

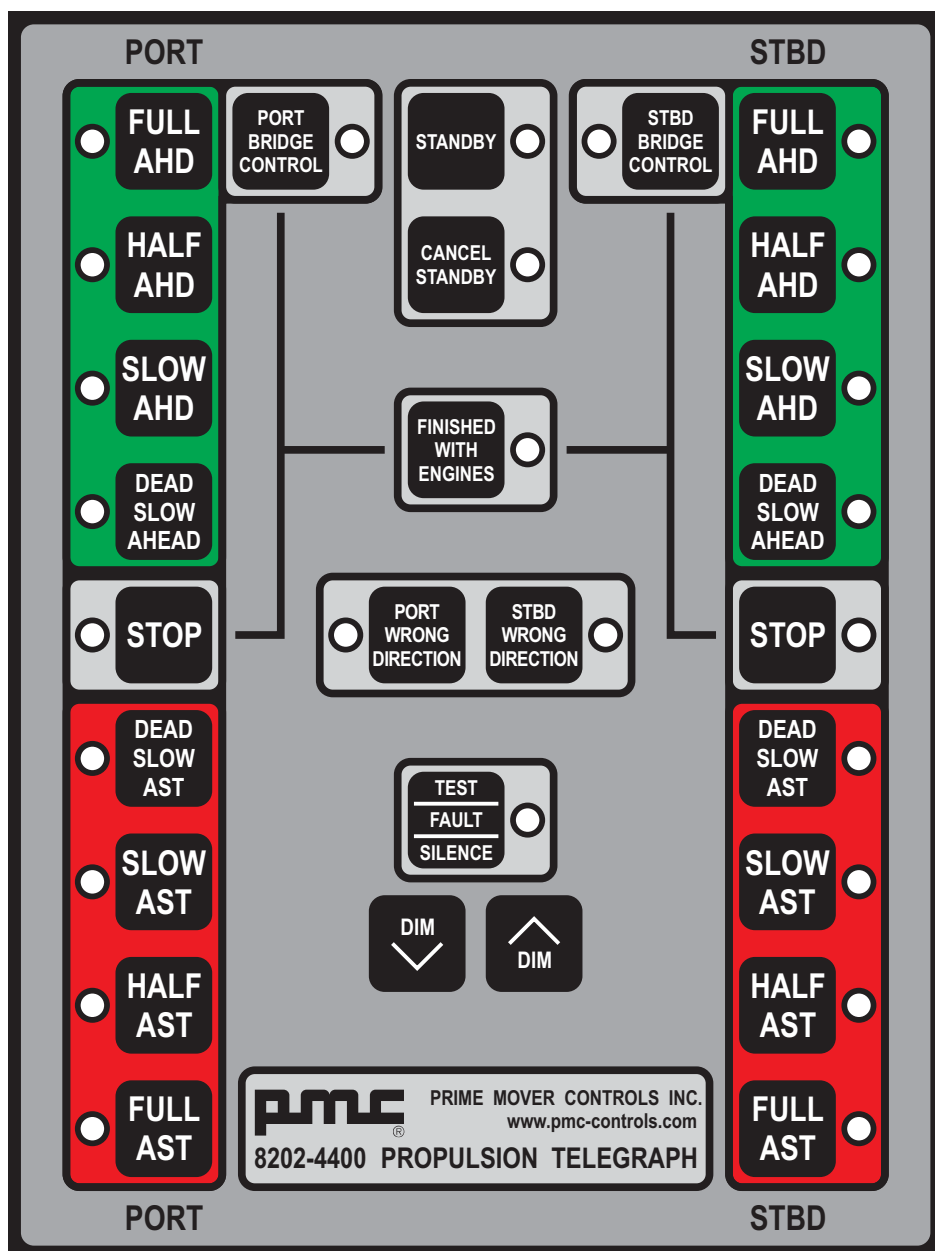
# PMC<sup>®</sup> Series 8202-4000

The PMC series 8202-4000 Engine Order Telegraph is a compact marine telegraph for single or twin screw 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

- Nine Port orders, nine Starboard orders, Bridge Control orders, and a Finished with Engines order
- Independent Standby orders
- Optional wrong direction alarms
- Single or twin screw
- Forward or Aft facing
- Double Ended vessels
- Up to nine engine room units and nine bridge units
- Super bright order indicators for daylight operation
- Backlit buttons for night operation
- Bridge units are dimmable
- Lamp test
- Dual 24 V<sub>DC</sub> supply inputs
- Redundant isolated 8202 networks (communication redundancy optional)
- Driver outputs for external order and wrong direction bells
- Self diagnostics and trouble shooting display
- DIN mounting
- IP65 splash proof front
- Optional I/O:
  - Two relay outputs for system fault and power faults
  - Isolated RS485 comm port for Voyage Data Recorder
  - Local disable input

## PROPULSION TELEGRAPH



PRIME MOVER CONTROLS INC.

SB 8202-4000

## DESCRIPTION

The PMC series 8202-4000 Engine Order Telegraph is a compact marine telegraph for single or twin screw 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 pushbutton communications of all standard propulsion orders between bridge and engineroom. Additionally standby orders are included, these orders can be operated at any time independently of the propulsion orders. Communication is fully bi-directional; orders may be placed from either source.

Optionally, propulsion machinery direction can be monitored in Ahead, Astern and Stop\* positions. Wrong direction status is visually and audibly alarmed at all stations.

Up to nine bridge and nine engineroom telegraphs may be connected together with a minimum configuration of one bridge and one engineroom telegraph. Twin screw telegraph systems can have split Port and Starboard 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.

Designed for the harsh marine environment, the 8202 is both rugged and reliable. Connections to the 8202 have been designed to reduce installation cost. Only one twisted pair cable is required for communication, or an optional seconded twisted pair cable can be used for redundant communication. Each telegraph is powered directly from the ship's 24 V<sub>DC</sub> power and can auto transfer to a backup 24 V<sub>DC</sub> power source.

Self diagnostics are performed by each 8202 for various fault conditions. Fault status is visually and audibly alarmed at all stations.

Set up of the 8202 (display type, order bell time delay, wrong direction, etc.) is via a navigation switch and LCD, making set up 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: Port, Starboard 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 which then flashes the newly requested order at all stations. At the same time the internal horn operates and will continue to operate until the order is acknowledged. The optional external order bell can be set to sound after an adjustable time delay.
3. The new order is acknowledged at the receiver by pushing the button next to the flashing order indicator, which then turns the order indicator to steady ON. The previous order is cancelled, and all audible signals are silenced.
4. New orders can be changed (by placing a different order) or cancelled (by pressing the existing acknowledged order) at the transmitting telegraph group prior to being acknowledged.

## WRONG DIRECTION (Optional)

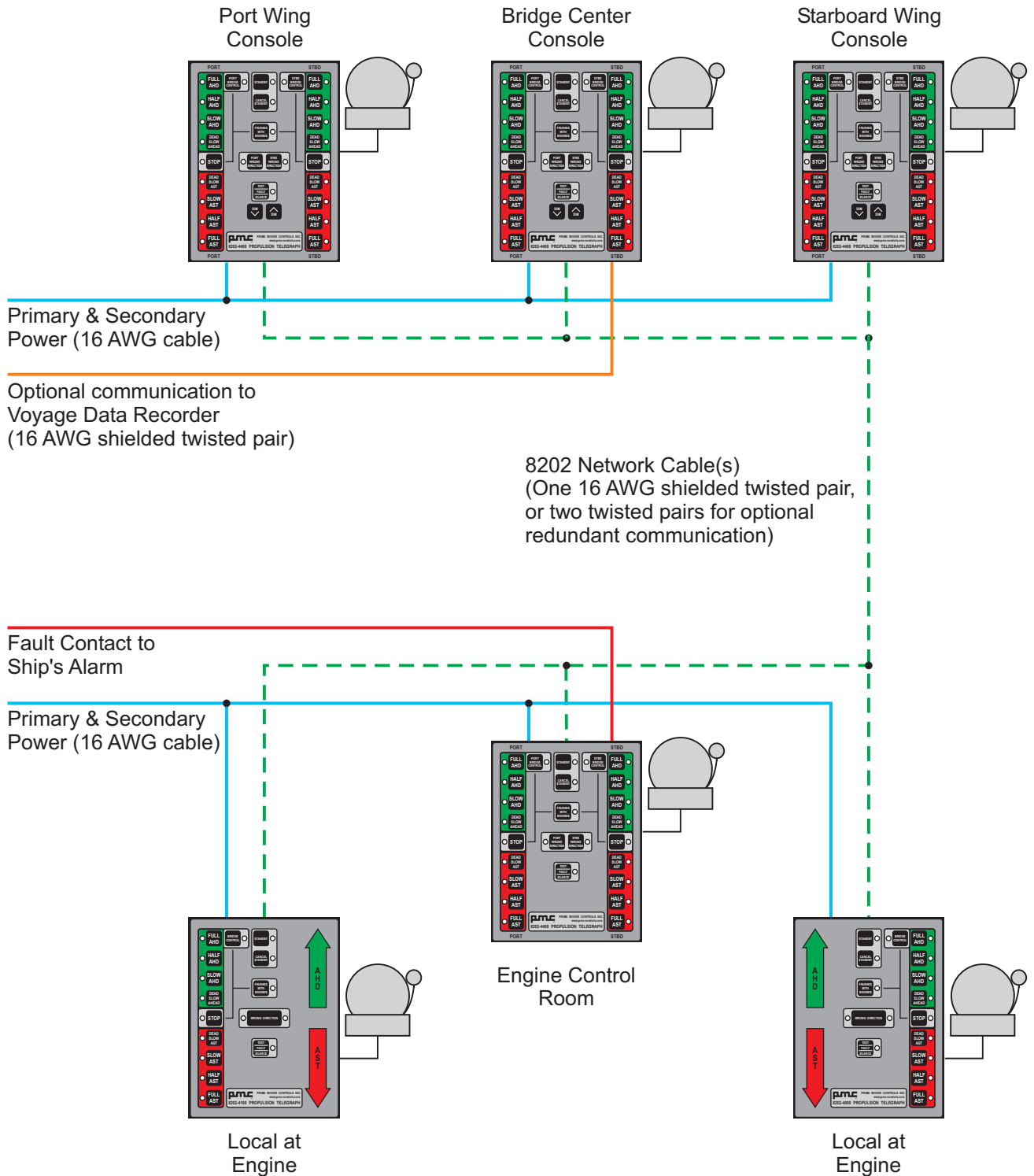
This option annunciates when the order direction (Ahead, Stop\*, Astern) does not match the propulsion machinery direction.:

1. The wrong direction alarm is enabled when an Ahead, Stop\* or Astern order is acknowledged. The wrong direction alarm is disabled when Bridge Control or Finished With Engines is acknowledged.
2. If the acknowledged order and the machinery direction does not match, the wrong direction indicator will flash. After an adjustable time delay, the internal horn and optional external bell will sound.
3. Pressing the Silence button will silence the internal horn and external bell.
4. When the acknowledged order matches the machinery direction, the wrong direction indicator will extinguish and the internal horn and external bell will silence.

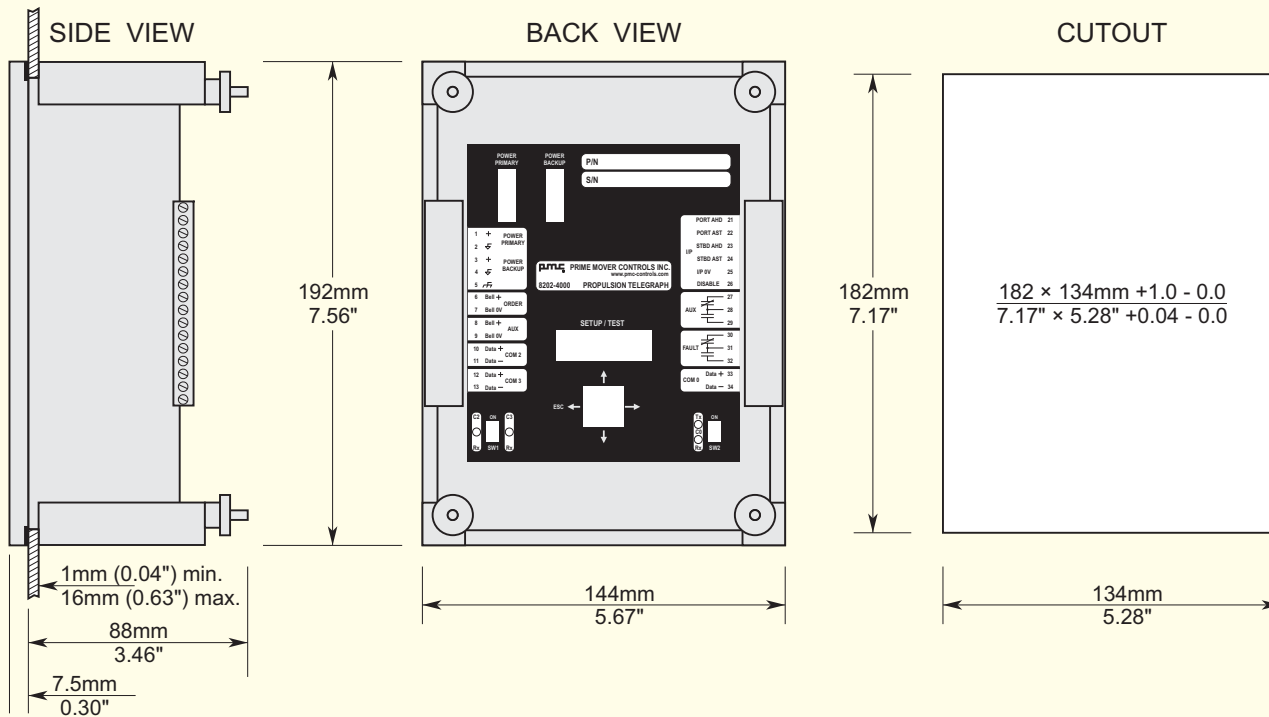
With a twin screw telegraph, the Port and Starboard wrong direction indicators function independently of each other.

\* Wrong direction can be setup to ignore Stop.

## Typical Telegraph System Block Diagram for twin screw installation



## DIMENSIONS AND CUTOUT FOR 8202-4000 SERIES PROPULSION TELEGRAPH



Mounting hardware is included with each unit and consists of 4 knurled thumb nuts and 4 clamps.  
Mounting gasket pre-installed on all telegraph units.

### SPECIFICATIONS:

#### Supply:

- Dual 24 V<sub>DC</sub> inputs
- Nominal 24 V<sub>DC</sub>, range 12 to 35 V<sub>DC</sub>
- Low voltage alarm at 17 V<sub>DC</sub>
- 320 mA nominal, 500 mA peak
- 780 mA peak with 2 PMC bells active
- Input power fuse, 5 A, type ATC-5

#### Inputs / Outputs (Standard):

- 2 bell driver outputs, high side driver, 2 amps @ supply power (self resetting over current / over temperature protection)
- 2 networks for 8202, isolated CAN ports (self resetting fuses and terminator switch)

#### Inputs / Outputs (Optional):

- Isolated RS485 comm port (NMEA 0183, Modbus RTU, or ASCII printer logger) (self resetting fuses and terminator switch)
- 2 relay outputs, form 'C' contacts, 1 amp @ 24 V<sub>DC</sub>
- 5 inputs, dry contacts required for inputs (local disable and propulsion machinery direction inputs)

#### Environmental:

- Operating temperature -20 to +70°C
- Storage temperature -30 to +80°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:

- IP65 front (IP40 case)
- Dimensions 192 mm H x 144 mm W x 94 mm D
- Weight 1.4 kg
- Removable terminal block for 14 to 20 AWG wires

#### System Accessories Available from PMC:

- Wrong direction sensors
- Bells, horns and lights
- Project specific connection diagrams drawn with AutoCAD
- Set up and testing of system by PMC personnel

## PRIME MOVER CONTROLS INC.

3600 GILMORE WAY, BURNABY B.C. CANADA V5G 4R8