

# ML1000 TYPICAL APPLICATION DRAWING (FOR REFERENCE ONLY)

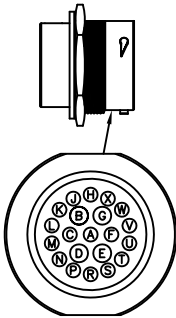
DRAWING SHOWN BELOW IS TYPICAL USAGE ONLY, INPUTS AND OUTPUTS CAN BE CONFIGURED BY THE USER FOR MULTIPLE APPLICATIONS. SEE MPC-10 OPERATIONS MANUAL FOR DETAILS.

## ENGINE CONNECTOR

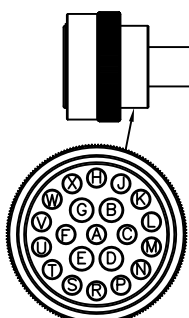
- [V] CAN HI
- [U] CAN LO
- [E] BATT (-) 14 GA.
- [B] BATT (+) 14 GA.
- [D] RLY1 (START SOL) 14 GA.
- [G] RLY2 (FUEL/EQU) 14 GA.
- [J] (ALT EXCITE)
- [Y] FREQ INPUT
- [S] DO2 (THROTTLE INC)
- [R] DO1 (THROTTLE DEC)
- [W] AI2 (COOLANT TEMP. SENDER)
- [X] AI1 (OIL PRESSURE, SENDER)

CAN HI  
CAN LO

ENGINE ECU  
REFER TO ENGINE  
MANUFACTURER  
DOCUMENTATION



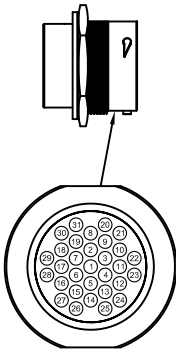
21 POSITION CONNECTOR  
DEUTSCH: HDP24-24-21PF  
FW MURPHY: 00-00-7681



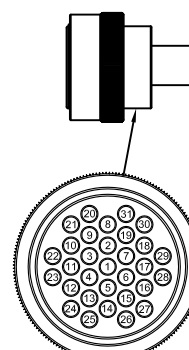
21 POSITION CONNECTOR  
DEUTSCH: HDP26-24-21SE  
FW MURPHY: 00-00-8788

ML1000  
CONNECTORS  
PANEL SIDE

ML1000  
CONNECTORS  
HARNESS SIDE



31 POSITION CONNECTOR  
DEUTSCH: HDP24-24-31PE  
FW MURPHY: 00-00-9286



31 POSITION CONNECTOR  
DEUTSCH: HDP26-24-31SE  
FW MURPHY: 00-00-9287

## I/O CONNECTOR

- [9] AI3 (DISCHARGE PRESSURE, 4-20MA)
- [1] SENDER RETURN TRANSDUCER (+)
- [27] SENDER COMMON (-)
- [19] RLY3, N.O. (CLUTCH N.O.)
- [18] RLY3, N.C. (CLUTCH N.C.)
- [17] RLY3, COM (CLUTCH COMMON)
- [23] DI2 (FLOAT START, SWITCH)
- [14] DI3 (FLOAT STOP, SWITCH)
- [21] DI1 (AUX)
- [29] DI4 (LOW COOLANT LEVEL, SWITCH)
- [20] DI5 (LOW LUBE OIL LEVEL, SWITCH)
- [13] DO1, HS, 2A (MANUAL MODE LAMP)
- [24] DO2, HS, 2A (ENGINE RUNNING LAMP)
- [30] RS485 (+)
- [31] RS485 (-)

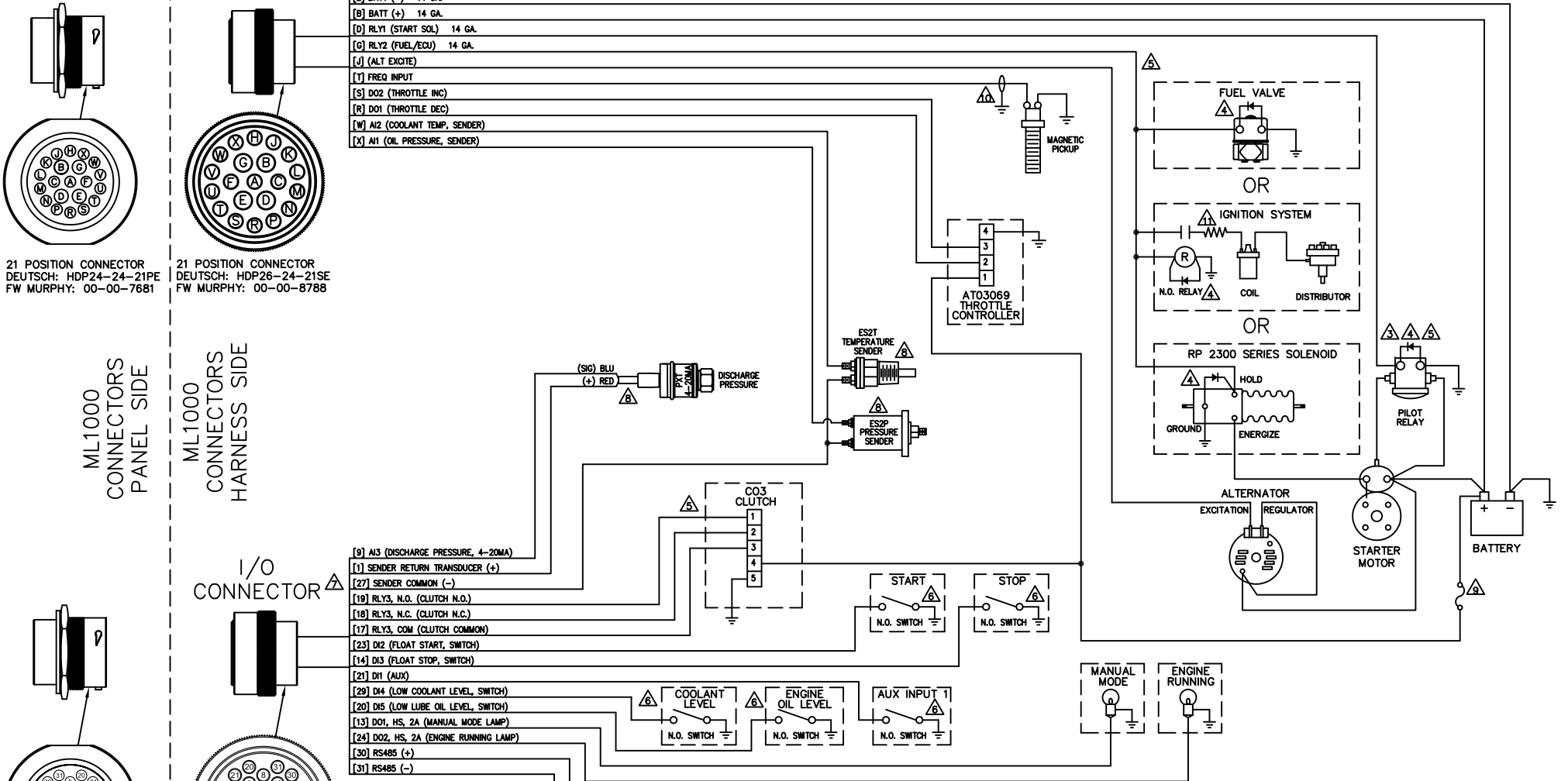
RS485 (+)  
RS485 (-)

REFER TO COMPONENT  
MANUFACTURER  
DOCUMENTATION

### NOTES:

1. ALL WIRE 18 GA WHITE UNLESS OTHERWISE NOTED.
2. TWISTED WIRES OR SHIELDED, TWISTED WIRES. APPROXIMATELY ONE TWIST PER INCH.
3. A PILOT RELAY MUST BE USED TO ENGAGE STARTER. RELAY COIL MUST DRAW LESS THAN 10 AMPS.
4. INSTALL FLY BACK DIODES AS SHOWN TO REDUCE THE POTENTIAL OF VOLTAGE SPIKES DAMAGING SOLID STATE COMPONENTS.
5. MAXIMUM CURRENT 10AMP FOR EACH RELAY RLY1 TO RLY1 AND RLY2 COMBINED CURRENT NOT TO EXCEED 15AMP.
6. ALTERNATIVELY, FOR DIGITAL INPUTS 1, 2, 3, 4, 5 (DI1, DI2, DI3, DI4, DI5), THE GROUND (-) CONTACT ON THE SWITCH CAN BE REPLACED WITH BATTERY POSITIVE.

- 7. NUMBERS & LETTERS IN [ ] REFER TO CONNECTOR POSITION.
- 8. RECOMMENDED FW MURPHY TRANSDUCERS.
- 9. INSTALL APPROPRIATELY SIZED FUSE OR CIRCUIT BREAKER.
- 10. CONNECT SHIELD OF MAGNETIC PICKUP WIRE TO GROUND.
- 11. USE BALLAST RESISTOR OF 0.85 - 1.82 OHMS.
- 12. DO NOT RUN AC AND DC WIRES TOGETHER IN SAME BUNDLE.
- 13. N.O. = "NORMALLY OPEN".
- 14. N.C. = "NORMALLY CLOSED".



|  |                               |             |                 |
|--|-------------------------------|-------------|-----------------|
| REV.   | CHANGES MADE                  |             |                 |
| <b>MURPHY</b><br><small>by an Emerson Controls</small> |                               |             |                 |
| DRAWN BY:  | BD                            | E.R.NO. IPD |                 |
| DATE:  | 10/20/15                      | CHKD. BY:   | MR APPD. BY: AU |
| MODEL:   | APPLICATION DRAWING<br>ML1000 |             |                 |
| DRAWING NO.  | 00-02-0971                    | SIZE        | REV.            |
|  |                               | C           | A               |