUT #7	0x002B
CUSTOM INPUT #8	0x002C
CUSTOM INPUT #9	0x002D
FUTURE RELAY #1	0x002E
FUTURE RELAY #2	0x002F
OPTION RELAY #1	0x0030
OPTION RELAY #2	0x0031
OPTION RELAY #3	0x0032
OPTION RELAY #4	0x0033
OPTION RELAY #5	0x0034
OPTION RELAY #6	0x0035
OPTION RELAY #7	0x0036
OPTION RELAY #8	0x0037
ENGINE TROUBLE	0x0038

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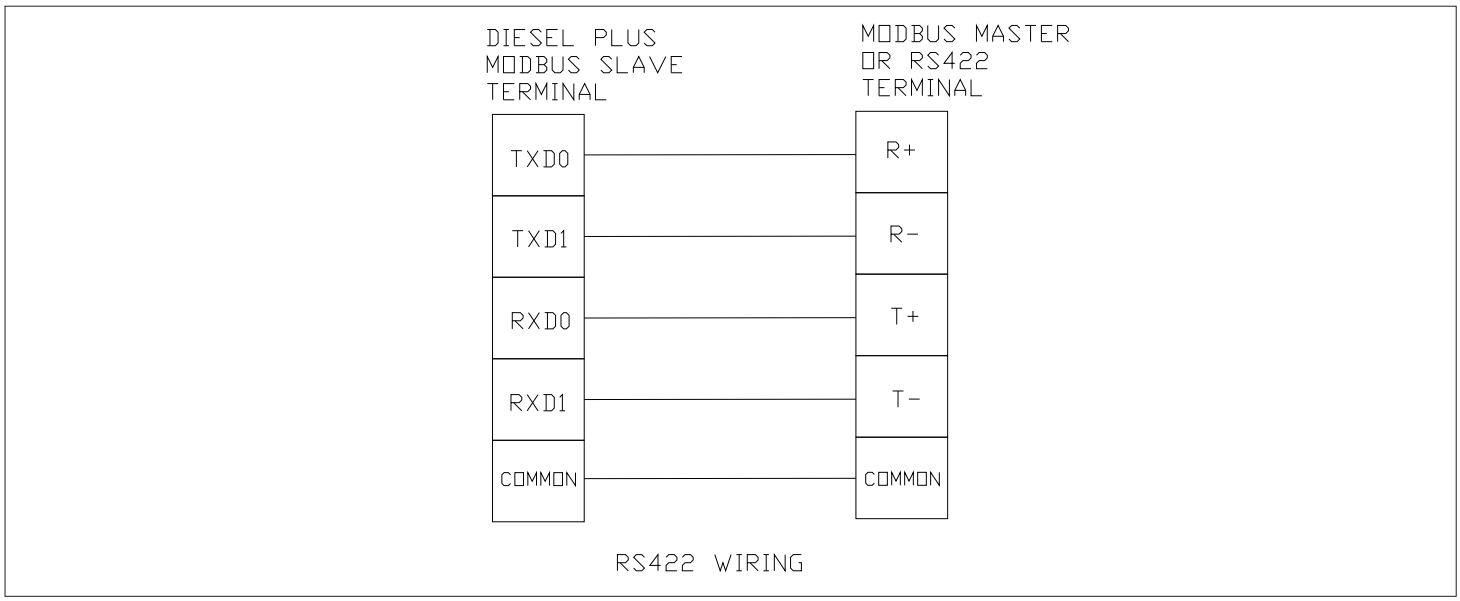
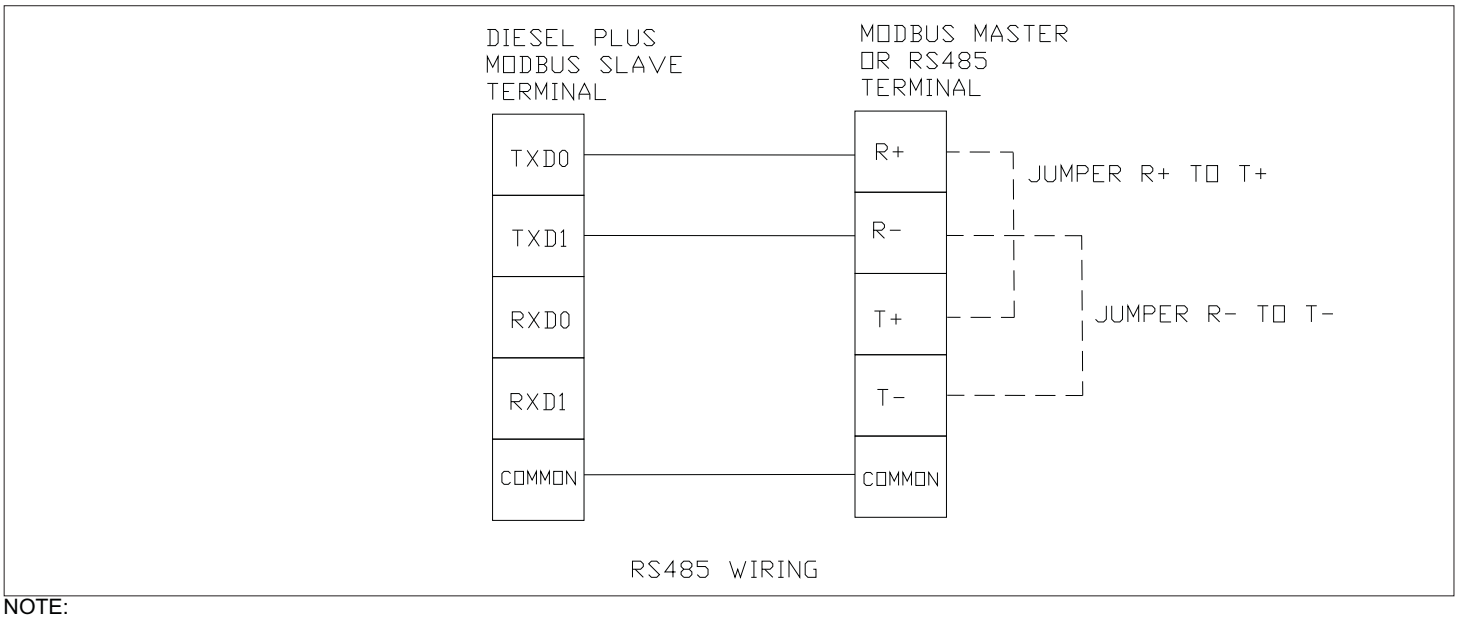
Wiring Configuration - Four-Wire MODBUS System



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 engines, relays, etc.

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