- **Real time monitoring of HubBus network**

- **Configuration of HubBus system modules**

- **View module information and diagnostic data**

- **Performs firmware upgrades of HubBus system modules**

- **MicroSD card for configuration storage, activity logging and firmware updates**

- **Bluetooth for wireless data retrieval and file handling**

DESCRIPTION

The handheld has a large and bright backlit LCD screen which is easy to read, providing information at a glance. Menu-specific content makes for easy and intuitive navigation. Additionally, it has large buttons with positive tactile response for ease of use even with gloves on.

In the HubBus network diagnostics mode, the user may monitor in real time the status of all 2000 HubBus digital I/O channels, value of analogue transmissions, simulate network devices, status of emergency and auxiliary interrupts and the current network configuration status.

There is MicroSD card support which provides additional storage capacity. MicroSD cards may be used to deliver firmware upgrades, configuration may be stored and retrieved from the HubBus modules and usage activity logged to the device.

Four standard off the shelf AA sized alkaline batteries provide power not only for the handheld but also for HubBus modules which may be unpowered otherwise during the configuration process. An on-screen indicator displays the current status of the batteries.

A built-in Bluetooth transceiver is available for transferring data and files to and from a PC.

The HHP1-H comes with a protective rubber case. The HHP1-H may be removed from the rubber case for battery replacement and access to the MicroSD card slot. The protective rubber case has a built-in kickstand for ease of viewing the display.

The front panel of the HHP1-H consists of a back-lit LCD display and 16 multi-functional buttons.

The HHP1-H is supplied with two cables. The HubBus network monitoring cable has a boot-laced end to allow the user to fit their desired type of plug to interface to the HubBus network. The HubBus module configuration has three connectors on the cable. The 8-pin Molex Mini-Fit connector for connection to the programmer, the 4-pin connector is for connection to the HubBus module display and interface board's configuration port and the 10-pin Molex Mini-Fit connector is for direct connection to HBTX2D transmitters and pullkey stations.

All configuration files and event log file are human readable. Configuration files may be modified on a PC and uploaded again to the MicroSD card for upload to other modules.

The handheld itself is not aware of any device's configuration. All configuration information, description and value range come from the device itself. This means the handheld itself does not need to be updated when ever there is a new HubBus module or firmware update.

The configuration protocol complies to the functional safety requirements for configuration, bounds checking and operator verification of parameter changes. Additionally, device interaction and parameter configuration is logged to non-volatile storage.

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SPECIFICATIONS

General	
Name	HubBus Handheld Programmer
Type	HHP1-H
Interface	
Number of HubBus terminals	1
Configuration Port (TTL)	3.3V - 19200/8/1/E
Configuration Port (RS485)	2-Wire - 19200/8/1/E
Wireless File Transfer	Bluetooth 2.1
Mass Storage	MicroSD (8GB)
Terminals	
Configuration	8-Pin Molex Mini-Fit
HubBus	2-Pin Molex Mini-Fit
Physical	
Dimensions (Enclosure)	102mm (W) x 33mm (D) x 191mm (H)
Dimensions (Protective Case)	116mm (W) x 47mm (D) x 224mm (H)
Mass	800g
Ingress protection	IP20
Enclosure Material	ABS (Acrylonitrile Butadiene Styrene) (UL94HB)
Enclosure Colour	Black
Protective Case Colour	Alert Red
Environment	
Operating temperature	0ºC to 40ºC
Operating relative humidity	Max. 80% non-condensing
Pollution Degree	2
Installation Category	1
Altitude	2000m
Electrical	
Power Supply	4 x AA Cells
Power Consumption	45mA (Backlight Enabled)
Battery Life (Estimated)	100mA (Backlight + Bluetooth)
Operating Voltage	40 Hours (2000mAh Cells)
HubBus Current Consumption	10mA max. @ 12-48VDC
HubBus Unit Load	2
Configuration Terminal Supply	3.3VDC (10mA)
Transmitter Supply	8-12VDC (10mA)
Inactivity Auto Power Off	15 minutes
Display	
LCD	Transflective
Resolution	128 x 64 pixels
Backlight	LED

ORDERING DETAILS

DESCRIPTION	ORDER CODE
HubBus Handheld Programmer	**HHP1-H**

CONNECTION DIAGRAM

HubBus Port   Configuration Port

Terminals

HHP1-H HubBus Port					
2	Signal-	HubBus	HubBus	Signal+	1

HHP1-H Configuration Port					
5	+3V3	Pwr	Pwr	+3V3	1
6	B-	RS485	HBTX2D	+9V0	2
7	A+	RS485	Gnd	0V	3
8	Rx	Config	Config	Tx	4

Cables
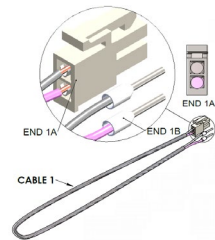
Network Interface Cable
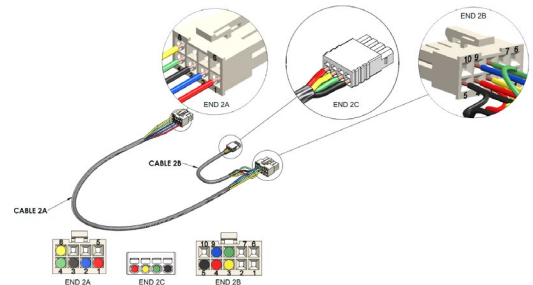
Module Interface Cable

SAFETY DATA

The HHP1-H is used for the configuration of safety related and non-safety functions.

The programming device itself is not a safety subsystem, but meets the requirements of ISO 13849-1, section 4.6.4, to ensure correct programming and verification of programmed data.

See HubBus Safety Manual 125-267-12 for details.

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