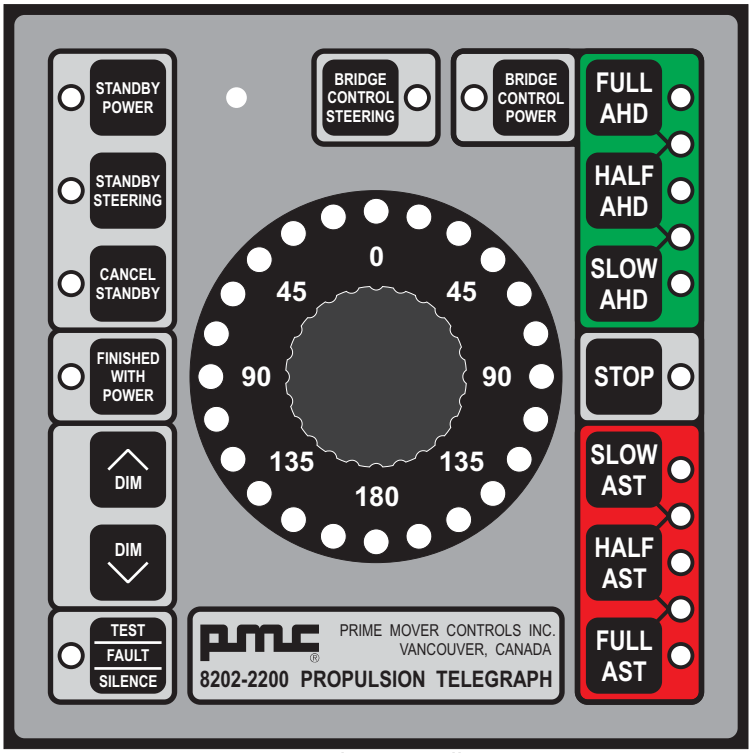
Series 8202-2000

The PMC series 8202-2000 Propulsion Order Telegraph is a compact, modular, micro-controller marine telegraph for Azimuth drive systems. It operates as a stand alone or backup system. The 8202 functions independently of the ship's main propulsion controls and allows emergency operation when primary remote controls fail.

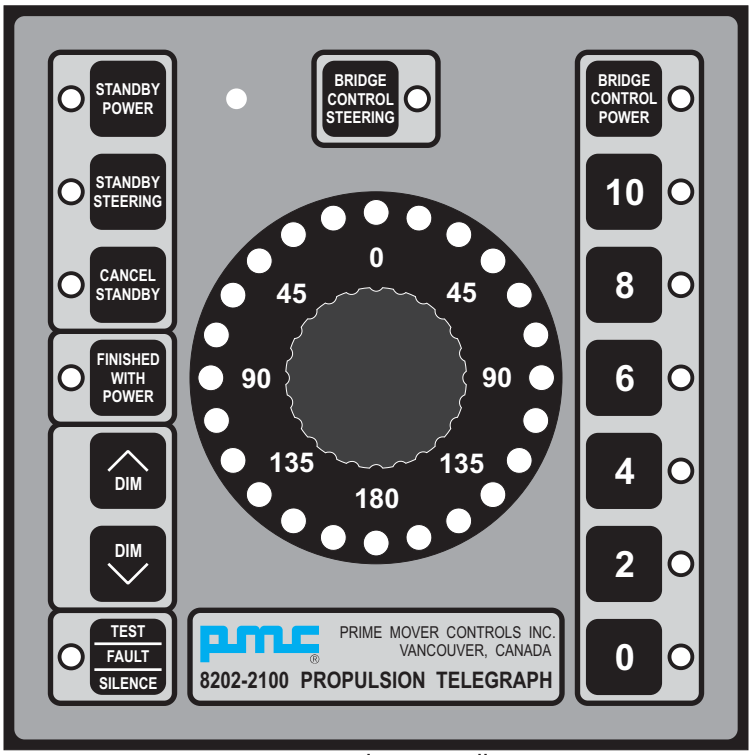
FEATURES

- Twenty four Azimuth Direction orders, eleven Power orders, Bridge Control orders and Finished with Power order
- Independent standby orders
- Optional limited rotation for steering or jet drives
- Fixed or controllable pitch propeller
- Up to eight separate drive systems, each with a maximum six engine room units and nine bridge units
- Super bright order indicators for daylight operation
- Backlit buttons for night operations
- Bridge units are dimmable
- Reliable communication and transceiver technology for the marine environment
- Communication cable length up to 2700 meters
- Dual 24 V_{DC} inputs use ship's power supplies
- Relay output for external order bell
- Relay output for unit fault (communication, CPU, power or setup fault)
- Self diagnostics with status indication
- 144 mm DIN mounting

PROPULSION TELEGRAPH



reversing propeller



non reversing propeller

PRIME MOVER CONTROLS INC.

DESCRIPTION

The PMC series 8202-2000 Propulsion Order Telegraph is a compact, modular micro-controller marine telegraph for Azimuth drive systems. It operates as a stand alone or backup system. The 8202 functions entirely independently of the ship's main propulsion controls and allows emergency operation when primary remote controls fail.

The 8202 provides communications for Steering, Power and Standby orders between bridge and engine room. There are twenty four Steering orders, eleven Power orders (six for fixed pitch non reversing propeller and eleven for reversing fixed pitch or controllable pitch propellers), Bridge Control orders and Finished with Power order. In addition Standby orders are included which may be operated at any time, independently of the propulsion orders. Communication is fully bi-directional; orders may be placed from either source.

Optionally, the rotation for azimuth orders can be limited to accommodate jet drives or conventional steering applications.

Up to eight separate drive systems, each with a maximum of nine bridge and six engine room telegraphs may be connected together. Each drive system has a minimum configuration of one bridge and one engine room telegraph. Systems can have split Power and Steering telegraphs for local at machinery stations.

Order indicators are super bright LEDs for daylight operation and all buttons have backlit legends for night operation. Bridge telegraphs are fully dimmable and can be grouped together to dim in unison. The bridge telegraphs measure ambient light and can be set to automatically control the indicator dimming levels.

Designed for the harsh marine environment, the 8202 is both rugged and reliable. The compact, 144 mm DIN mounted anodized aluminum enclosure with lexan front provides IP64 protection. Advanced transceiver and noise suppression technology is used, virtually eliminating the effects of electromagnetic and radio frequency interference. Micro-controller technology and the ability to operate from dual standard 24 VDC supplies, ship's batteries or commercial power supplies provides the 8202 with versatility and reliability.

Self diagnostics are performed by each 8202 for communication, CPU, power and setup faults. Fault status is visually and audibly alarmed at all stations.

Connections to the 8202 have been designed to reduce installation cost. Only one twisted pair cable is required for communication and can be up to 2700 meters in total length. Each telegraph is powered directly from ship's 24 V_{DC} power and can auto transfer to a backup 24 V_{DC} power source.

Programming of the 8202 (order bell time delay, master station, auto dimming, etc.) is by a simple set of rotary and dip switches making setup and service a simple procedure.

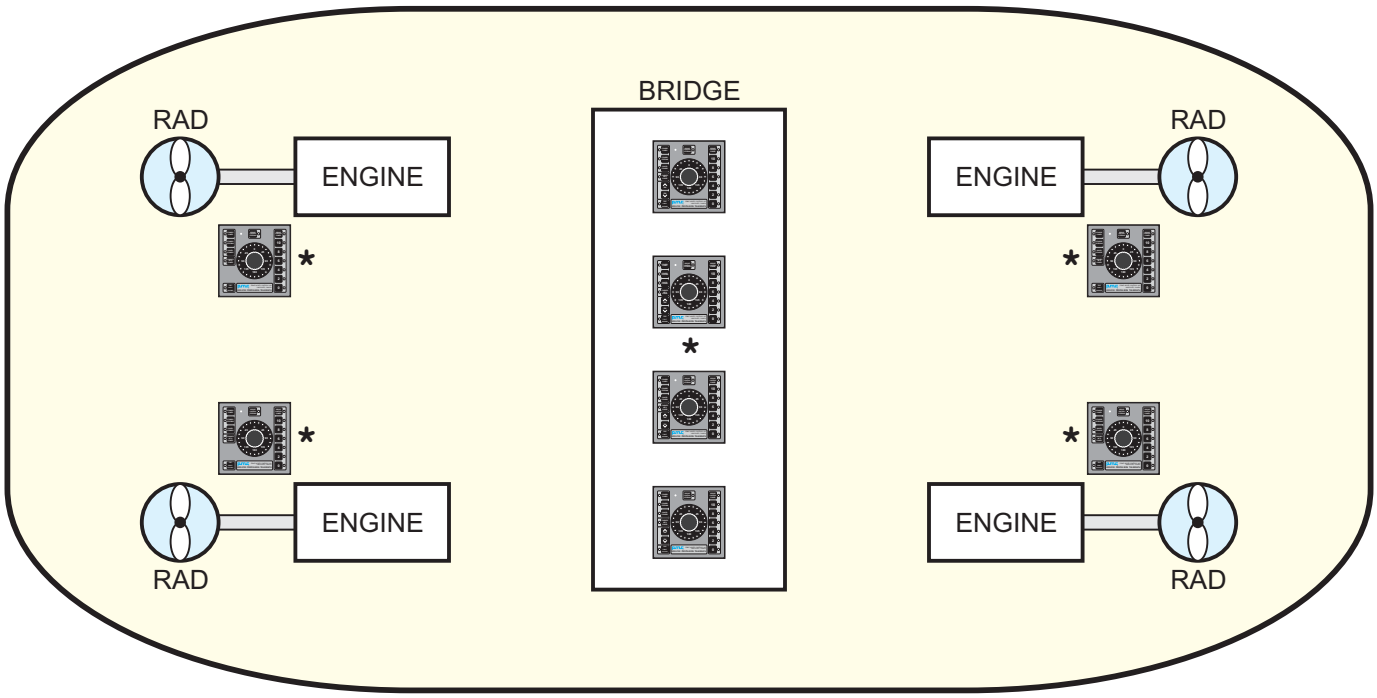
System accessories available from PMC include: bells, horns and project specific drawings.

OPERATION

The 8202 consists of three order groups: Power, Steering and Standby orders. These groups operate as follows:

1. Completed orders are displayed as indicators steady ON and all audible signals are silent.
2. A new order can be placed by pressing another order button or rotating knob for Steering orders. The order then flashes at all stations. Steering orders also show direction of change. At the same time the internal horn operates and will continue to operate until the order is acknowledged. The optional external bell can be set for a time delay.
3. The new order is acknowledged at the receiver by pushing the flashing order button or pushing/rotating the knob for steering orders. The order then turns steady ON, the previous order is cancelled and all audible signals are silenced.
4. New orders can be changed or cancelled at the transmitting telegraph group prior to being acknowledged.

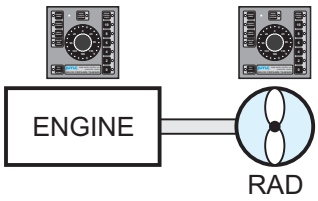
Typical Telegraph System Block Diagram for double ended vessels with quad Right Angle Drive (RAD)



The 8202-2000 Propulsion Telegraph is suitable for multiple remote and engine room control stations.

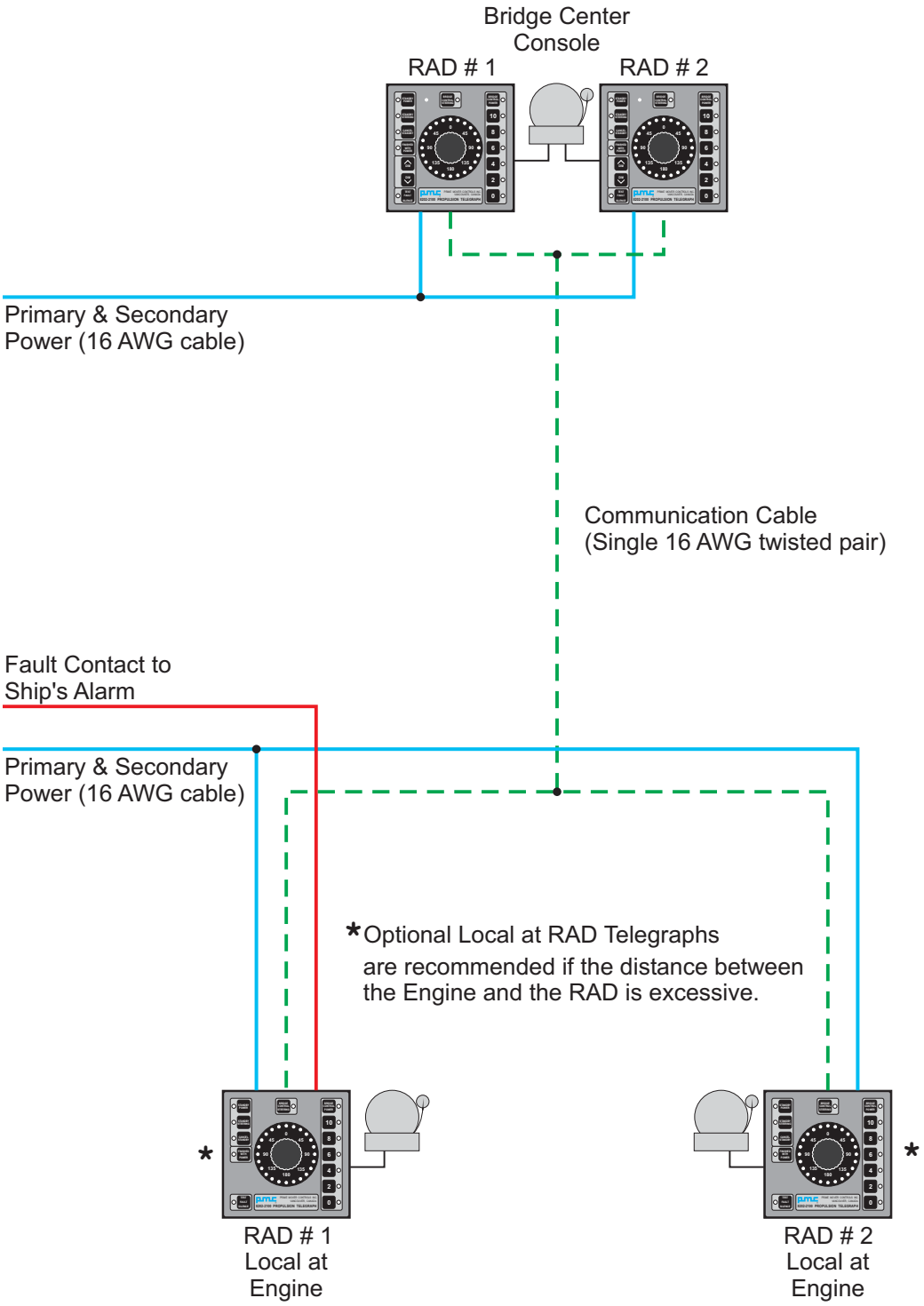
*Optional Bells, Horns and Lights can be included as required.

Separate telegraphs can be used at engine and fixed pitch propeller RAD units if required. Only the power orders are activated at the engine and only the azimuth orders are activated at the RAD unit.

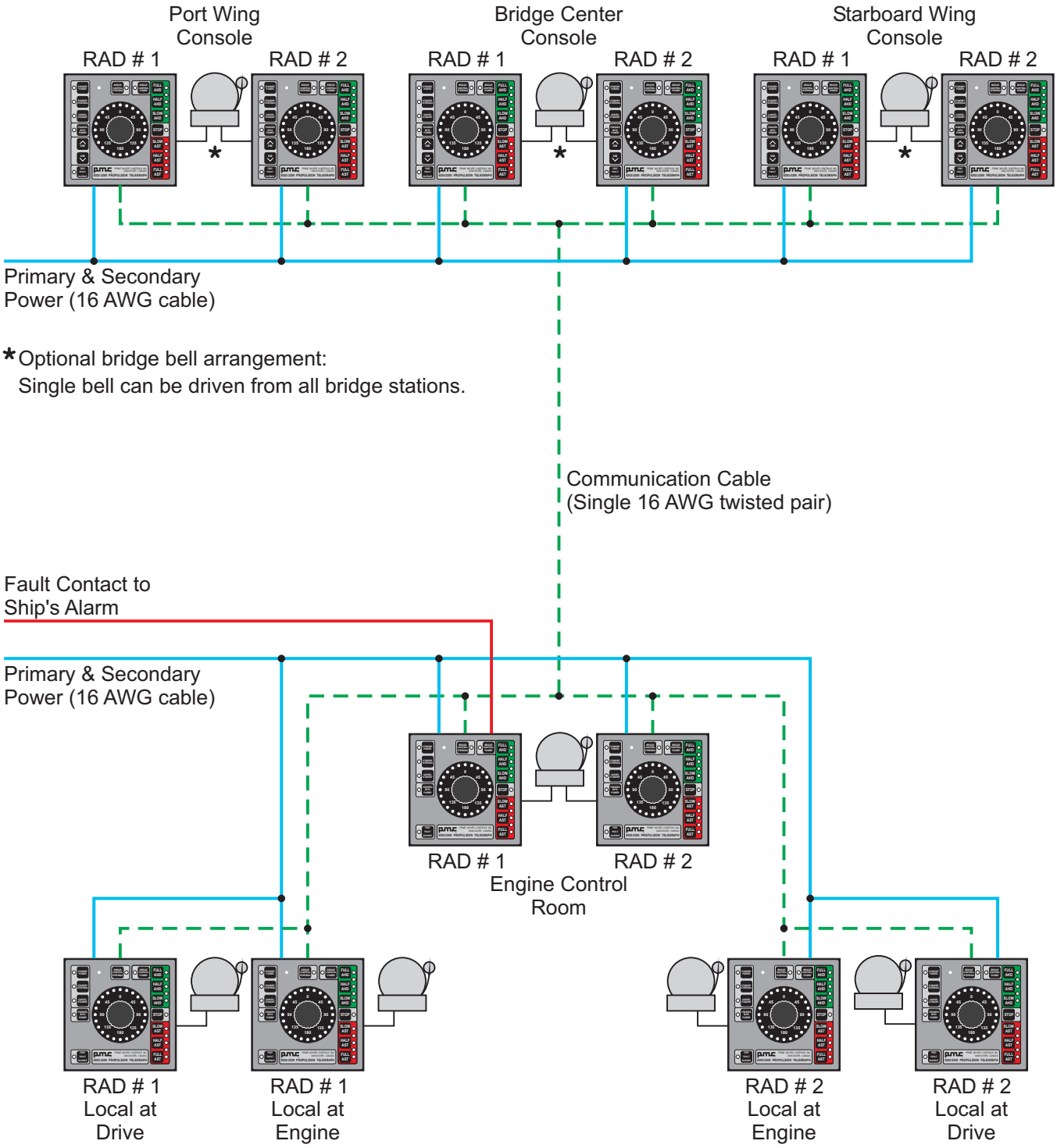


Optionally, two bridge propulsion telegraphs can be used instead of four. In this case one bridge telegraph controls two propulsion units, each with its own telegraph.

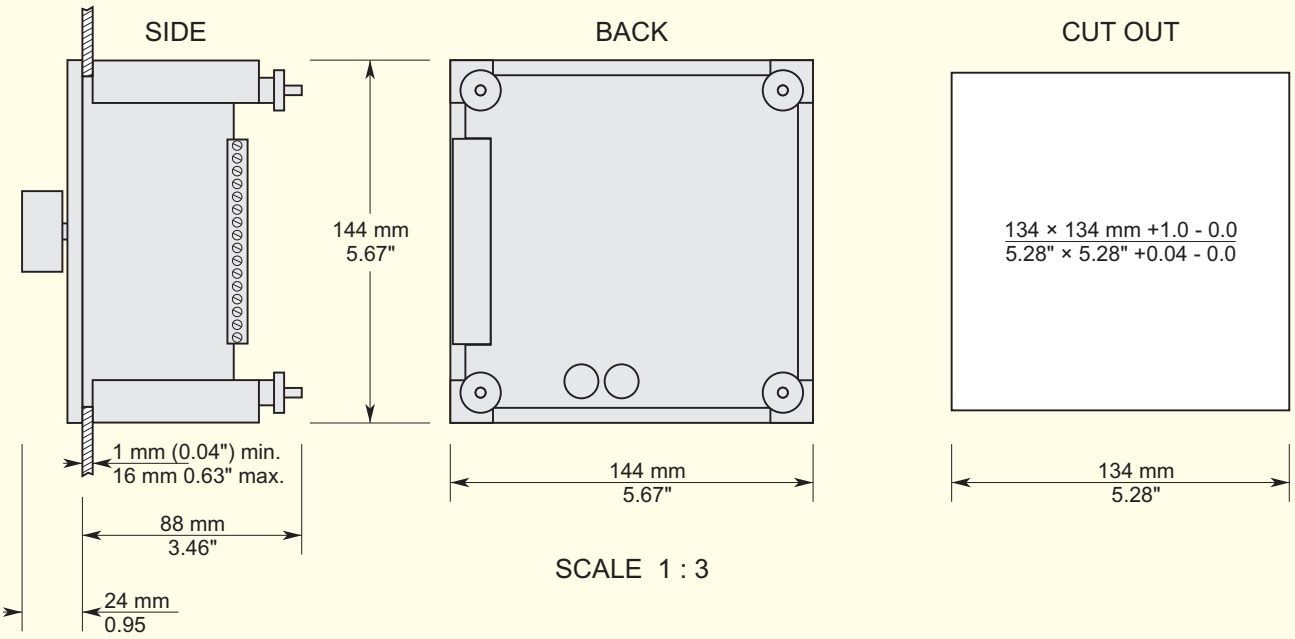
Typical Telegraph System Block Diagram for twin Right Angle Drive (RAD)



Typical Telegraph System Block Diagram for multiple station twin Right Angle Drive (RAD)



DIMENSIONS AND CUTOUT FOR 8202-2000 SERIES PROPULSION TELEGRAPH



SCALE 1 : 3

Mounting hardware is included with each unit and consists of 4 knurled nuts and 4 clamps.

SPECIFICATIONS:

Supply:

- Dual 24 V_{DC} inputs
- Nominal 24 VDC, range 12 to 35 V_{DC}
- Reverse and over voltage protection to 120 V_{AC}
- Low voltage alarm at 17 V_{DC}
- 170 mA nominal, 400 mA max
- Input power fuse, 2 A, type ABC-2

Inputs / Outputs:

- Bell relay NO contact, 5 A @ 250 V_{AC} 30 V_{DC}
- Aux relay NO contact, 5 A @ 250 V_{AC} 30 V_{DC}
- Fault relay form 'C' contacts, 1 A @ 30 V_{DC}
- Local Command Disable input for volt free contact

Communication:

- Cable, single 16 AWG twisted pair
- Bus Topology, total wire length 2700 meters
- Free Topology, total wire length 500 meters
- Optional repeater to extend total wire length

Environmental:

- Operating temperature -25 to +70°C
- Storage temperature -30 to +85°C
- Vibration: Frequency range 2 to 100 Hz
  Peak to peak amplitude 2 mm below 13.2 Hz
- Acceleration amplitude 0.7 g above 13.2 Hz

Physical:

- IP64 front (IP40 case)
- Dimensions 144mm H × 144mm W × 106mm D (5.67" H × 5.67" W × 4.17" D)
- Weight 1.2 kg (2.65 lbs)
- Removable terminal block for 14 to 20 AWG wires

OPTIONS:

- Fixed or controllable pitch
- Limited rotation orders for steering or jet drive applications
- Forward or Aft facing
- Time delay for order bell
- Input for unit disable (order buttons disabled)
- Manual, auto or no dimming
- Group dimming for adjacent units
- Adapter for connection to data logger or printer
- Router to increase maximum communication cable length

System Accessories Available from PMC:

- Bells, horns and lights
- Project specific connection diagrams drawn with AutoCAD
- Setup and testing of system by PMC personnel

PRIME MOVER CONTROLS INC.

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