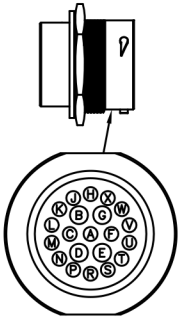
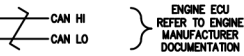


ML1000 TYPICAL APPLICATION DRAWING (FOR REFERENCE ONLY)

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)



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



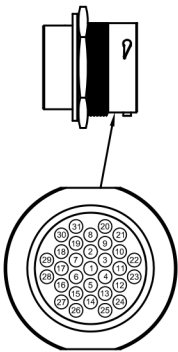
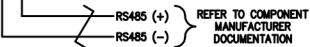
21 POSITION CONNECTOR
DEUTSCH: HDP26-24-21SE
FW MURPHY: 00-00-8788

ML1000
CONNECTORS
PANEL SIDE

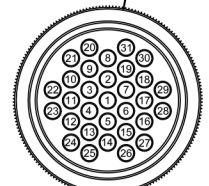
ML1000
CONNECTORS
HARNES SIDE

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 (-)



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

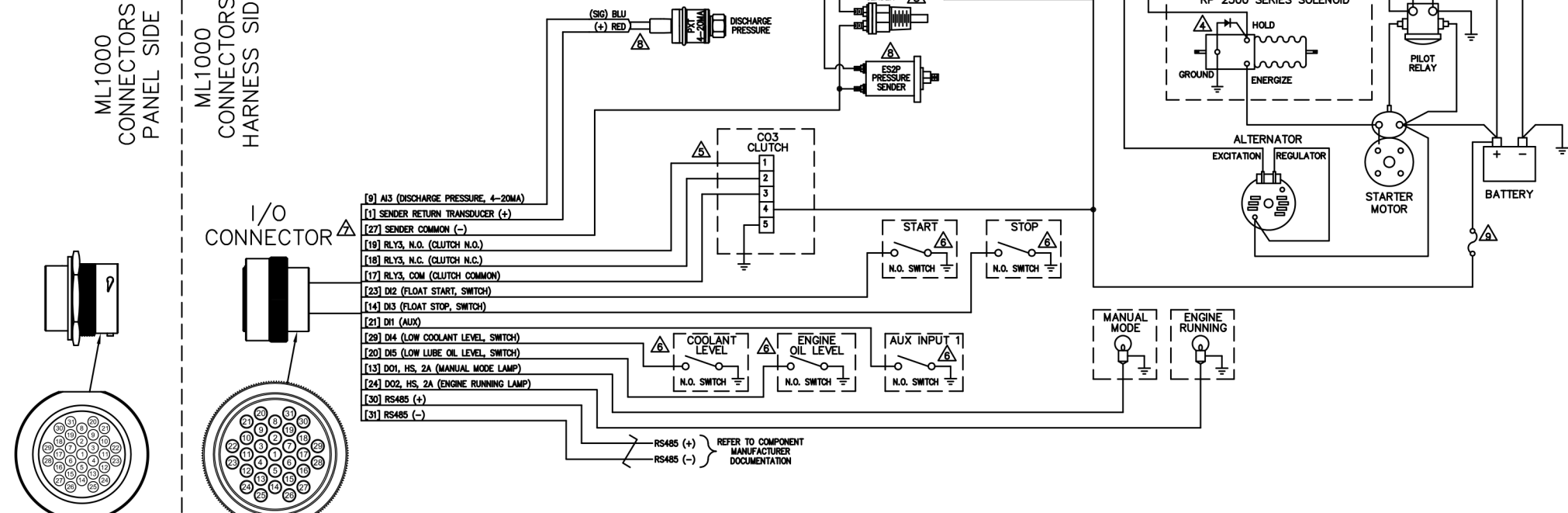


31 POSITION CONNECTOR
DEUTSCH: HDP26-24-31SE
FW MURPHY: 00-00-9287

NOTES:

1. ALL WIRE 18 GA WHITE UNLESS OTHERWISE NOTED.
 2. TWISTED WIRES OR SHIELDED, TWISTED WIRES. APPROXIMATELY ONE TWIST PER INCH.
- ⚠ A PILOT RELAY MUST BE USED TO ENGAGE STARTER. RELAY COIL MUST DRAW LESS THAN 10 AMPS.
 - ⚠ INSTALL FLY BACK DIODES AS SHOWN TO REDUCE THE POTENTIAL OF VOLTAGE SPIKES DAMAGING SOLID STATE COMPONENTS.
 - ⚠ MAXIMUM CURRENT 10AMP FOR EACH RELAY RLY1 TO RLY3. RLY1 AND RLY2 COMBINED CURRENT NOT TO EXCEED 15AMP.
 - ⚠ 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.

- ⚠ NUMBERS & LETTERS IN [] REFER TO CONNECTOR POSITION.
- ⚠ RECOMMENDED FW MURPHY TRANSDUCERS.
- ⚠ INSTALL APPROPRIATELY SIZED FUSE OR CIRCUIT BREAKER.
- ⚠ CONNECT SHIELD OF MAGNETIC PICKUP WIRE TO GROUND.
- ⚠ 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".



sales@murcal.com		661-272-4700	
DRAWN BY: WW/JCB	E.R.NO. IPD		
DATE: 10/20/2015	CHKD. BY: AU	APPD. BY: AU	
MODEL: APPLICATION DRAWING ML1000			
DRAWING NO. 00-02-0971	SIZE C	REV. A	