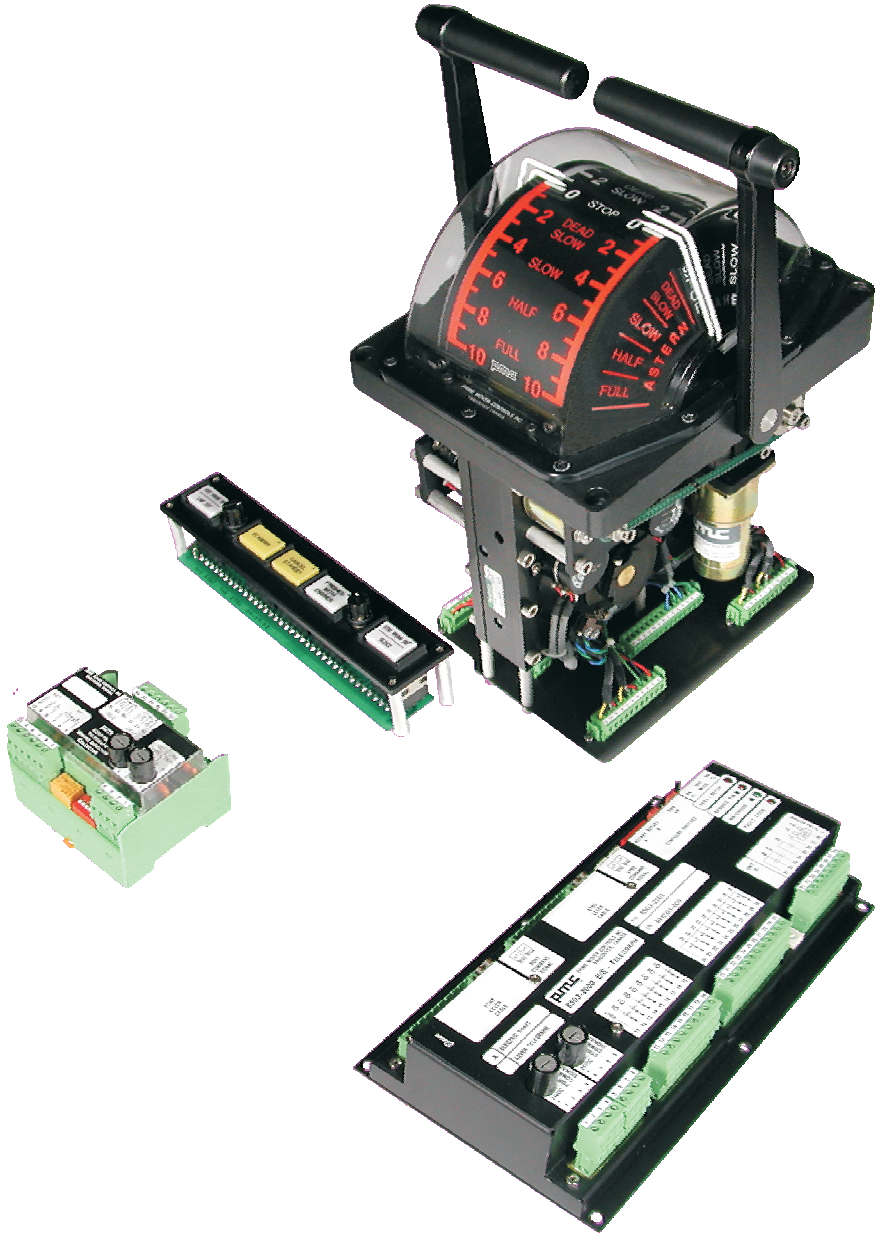
Series 5401-1100

PROPULSION ORDER TELEGRAPH

DIGITAL SYSTEM

The Series 5401-1100 propulsion telegraph system provides a means of bi-directional communication between the bridge and the engine room. This communication is in the form of orders placed and acknowledged by moving the command lever.



FEATURES

- Single or twin screw
- Multiple stations
- Bi-directional communication of orders and replies
- Dimmable internal illumination
- Contacts for external signal bells
- Wrong direction alarms
- Power fail and system fault alarms
- Control head IP66 above console surface
- Corrosion resistant
- Conformal coated PC boards
- Rugged construction
- ”Unbreakable” transparent cover
- Many different detent and friction arrangements
- Easy to install
- Marine approvals

OPTIONS

- Electric shaft system
- Custom scales
- Potentiometers for remote control, data logger, etc.
- Two wire transmitters
- Switches
- Repeaters

PRIME MOVER CONTROLS INC.

Propulsion Order Telegraph System

Series 8503-2000 Digital Servo Controllers are used in conjunction with Type 5401-1100 control heads to form a traditional lever style telegraph system.

The propulsion telegraph system provides a means of bi-directional communication between the bridge and the engine room. This communication is in the form of orders placed and acknowledged by moving the command levers.

The system uses dual 24VDC inputs from ship's power supplies and serial communication with error detection to ensure trouble free operation.

Relay outputs are provided for an order bell and a wrong direction alarm.

Telegraph Orders

An order is placed by moving the lever at the bridge station in command to the desired order. This causes the reply pointers at all engine room stations to move to the same position as the command lever on the bridge.

Whenever the reply pointer and the lever at an in command telegraph are not aligned, the external bells sound, at both in command locations, to indicate a new order.

Once the in command engine room lever is moved to align with it's own reply pointer, all bridge reply pointers will follow up and align with the engine room lever. All audible devices will silence. The engine room can transmit orders to the bridge in the same manner.

Multiple Station System

The propulsion telegraph system can operate from multiple bridge and engine room stations.

When a ship has one bridge station and one engine room station, both the bridge and engine room station are always in command.

When a ship has more than one station in the bridge and/or more than one station in the engine room command transfer is required. Generally a telegraph command transfer button is used to transfer command.

The control transfer logic can be performed by the Digital Servo Controller or via external logic (PLC, relays, or control transfer boards).

Auxiliary Orders

Auxiliary telegraph orders such as Standby, Cancel Standby and Finished With Engines can be integrated into the lever telegraph. Auxiliary telegraph orders can also be external pushbuttons.

Wrong Direction

An optional wrong direction alarm, with adjustable time delay, is activated when the direction of propulsion is not the same as the acknowledged telegraph order. This feature advises the engineer and captain when the machinery direction does not match the acknowledged order or if the machinery drifts to a direction other than the established setting. Ahead, Stop and Astern are considered distinct directions and are monitored by the wrong direction circuitry.

When auxiliary telegraph orders are present on the lever telegraph scale, wrong direction alarms are disabled for any acknowledged auxiliary order. When external push buttons are used for the auxiliary telegraph orders, wrong direction alarms are disabled for acknowledged Finished With Engines and Bridge Control orders, but enabled for Standby and Cancel Standby orders.

Pushbutton Telegraph Stations

Series 8202-1000 Push Button Telegraphs can be connected to a Type 8503-2000 Digital Servo Controller. The lever telegraph and the push button telegraph communicate on the same network.

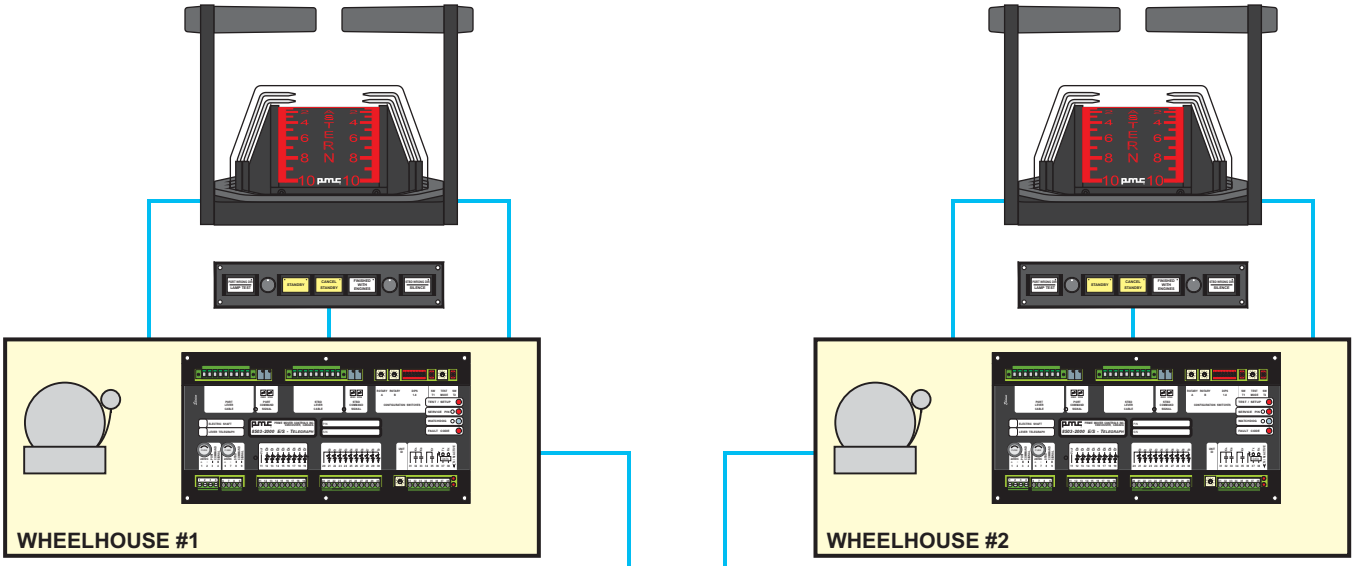
Command Position

Optional command signal transmitters can be installed at the factory. These transmitters work independently of the telegraph circuitry in the Digital Servo Controller. Each transmitter has it's own power supply with a self resetting internal fuse. Even with a complete failure of other circuitry on the Digital Servo Controller the transmitter will continue to function properly.

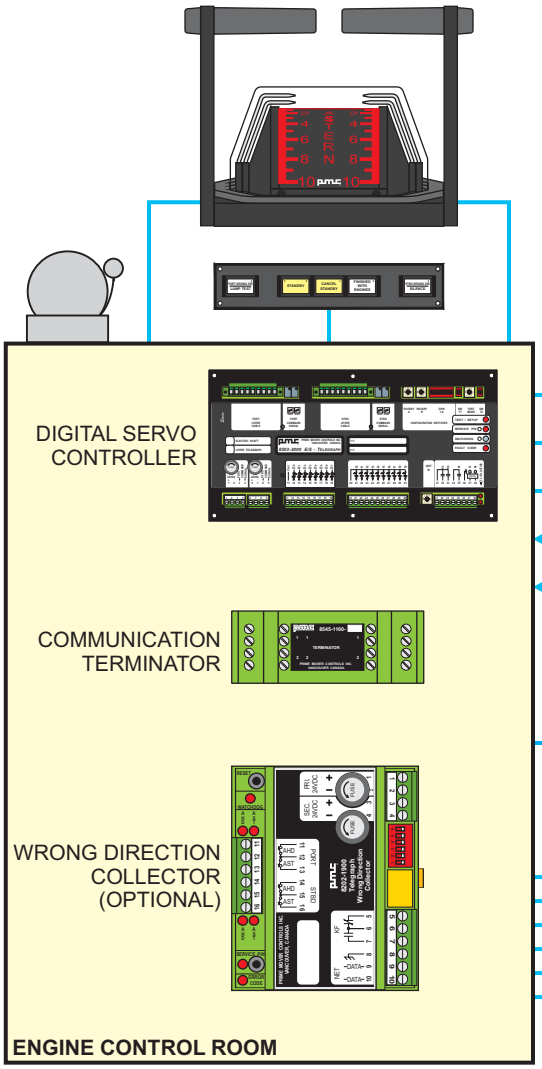
Diagnostics

Troubleshooting guidance is provided by a Watchdog LED and a Fault Code LED. Under normal operating conditions the Watchdog LED will flash.

The Fault Code LED flashes two digit codes which correspond to particular fault conditions. A fault relay opens on a general system fault.



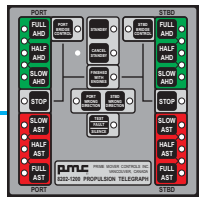
TYPICAL THREE STATION PROPULSION ORDER TELEGRAPH SYSTEM



TO ALARM SYSTEM

PRIMARY 24VDC SUPPLY

SECONDARY 24VDC SUPPLY



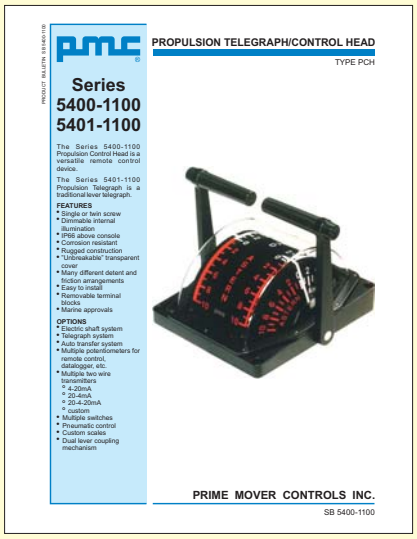
OPTIONAL LOCAL AT ENGINE TELEGRAPH
SERIES 8202-1000 PUSHBUTTON STYLE SHOWN

AHD
AST
PORT WRONG DIR SWITCHES OPEN IN SELECTED DIRECTION

AHD
AST
STBD WRONG DIR SWITCHES OPEN IN SELECTED DIRECTION

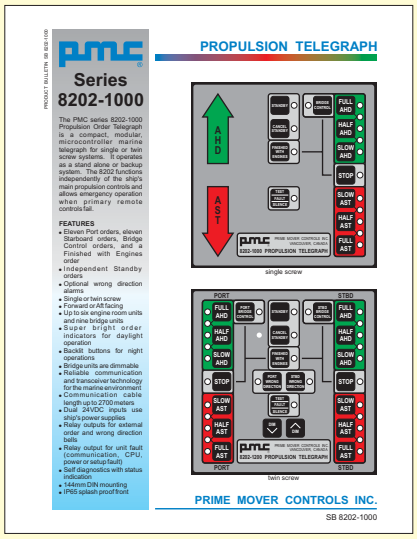
RELATED PRODUCT BULLETINS

Series 5400-1100/5401-1100 Propulsion Telegraph/Control Head



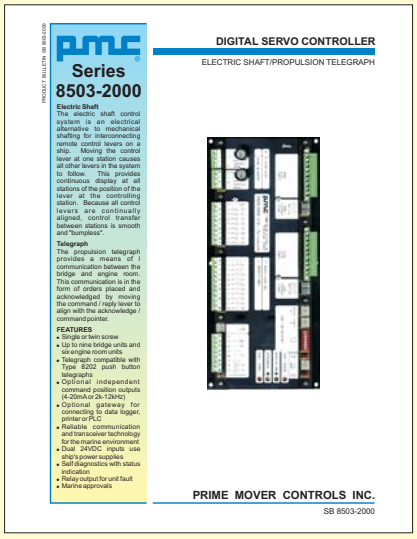
SB 5400-1100

Series 8202-1000 Propulsion Telegraph



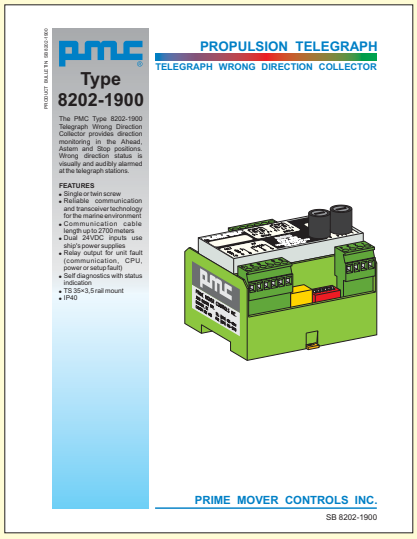
SB 8202-1000

Series 8503-2000 Digital Servo Controller



SB 8503-2000

Type 8202-1900 Telegraph Wrong Direction Collector



SB 8202-1900

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