

Point2point Power Sleeve

User Guide

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1 Introduction

The plug-in module power sleeve enables a plug-in module to be used for battery powered standalone use. The integrated battery will provide power for up to 50 hours continuous operation.

Power for the module is provided by an integrated 3.6Ah or 9.0Ah NiMH (Nickel metal hydride) battery. It is recommended for use in a less demanding RFI environments than the shielded module and battery. The sleeve has a built in low voltage disconnect switch which prevents the battery from over discharge.

There is also the option to remotely control power on/off via a multimode fibre link using the PPM four channel battery switch control module (73681).

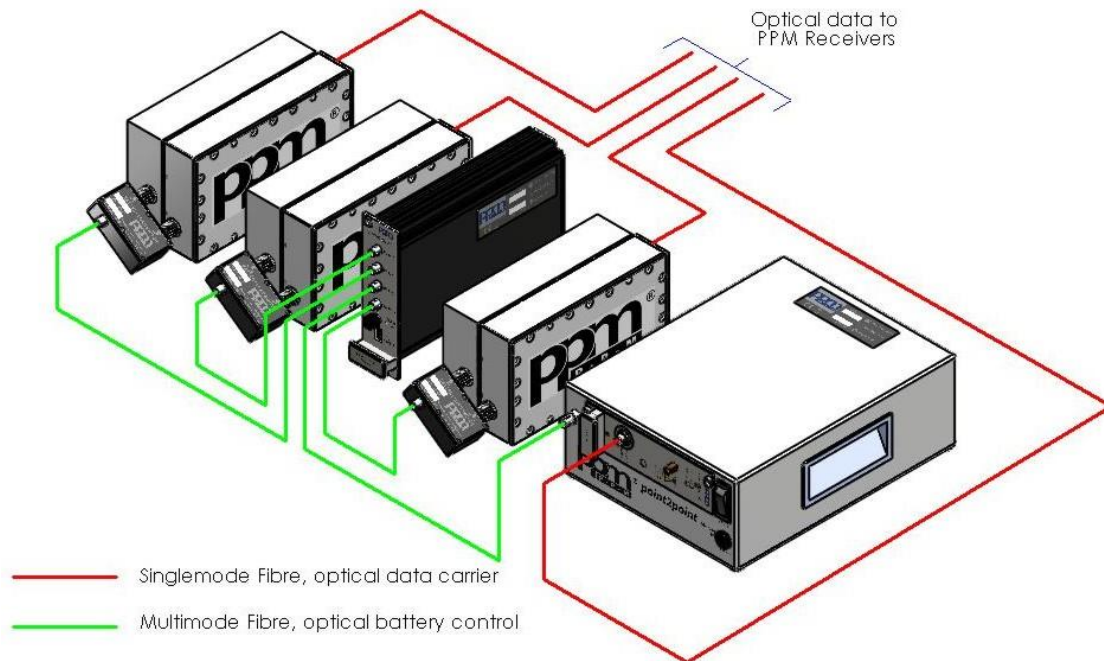
75013	Power sleeve with 9.0Ah capacity
75014	Power sleeve with 3.6Ah capacity
75015	Power sleeve with 9.0Ah capacity, with optical switch
75016	Power sleeve with 3.6Ah capacity, with optical switch

2 Using the Power Sleeve

To use a power sleeve with a plug in module slide the plug in module into the unit, with the handle on the left hand side, and push the unit home to ensure that the 96 way connector is fully mated. The retention screws should be tightened to ensure good ground bonding on the front panel.

Power sleeves with the remote control option must be used in conjunction with PPM 73681 four channel battery switch control module. With the optical input unconnected the default state of the switch is off. The optical input should be connected using an ST multimode cable to the battery switch controller via a suitable cable.

Each of the four outputs of the battery switch controller can be used to control one battery load switch or power sleeve. The diagram below shows the connections.



Please see the battery switch and controller handbook 7368x-HB for more details.

2.1.1 On/Off (charge) Switch

The unit is fitted with a front panel switch; with the switch in the on position, power is supplied to the plug in module. When set to the off (charge) position, power is disconnected from the plug in module. In the off (charge) position the battery is connected to the front panel 2.1mm connector, the switch must be in this position to charge the battery. The negative battery terminal is common with the chassis ground and not switched.

To maximise battery life it is recommended that when not in use, the sleeve front panel switch should be set to the off (charge) position. This will avoid over discharging the battery if the unit is unused for an extended period (i.e. over a week).

2.1.2 2.1mm Charging Input

This socket should be connected to a recommended battery charger such as a PPM 56292 4 channel charger. The internal battery will only be available for charging when the front panel switch is set to the off (charge) position. The centre pin of the connector is positive, the outside pin is connected to the battery negative and chassis ground.

2.1.3 Optical Input

Units fitted with the optional remotely control power on/off function contain a fibre optic receiver which senses the presence of a light source. With the light on it enables the DC power, allowing conduction between the battery and plug in module. With the light off the battery is isolated.

The fibre optic control port is ST multimode, it can accommodate a wide range of fibre types including 62.5/125um and 50/125um. It is recommended to use a 62.5/125um for best results. The control circuit draws its power from the battery, but the load is relatively low and hence does not significantly impact the battery endurance.

3 Batteries

For detailed information on battery charging, usage, maintenance and disposal, please see battery handbook 7346x-HB.

3.1 Performance

The time a battery can provide power to its load will depend on many factors including:

- Battery state of charge
- Battery age and condition
- Ambient temperature
- Load current
- Elapsed time since battery was charged

Nominal times new, fully-charged batteries will power a load at 20°C are:

Load	3.6Ah battery Pack	9.0Ah battery Pack
100mA	33 hours	82.5 hours
150mA	22 hours	55.0 hours
200mA	16.5 hours	41.3 hours
250mA	13.2 hours	33.0 hours
300mA	11 hours	27.5 hours
350mA	9.4 hours	23.5 hours
400mA	8.2 hours	20.5 hours
450mA	7.3 hours	18.3 hours
500mA	6.6 hours	11.5 hours
550mA	6.0 hours	10.5 hours
600mA	5.5 hours	9.5 hours

As a guide, temperature and battery condition will cause these times will vary as follows:

- 95% time if discharged at 0°C (-5%).
- 90% time if discharged at -10°C.
- 90% if stored at 25°C for one week after charging
- 75% if stored at 40°C for one week after charging
- 90% after 500 charge/discharge cycles
- 80% after 3 years usage

These variations can be multiplied together as applicable. For example, a 3 year old battery fully charged then stored for a week at 25°C before being discharged at 0°C will only last: 80% x 90% x 95% = 68% of nominal time.

4 Maintenance and Fault-Finding Guide

Refer to the following table that gives a list of commonly encountered problems and suggested solutions.

Fault	Possible Causes	Solution
FOL Device under test permanently off	Power sleeve low status incorrect Battery is discharged. Four channel battery switch control module low status incorrect (optical switch only) Four channel battery switch control module TTL control lines are set to incorrect value (optical switch only) Dirt on the fibre optic connectors. (optical switch only) Broken optical fibre. (optical switch only)	Switch sleeve to on Recharge/replace battery pack Switch Controller to on LED on controller is green Check controller LED is green, check control connection is high Clean the fibre optic connector. Refer to Appendix Replace cable
FOL Device under test permanently on	Power sleeve switch status incorrect Four channel battery switch control module switch status incorrect (optical switch only) Four channel battery switch control module TTL control lines are set to incorrect value (optical switch only) Incorrect optical control cable connected (optical switch only)	Switch sleeve to off Switch controller to off LED on controller is red Check controller LED is green, check control connections is low Connect correctly

In the event of any problems or queries about the equipment, contact PPM or your local agent.

5 Product Warranty

The Company guarantees its products, and will maintain them for a period of three years from the date of shipment and at no cost to the customer. Extended warranty options are available at the time of purchase.

Please note that the customer is responsible for shipping costs to return the unit to PPM.

The Company or its agents will maintain its products in full working order and make all necessary adjustments and parts replacements during the Company's normal working hours provided that the Customer will pay at the rates currently charged by the Company for any replacements made necessary by accident, misuse, neglect, wilful act or default or any cause other than normal use.

Claims must be made promptly, and during the guarantee period.

IMPORTANT: -

Please contact both your selling agent and PPM prior to returning any goods for Warranty or Non-Warranty repairs. Goods will not be accepted without a valid RMA.

Appendix I Specifications

System Parameters (at 25°C, $I_{load}=500mA$ unless otherwise noted)

General, specifications

Size	223 x 175 x 82mm
Battery capacity	3.6Ah or 9.0Ah
Weight	2.4 kg (3.6Ah) or 3.8kg (9.0Ah)
Housing options	Supports all types of point2point plug in modules
Operating voltage range	+11V to +17V
Low voltage disconnect	Built in
Over current protection	Built in
Operating current	3A max

Optical switch, specifications

Time to switch off	200us typ
Time to switch on	1us typ
Control sense	Light on = Battery connected to module Light off = Battery disconnected from module
Standby quiescent current	4mA typ 10mA max (in light off state)
Operating quiescent current	15mA max (in light on state)
Operating range	<1km (with 50/125um or 62.5/125um multimode cable)
Optical reception wavelength	820nm nominal
Optical threshold on	>-24dBm
Optical threshold off	<-40dBm
Operating Temperature	-10°C to +40°C
Electrical Signal Connector	DIN47295 1.6/5.6 Socket
Optical connector	ST multimode
Fibre options	Multimode 50/125um Multimode 62.5/125um

