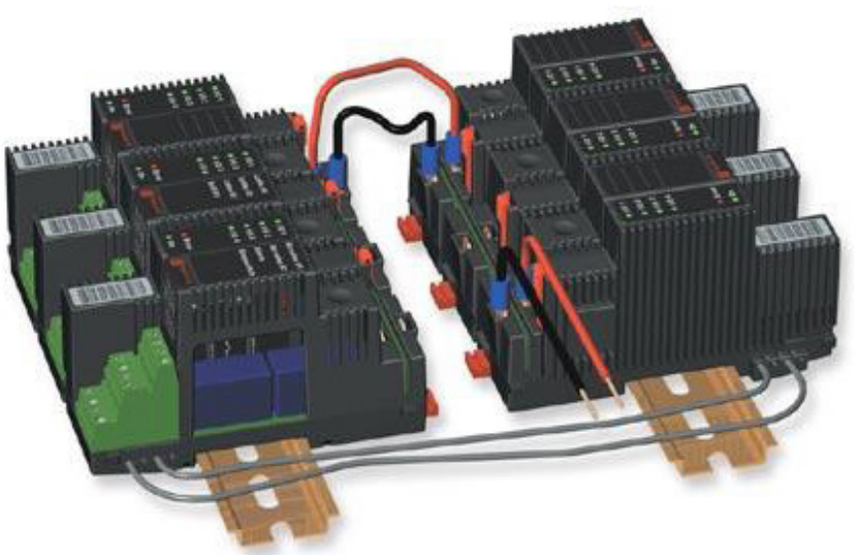
Product Data Sheet
September 2018
SD 8702-2E04

Mounting Modules and Forming Clusters

PD Series 600



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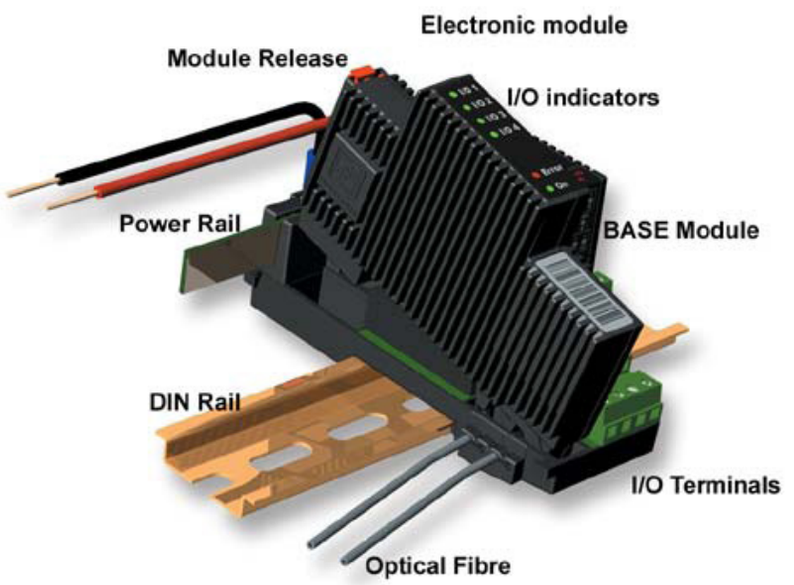
Module Structure

PD 600 series DPIs and I/O devices are made up of two parts; the Terminal Base Module and the Electronics Module.



Mounting Modules

Base modules are clipped directly onto the DIN rail by holding at a slight angle while the front part is hooked under the front edge of the rail, then pushed towards a horizontal position until a retaining "click" is heard. They can be removed by pulling the red spring-loaded slider outwards with a finger or small screwdriver, while lifting the module away from the rail.

Electronic Modules are simply plugged and clipped into the appropriate Base module, by first engaging the front (optics) part of the electronics into the terminal module at a slight angle, and then pushing towards a horizontal position until retained by the in built clip. Extraction is achieved by squeezing in the red retaining clip and reversing the procedure.

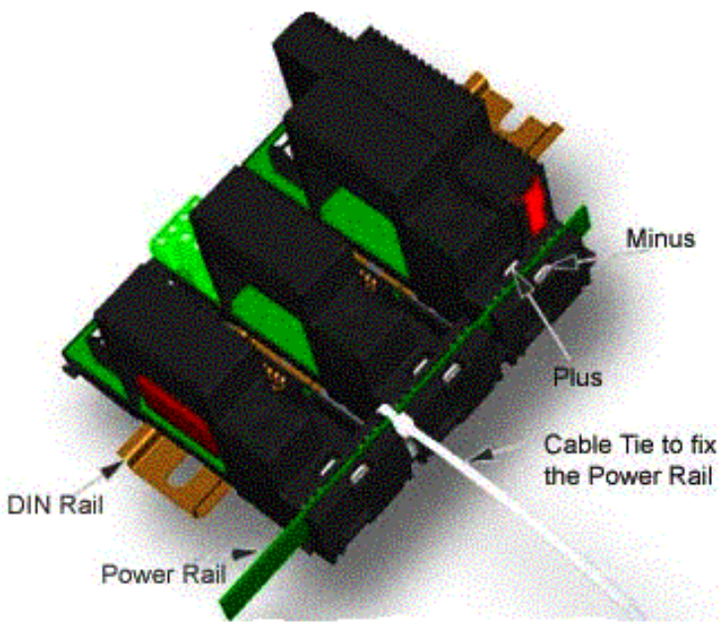
Forming a Cluster

Additional Base Modules are fitted adjacent to one another, ensuring that the matching retaining hooks are engaged. This ensures that the four Light-Link communication windows in each module are correctly aligned.

A Cluster of distributed programmable and input and output devices normally includes at least one device which offers another P-NET interface in addition to Light-Link P-NET, to achieve communication with the rest of the system. One way is to include a "Simple P-NET Interface" module, which provides transparent RS-485 P-NET communication between the rest of the system and individual modules via Light-Link P-NET. This configuration is especially suitable if no programmable control is to be included within the cluster.

On the other hand, if programmable control is required, one or more DPI modules will be included, each of which offers a choice of interface capable of communicating using the P-NET protocol. If this method is used, the DPI will act as a gateway between the global P-NET sectors and local devices connected to Light-Link P-NET.

Light - Link



Light-Link is the means of communication between 600 series modules. The common Tx and Rx optical paths are automatically connected between terminal modules during placement, and an optical “spur” connection is made available to any electronics modules that are fitted. In copper wiring terms, using Light-Link is equivalent to daisy-chaining a 3-wire connection between each module, but without having to perform the time consuming and bulky physical connection. Such an optical medium obviously provides galvanic isolation, but since light signals are received, amplified and transmitted at each node junction (acting as a repeater), a small degree of latency (delay), in the order of nanoseconds is induced. Therefore, DPIs and Simple P-NET interface modules should be all grouped together within the cluster.

Having assembled and applied any user labelling to the cluster, it is now ready to have external connections applied. Input and output terminations have been designed to ensure that no additional junctions or marshalling connections are necessary. In other words, there is a single terminal available for each wire (refer to terminal labelling), and there is no need to common up any signals.

As far as applying power to each module in the cluster is concerned, this is simply achieved by fitting (pushing in) the appropriate length of supplied double-sided Power Rail, into the aligned rear slots along the length of the cluster. Connection to the actual power source (which might also be fitted to the DIN rail), is made using any two of the spade terminals available along the length of the cluster.

Under normal operational conditions, the cluster power rail will be retained quite satisfactorily. However, under high vibration and/or mobile conditions, retention can be guaranteed by passing a 2.5 mm cable tie through the hole formed between the rail and the electronics module and clip around the engaged inter-module retaining spigots.

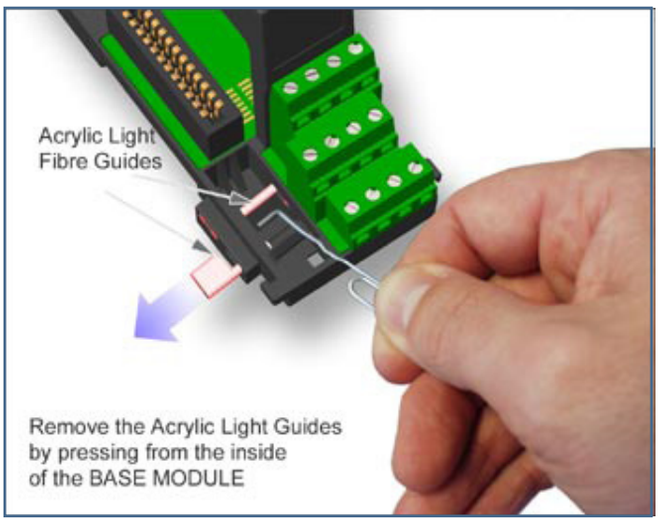
Linking Block of Clusters

It may be more convenient to form a local cluster into two or more blocks, perhaps in order to match with dimensions of a housing or signal entry points. In this case, it is necessary to ensure that the Light-Link communication path between modules is continuous. To achieve this, two (or more) sub-clusters are linked together with two short pieces of polymer optical fibre (POF).

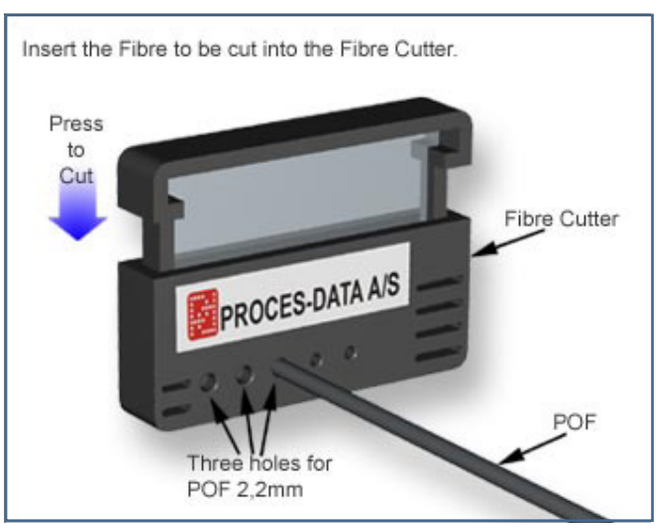
1. First, the plastic light guide assembly in each of the linked terminal modules has to be removed. This can be achieved by first removing any electronic module, and then using an ordinary paper clip to push the guide out.

Note!

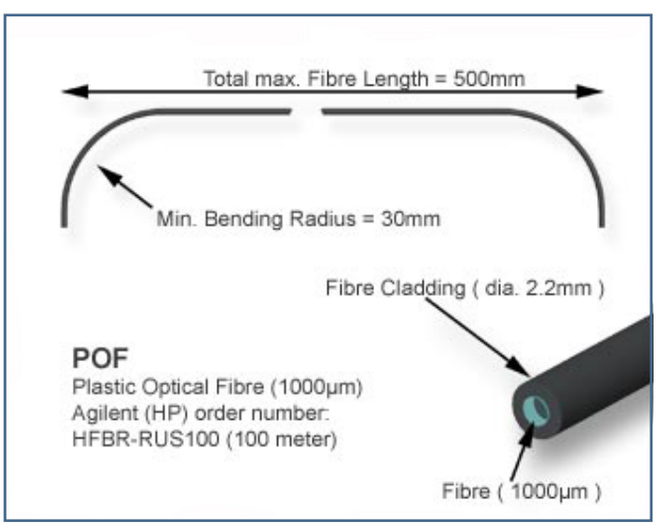
The POF cable type can be, for example, Agilent Technologies type HFBR-RUS.



2. To ensure a clean interface, cut the Polymer Optical Fibre (POF) to the length required, using the tool illustrated below.



3. In joining clusters together, the specifications provided below should not be exceeded.

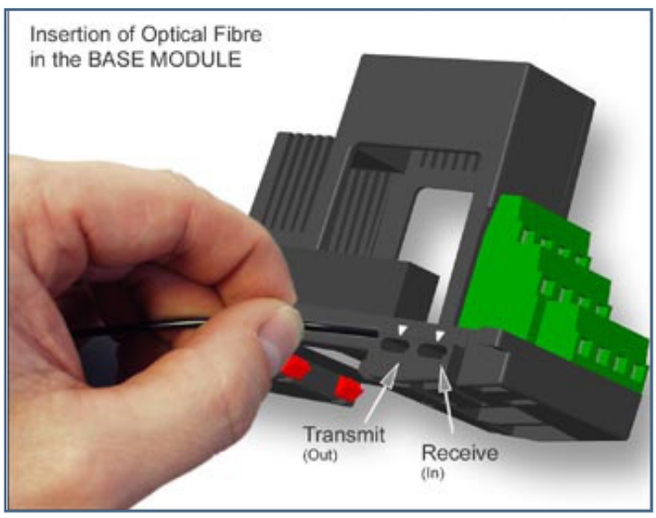


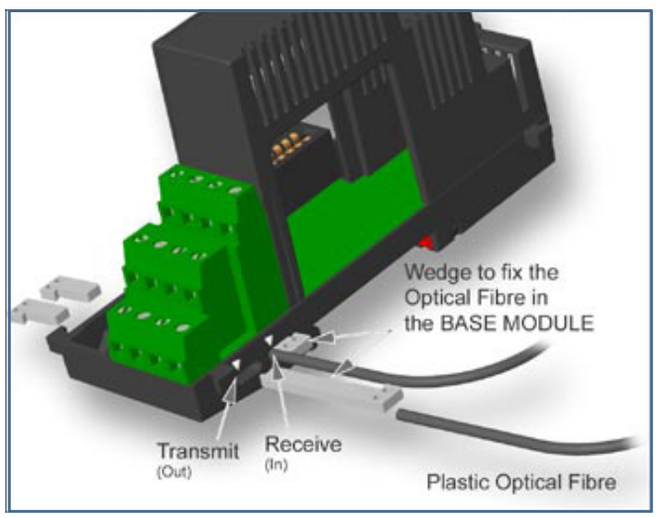
4. Next, the optical fibre is pushed into the hole until it is in line with the edge of the hole inside the base module. Now the electronics module is refitted.

Note!

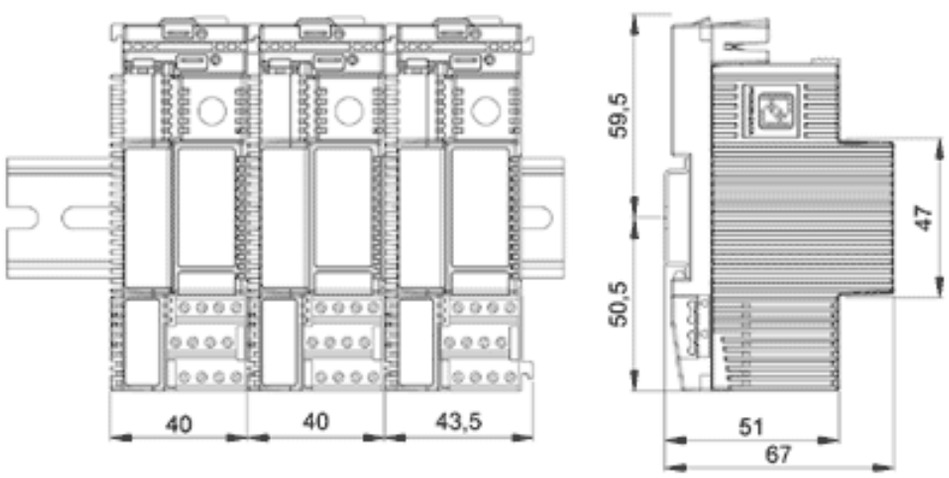
The holding wedges are delivered in kits with short version wedges for left side mounting and long version wedges for right side mounting. Always use the proper version, depending on left or right side mounting.

5. To ensure that the Optical Fibre is retained under all operational conditions, a holding wedge can be fitted.
6. Power is linked between the sub-clusters using the most convenient spade connections.





General Specifications



Dimensions in mm.

Weight	140 grams approx.
Power supply	18 to 32 VDC
Operation Temperature	–25 °C to + 70 °C
Storage temperature	–40 °C to + 85 °C

Maritime Approvals

Meets the requirements of all the major international marine classification societies.

For more information see PDS for the PD Series 600 Introduction.

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