

# F11

## Fieldbus Power Hub



# Installation Instructions

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## 1 OVERVIEW

The Relcom Power Hub (F11) is the next generation of the popular Power Hub. Ideal for bench-tops, labs, demonstrations and test setups, the Power Hub is a mini fieldbus segment in a box—just add devices. When powered with the wall mounted power supply (included), the Power Hub can power a FOUNDATION fieldbus™ H1 or Profibus PA segment.

## 2 DESCRIPTION

The Power Hub is a combined bulk power supply, fieldbus power conditioner, two built-in terminators, five ports for attaching devices (Device Ports), and an Auxiliary Port for expansion and connection of additional devices. It functions as a zero length homerun with spurs (star topology).

The Power Hub provides a minimum of 30mA of current for each Device Port. If the current needs of a fieldbus segment exceed the capability of a Device Port, the Auxiliary Port can also be used to provide additional current. The Power Hub can supply up to 315mA of power conditioned current for all Device Ports and the Auxiliary Port.

Current limiting SpurGuards are built-in to protect each Device Port. Each SpurGuard limits the current draw of an attached cable and device so that a short circuit in a spur cable or device will not take down the entire segment. The remaining devices on the segment continue to operate normally. The Power Hub also has an Auxiliary Port current limiter that protects against Auxiliary Port short circuits.

## 3 COMPONENTS AND ACCESSORIES

Part numbers and their descriptions are given below.

| PART No. | DESCRIPTION                                 |
|----------|---|
| F11      | Fieldbus Power Hub                          |
| FCS-A11  | Battery Pack (Power Hub power in the field) |
| FCS-A06  | Heavy-duty DIN rail end stop                |
| FCS-A01  | 35mm DIN rail, aluminum, 1 meter            |

## 4 MECHANICAL

### 4.1 DIN-rail Mounting

If needed, the Power Hub can be mounted and secured on a DIN rail. It is designed for mounting on 35mm x 7.5mm T-section "top hat" DIN rail and uses an integrated DIN-rail clamp to hold it onto the rail.

### 4.2 Battery Pack Mounting

For work in remote areas with no AC power available the Power Hub can also be coupled with a battery pack (accessory FCS-A11) for short-term power in the field (see Figure 1). DIN rail mounting is used to fasten the Power Hub to the Battery Pack.

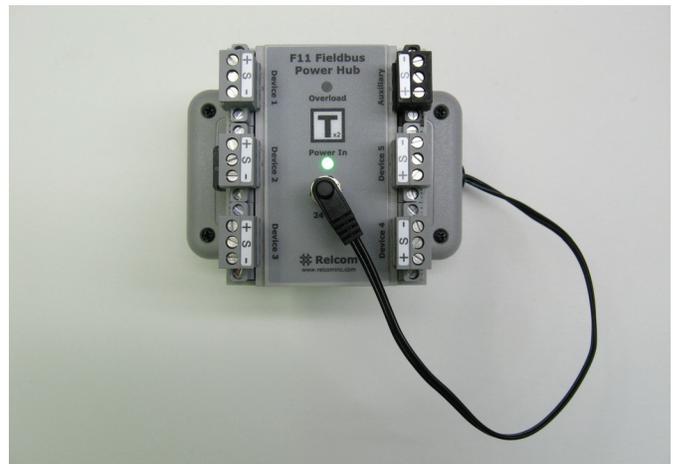


Figure 1: Power Hub Mounted on Battery Pack

### 4.3 Mounting Procedure

The Power Hub is mounted to the DIN-rail by hooking the side opposite the DIN-rail latch to the DIN Rail. The latch is then pulled open and the Power Hub is then pivoted to fit on the DIN-rail. Then the latch is released holding the Power Hub on the DIN-rail.

### 4.4 Removal from DIN-rail

To remove the Power Hub from the DIN-rail, open the DIN rail latch and then pivot the Power Hub and remove it from the DIN-rail.

## 5 ELECTRICAL CONNECTIONS

Fieldbus devices can be connected to the Power Hub with shielded twisted pair fieldbus cable (Figure 2). Unshielded and untwisted cable may be used for very short cable lengths. The controller or host, if present, is also considered to be a device. The maximum recommended spur length (length off of the trunk) is 120m.

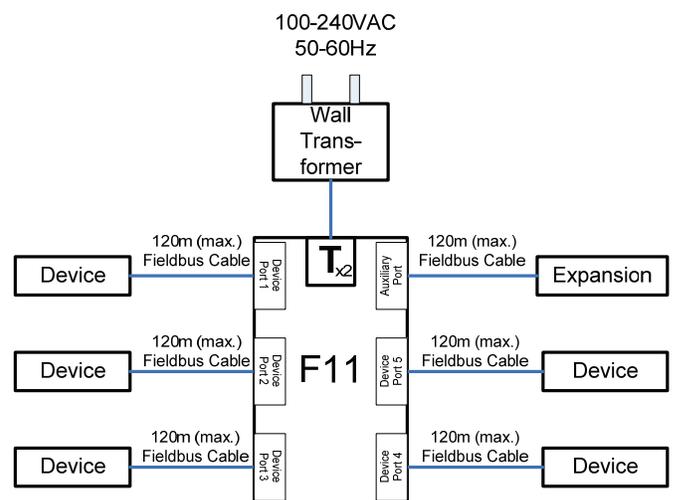


Figure 2: Power Hub Electrical Connections

## 5.1 Power Connections

The plug-in wall transformer has an input voltage range of 100-240VAC (50-60Hz) with a 24V output. Adapters are supplied with the power supply for four different country power outlets (North America, Europe, UK, and Australia).

The wall mounted power supply is plugged into an AC receptacle and into the circular connector on the top of the Power Hub.

## 5.2 Fieldbus Terminators

The Power Hub includes two built-in fieldbus terminators. No external terminators are required.

## 5.3 Fieldbus Connections

Wire connections to the Power Hub are made using high quality pluggable screw terminal connectors. Pluggable connectors allow easy connecting, disconnecting, and moving of devices for reconfiguration, maintenance, and troubleshooting. Two hold-down screws on each connector ensure it stays in place. There are six 3 way connectors. Each connector provides (+), (-) and cable shield (S) connections. See section 5.4 for information on cable shield grounding.

To connect a device, cut and strip the +, -, and shield wires, insert them into the terminals, and tighten the screw terminals (the terminals can accept 28 AWG to 12 AWG conductor sizes). Plug the connector into a Device Port or the Auxiliary Port and tighten the hold-down screws.

## 5.4 Fieldbus Cable Screen/Shield

The Power Hub connects the fieldbus screen/shield (marked 'S') for all Device Ports and the Auxiliary Ports. This connection is then common for all ports. The wall power supply and the Power Hub do not ground the shield, so if grounding is desired a connection should be made from one of the shield terminals to ground.

## 6 POWER and OVERLOAD INDICATORS

Power In and Overload LED's indicate Power Hub status. The green Power In LED indicates that input power is supplied. A red Overload LED indicates a Device or Auxiliary Port short condition.

## 7 TROUBLESHOOTING

- Check that the green Power In indicator is lit and that the red Overload indicator is off.
- Check the condition of wire connections, terminations, and shields.
- Check the DC output voltage on one of the fieldbus connectors with a multi-meter or an MTL/Relcom FBT-6.
- Check that there are no signs of damage.