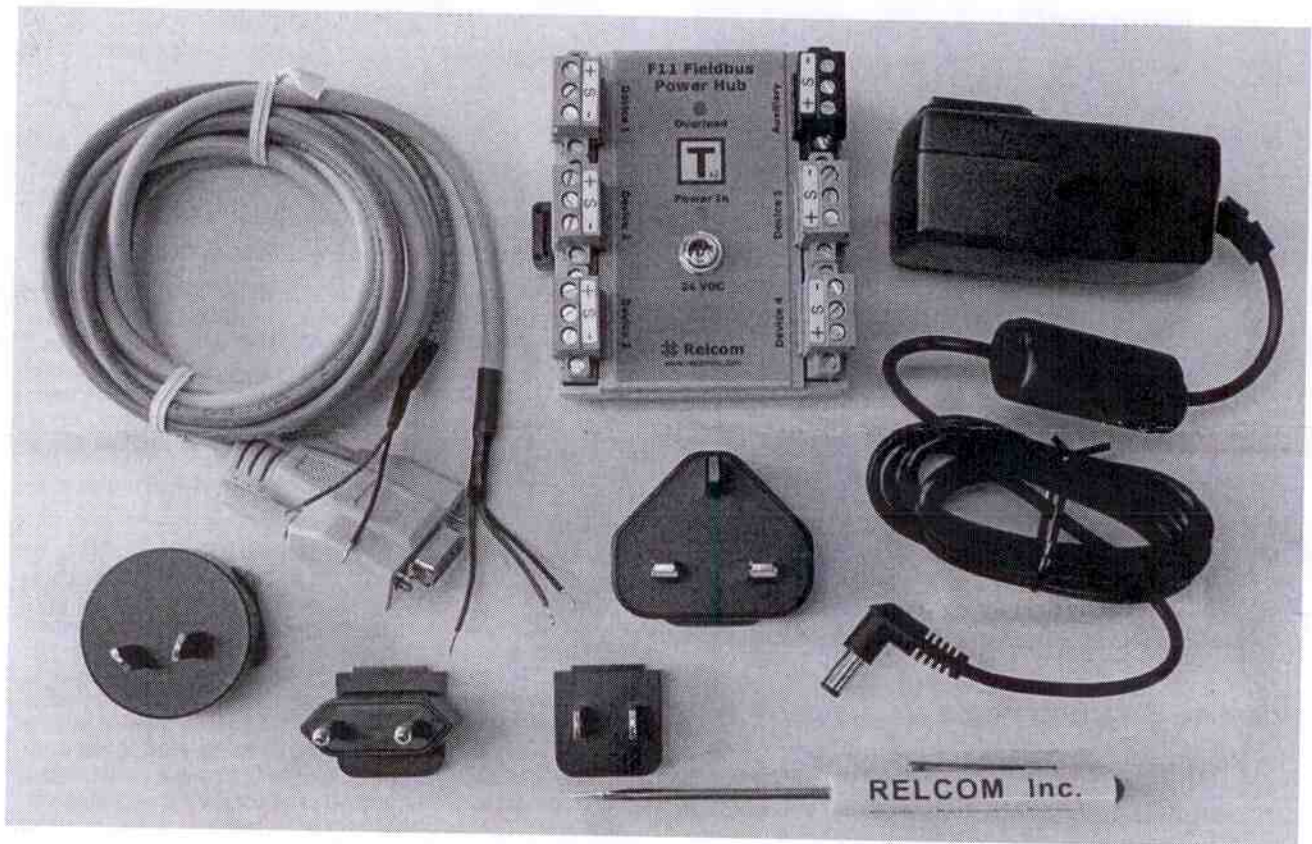


F11-Labkit

Relcom Fieldbus Labkit



Installation Instructions

 **Relcom**
www.relcominc.com

1 OVERVIEW

The Relcom Fieldbus Labkit (F11-Labkit) contains the next generation of the popular Power Hub along with a pair of cables (FCS-A05). This combination is a convenient kit with everything needed to get a Fieldbus segment running. It provides for connection of a Fieldbus device and a host such as the National Instruments USB, PCMCIA, or PCI interface cards.

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-Labkit	Relcom Fieldbus Labkit
F11	Fieldbus Power Hub
FCS-A01	35mm DIN rail, aluminum, 1 meter
FCS-A05	9pin Dsub cable, FF cable assembly
FCS-A06	Heavy-duty DIN rail end stop
FCS-A11	Battery Pack (Power Hub power in the field)

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.

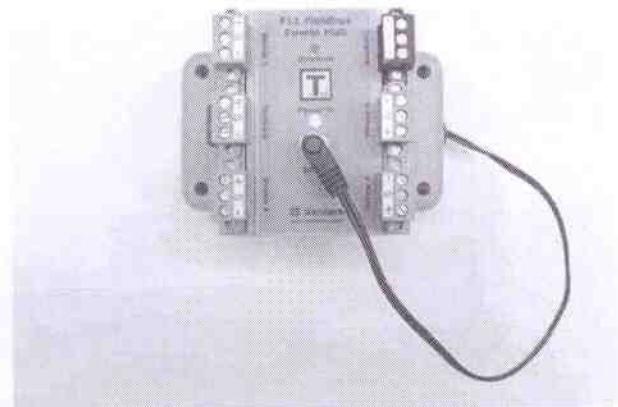


Figure 1: Power Hub Mounted on Battery Pack

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.

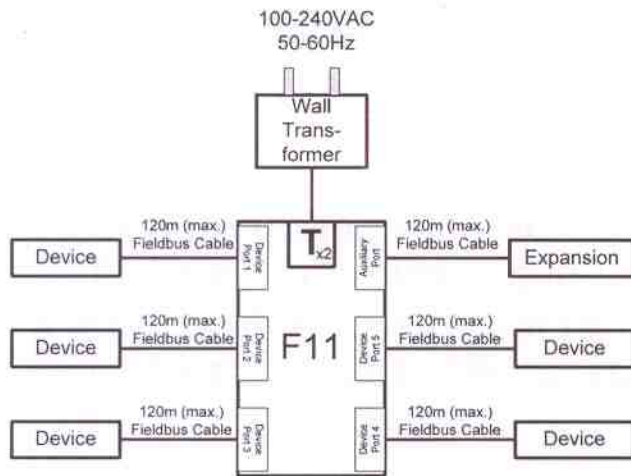


Figure 2: Power Hub Electrical Connections

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.

5.5 Cable with 9 pin Connector

The cable with the 9 pin Dsub connector at one end is used to connect to a National Instruments Fieldbus Interface device. The following figure shows how the cable is wired to the Power Hub connector. Note that the green wire is a shield connection and will likely be connected to the ground on the PC.

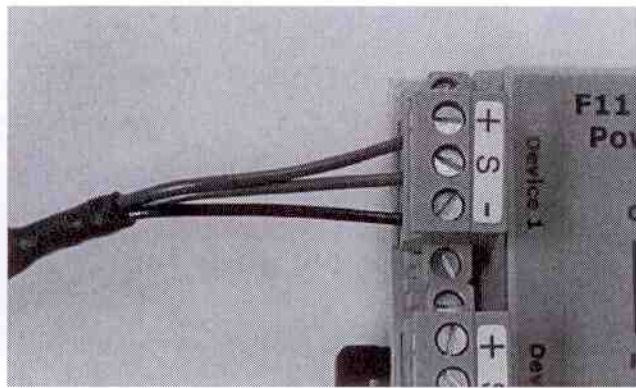


Figure 2: Power Hub Electrical Connections

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 (or overload) 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.

Annex 1 - Conforming Products

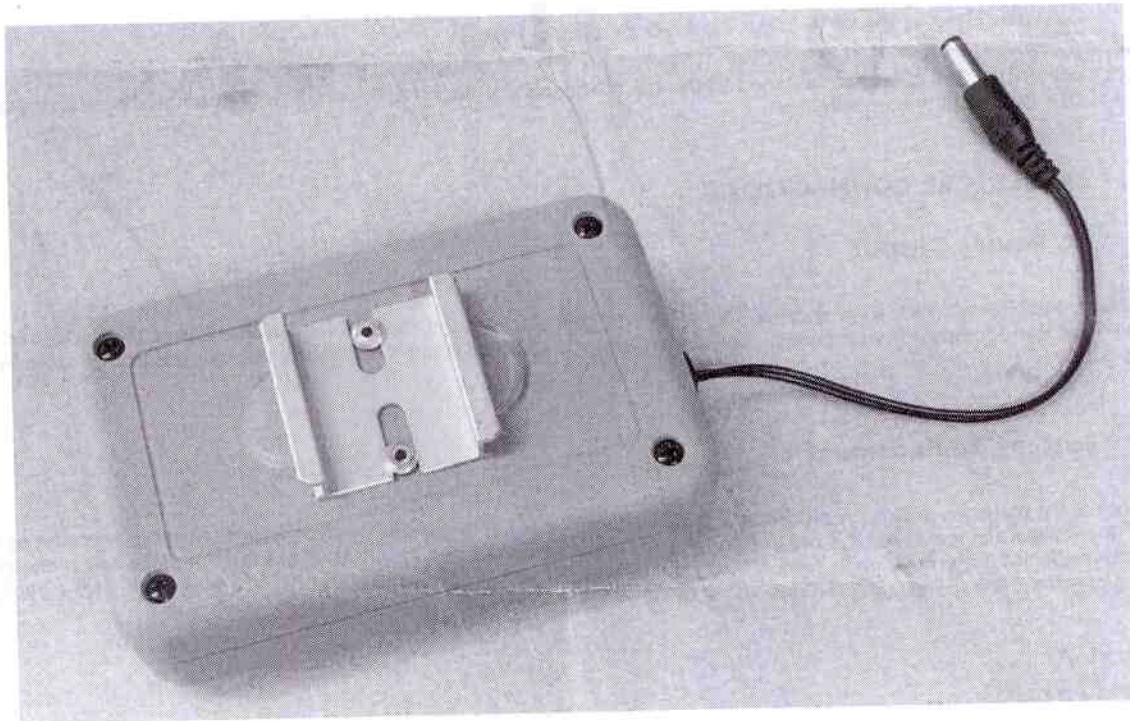
Product	Description	EMC ¹	LVD ²	ATEX ³	Cat1/Cat2 ATEX Cert. No.	Cat3 ATEX Cert. No.
F11	Fieldbus Power Hub	Yes	Yes	N/R	None	None
F11-LABKIT	Fieldbus Power Hub with 2 Cables	Yes	Yes	N/R	None	None
F11-YK2	Fieldbus Power Hub with 6 Cables	Yes	Yes	N/R	None	None

Notes relating to CE Marking:

1. Entries in this column may be:
 'Yes' – Product conforms to the EMC Directive; 'N/R' – Product is not required to conform to the EMC Directive
2. Entries in this column may be:
 'Yes' – Product conforms to the LVD Directive; 'N/R' – Product is not required to conform to the LVD Directive
3. Entries in this column may be:
 'Yes' – Product conforms to the ATEX Directive; 'N/R' – Product is not required to conform to the ATEX Directive

FCS-A11

Battery Pack for Relcom Power Hub



1 OVERVIEW

The FCS-A11 Battery Pack is a self contained power source for the Relcom Power Hub. Using it with the Power Hub allows the user to power a Fieldbus device in a remote area where the Fieldbus infrastructure does not yet exist and no AC power is available. Fieldbus devices may then be configured in the field using a Fieldbus configuration device such as the National Instruments Configurator or the Emerson 375.

2 DESCRIPTION

The FCS-A11 Battery Pack consists of an enclosure that houses user replaceable 9V batteries. A short cable delivers power from the batteries to the Relcom Power Hub. An internal self resetting fuse is provided for safety in case of an overload. For user convenience, a short piece of DIN Rail is fixed to the FCS-A11 case to allow attachment of the Relcom Power Hub. This makes for a convenient way to carry the two devices.

Instructions



3 MECHANICAL

3.1 Mounting

The FCS-A11 Battery Pack is not intended to be permanently mounted. It comes with rubber feet on its base and is usually placed on a horizontal surface (table).

3.2 Connecting a Power Hub to the Battery Pack

A short piece of DIN Rail has been fastened to the top of the Battery Pack. A Relcom Power Hub may be attached to this length of DIN Rail for user convenience.

4 ELECTRICAL CONNECTIONS

4.1 DC Power Output

The Battery Pack comes with a short cable and DC Power connector that mate with the Relcom Power Hub. Connect the cable to the Power Hub to supply it with power. To prevent unnecessarily draining the battery, remove the power cable from the Power Hub.

4.2 Battery Replacement

The internal 9V batteries may be replaced by removing the four (4) case screws on the top of the unit (same side as the DIN Rail). Once these are removed, the case top may be removed. The three (3) batteries are held in place and make connection with battery holders. Remove each battery and replace with a fresh one (all batteries should be replaced at the same time). Restore the cover and fasten with the four (4) screws.

5 TESTING

5.1 Battery Status

The status of the batteries is most reliably determined by testing the Battery Pack with a voltmeter. Set the voltmeter on DC Volts and measure the battery voltage using the DC Power connector. One probe would be inserted into the hole in the connector, and the other on the outer diameter of the metal barrel. Fresh batteries will measure near 29VDC. Fully depleted batteries will be at or below 18VDC.

Battery status cannot be reliably determined by measuring the voltage on the Power Hub. This is because of the circuitry within the Power Hub.

6 ROUTINE MAINTENANCE

There are no user serviceable parts in the Battery Pack except for the batteries. If the unit is damaged in some way or does not work properly, please contact Relcom for service or replacement.