

Philippi PSM Planning Guide



Overview

The Philippi PSM system consists of at least one PSM color touch-screen display, and numerous measuring, monitoring and switching devices all connected by data cables in a daisy-chain to form a network. Each device requires a DC connection to provide power to its internal processor, and can be connected in to the network at any location and in any order. Each open end of the network requires a Terminator.

Components

PSM Display: This is the heart of the system and is where all monitoring and switching takes place. Each monitoring device sends data to the PSM Display, which then processes and displays it. Switching of main battery switches and small loads is also accomplished on the PSM Display. There can be up to 15 PSM Displays on one network.

Battery Monitoring: This is accomplished by the use of SHC Shunts (Hint: Think C for Capacity). These are installed in the negative line of the battery at the closest possible location to the battery itself. There must be no other negative leads connected directly to the battery, and if some exist they will need to be moved to the other side of the SHC Shunt when it is installed. Provision is provided on each SHC Shunt for monitoring the voltage of a second battery; i.e. starter, thruster, winch, etc., that is not required to be monitored so thoroughly. An optional Temperature Sensor can be connected to show the temperature of any item or location within the scope of the sensor's 9' cable. The SHC 312 is rated for 300 amps continuous; SHC 600 series Shunts are rated for 600 amps continuous. Up to 16 batteries can be shown on the PSM Display.

Load/Charging Source Monitoring: This is accomplished with the use of SHL Shunts (Hint: Think L for Load). These are installed in the negative line of each load or charging source. The SHL 312 is rated for 300 amps continuous. There can be up to 16 SHL Shunts on the network.

Tank Monitoring: CMT modules must be connected into the network for tank monitoring. Each CMT can monitor up to four tank sensor inputs, and up to four CMT's can be installed on the network. Ultrasonic liquid level sensors (UTV) are used for most new installations, but the CMT can be configured for many other types of sensors. A Flow Meter is available to monitor water maker production, or when installing a tank sensor is impossible.

Battery Switching: Remote battery switching is accomplished with the FBC 260 Remote Battery Switch. This allows battery switching from the PSM Display as well as from a mechanical switch if desired. Push-buttons are provided on the switch assembly for a manual override. Low and high voltage disconnect thresholds can be set on the PSM Display, and a security code can be set to prevent accidental or malicious operation. The FBC 260 is rated for 260 amp continuous operation, and 400 amps for 5 seconds intermittent/cranking.

Load Switching: To enable small load switching, CMR modules must be installed in the network. Each CMR can switch up to four small loads of up to 15 amps each, with dimming available for lighting installations.

Cables: Network connections between components are made mostly with M12 cables and connectors, although there are RJ45 (Ethernet) ports on some components. M12 cables and connectors (also known as NMEA 2000) use a secure threaded connection, and cables are available in various lengths with one male and one female connector (male has exposed threads). Some PSM components, like Shunts, are supplied with an incorporated M12 Tee for simple connection to the network, but other components are supplied with a single M12 or RJ45 port, and a Tee and/or Adapter will be required to connect these items to the network. A Terminator is required in each open end of the network. Networks must end in a Terminator. They cannot end in a device with a single port, and a Tee must be used.

Planning a PSM System - Connector Type and Gender

The first step in planning a Philippi PSM system is to decide the order of components on the network and the distances between them. It is best to draw a plan of the layout of the components and connecting cables. Contact Coastal Climate Control for clarification or confirmation, and see the rear of the price sheet for examples of network configurations.

PSM Displays currently have 2 x RJ45 jacks and one M12 male connector, and are supplied with a RJ45 - M12 Adapter Cable, 5m. The PSM Display is most often installed at one end of the network for convenience, and the RJ45 - M12 Adapter Cable, 5m then used to connect to the first component, or to a M12 cable used as an extension. A RJ45 Terminator (supplied) is then used in the other RJ45 jack.



Shunts, and the **FBC 260 Battery Switch** are normally supplied with an integrated M12 Tee on a 7" tail. If several of these items are located close to each other, they will typically be able to couple directly together and not require a connecting cable between them.



Tank Modules - CMT and **Load/Switching Modules - CMR** are supplied with either a single RJ45 jack or a single M12 male connector.

M12 Cables are available in 1m, 2m, 5m, and 10m lengths, with a male connector on one end and a female connector on the other.



M12 Tees are either a **Standard Tee**, or an **Extended Tee** with a 7" tail. Both feature male and female through ports, and a female tee port.



Adapter Tees feature male and female M12 through ports, and a RJ45 jack on a 8" tail.



M12 Terminators are either male or female gender (male shown here).



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