



Communicate with, configure and monitor HART® smart devices in safe and hazardous areas

## MTL4840 SERIES



- ◆ SIL3 rating
- ◆ Connect up to 7936 loops to a single PC
- ◆ LED indication of loop being scanned
- ◆ Easily scalable modular system

- ◆ Compact, ideal for new projects and upgrades
- ◆ Channel to channel isolation option
- ◆ HART signal conditioning

The **MTL4840 HART® connection** system provides a simple interface between smart devices in the field and HART® instrument management software run on a PC.

The system is based on 16-channel modularity to provide a compact, easily configurable and expandable system. Using a standard RS485 serial link, up to 7936 individual HART® devices can be connected to a single workstation.

For the optimum solution, choose from a range of general purpose and IS termination boards. For maximum flexibility the BPHM64 HART® backplane locates an MTL4841 communications module and up to four MTL4842 interface modules. General purpose HART® connection units and IS backplanes are also available, each fitted with an interface cable for connection to the BPHM64 HART® backplane. MTL4841 and MTL4842 modules can also be located on HMU16 termination boards for general purpose applications or on BPMH16 / BPMH16U / BPSH16 / BPSH16-32 backplanes for IS isolator requirements.

The **DIN-rail mounting** HCU16 and HCU16AOHART® connect to 16 general purpose field instruments while maintaining channel to channel isolation. Resistor conditioning options are compatible with all I/O cards. It allows pass-through connections for transmitter power supply, input signal and common.

The **HCU16AO** unit includes HART® filters for I/O cards incompatible with HART® signals.

**BPMH16/BPMH16U/BPSH16/BPSH16-32** backplanes with MTL4840 HART® modules fitted, connect either 16 or 32 IS field instruments. Adapter cards are available for the BPMH16U for easy integration to I/O cards and users have a choice of a DIN-rail mounting option.

**Numerous features** may be included in the connection units and backplanes, as required. Channel to channel isolation; resistors where required for HART® signal conditioning; and HART® filters for analogue systems where the output signal interferes with HART® data or becomes unstable with the presence of the HART® signal.

**Customised backplanes and connection units** are available to provide direct connection from DCS I/O cables, replacing the standard termination board.

**MTL HART multiplexers** are certified by BASEEFA as a safety related sub-system to IEC61508. See the SR Series Interfaces section of this catalogue.



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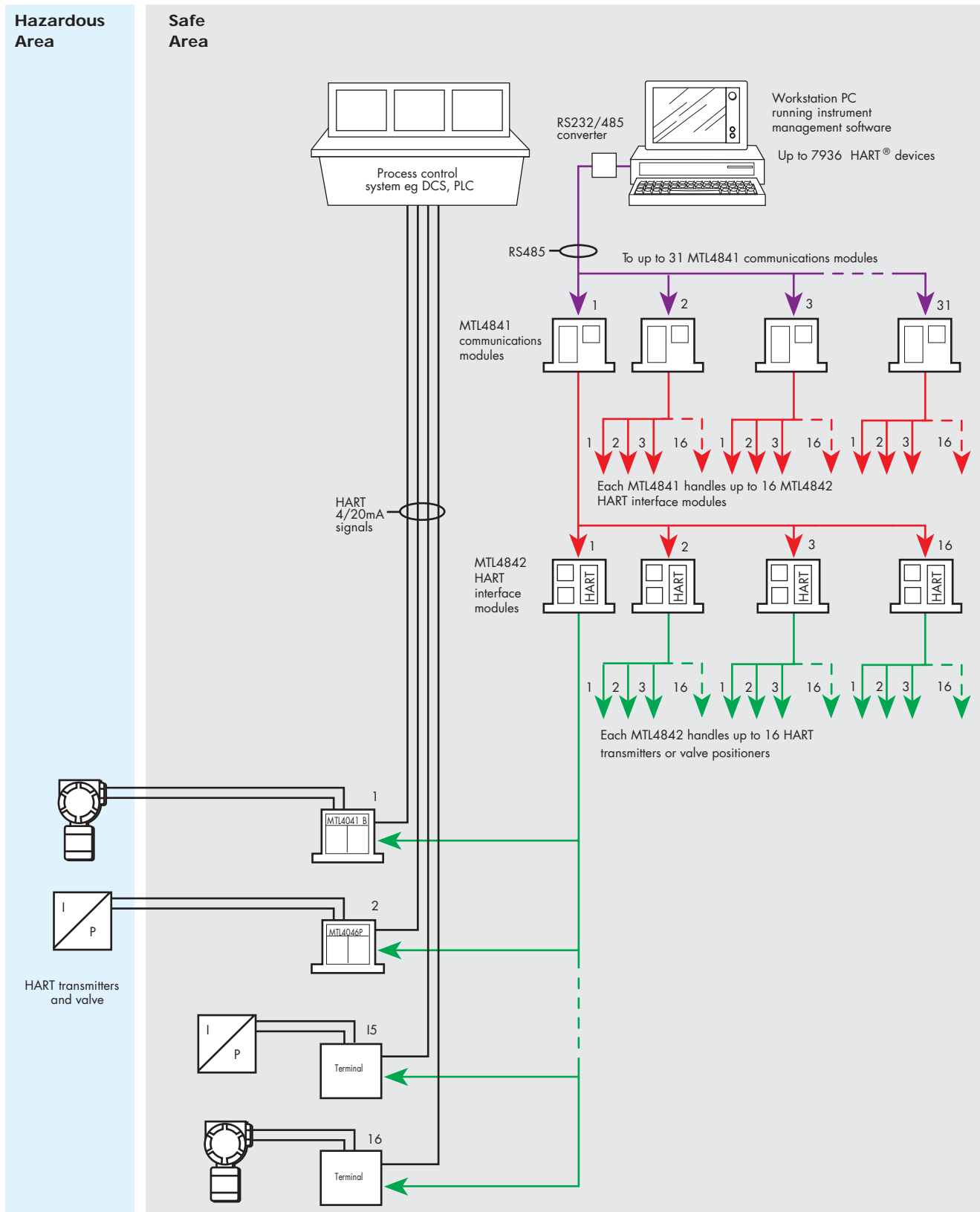
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# MTL4840 SERIES SYSTEM DIAGRAM



# MTL4840 SERIES MODULE SPECIFICATIONS

## MTL4841 COMMUNICATIONS MODULE

### Host system interface

RS485 2-wire multidrop  
Up to 31 MTL4841 modules can be connected to one host station  
Unit address: switch-selectable on top of module

### Isolation

RS485 output isolated from backplane power supply

### Serial communication parameters

RS485 Baud rate: 1.2, 9.6, 19.2, 38.4kbaud, switch-selectable on top of module  
RS485 highway length: up to 1km

### MTL system interface

Links with up to 16 MTL4842 HART® interface modules via interface bus on backplane/ribbon cable

### LED indicators

Green: one provided for power and status indication

### Power requirements

Powered from backplane

### Power consumption

<1.0W

### Instrument management software supported

See 'Instrument management software'

## MTL4842 HART® INTERFACE MODULE

### MTL systems interface

Links up to 16 loops via backplanes  
Receives multiplexer control signals via interface bus from MTL4841 and selects one channel for communication

### Unit address

Switch selectable on top of module

### Interface bus

Total length of interface bus between module 1 and module 16 must not exceed 4m

### LED indicators

Green: one provided for power  
Amber: one to indicate unit is selected by MTL4841  
Red: four to identify loop address

### Power requirements

Powered from backplane

### Power consumption

<0.1W

## MTL4000 SERIES MODULES

(See 'MTL4000 Series' for detailed specifications and circuit diagrams)

**MTL4041A:** Current repeater, 4/20mA, passive input for smart transmitters

**MTL4041B:** Repeater power supply, 4/20mA, for 2- or 3-wire transmitters

**MTL4041P:** High power repeater power supply, 4/20mA, for 2- or 3-wire transmitters

**MTL4044:** Repeater power supply, 4/20mA, two channel, for 2 wire transmitters

**MTL4046/C:** Isolating driver, for HART® valve positioners

**MTL4046P:** High power isolating driver for HART® valve positioners

## COMMON SPECIFICATION

(applies to all MTL4840 and 4000 Series modules)

### Location of units

Safe area (MTL4840 can be located in Div2)

### Long-term drift

No recalibration necessary

### Ambient temperature limits

-20 to +60°C continuous working  
-40 to +80°C storage

### Humidity

5 to 95% RH (non-condensing)

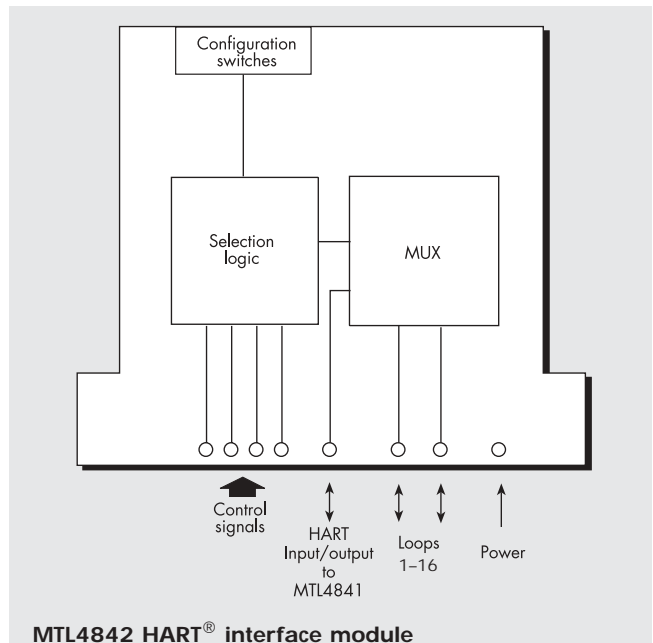
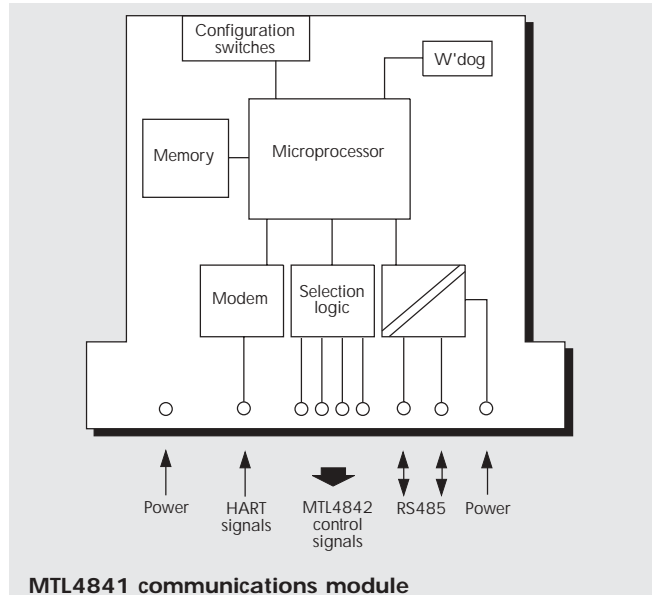
### Mounting

On MTL or custom backplanes which, in turn, can be surface or DIN-rail mounted.

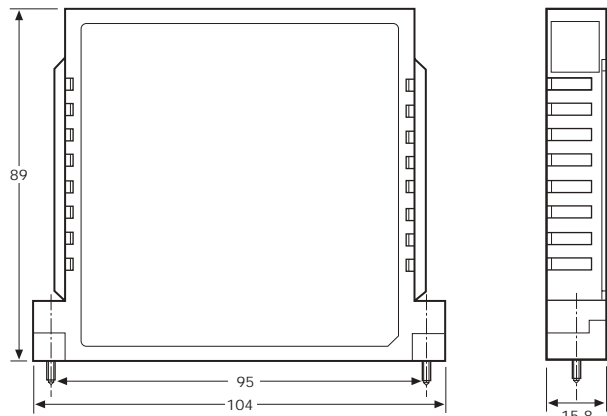
Mounting pitch 16mm

### Weight

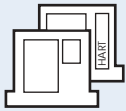
100g approximately



## DIMENSIONS (mm)



## MTL4840 SERIES ORDERING INFORMATION



### MTL4840 Series modules

MTL4841	HART communications module pre-configured for Cornerstone™ protocol
MTL4841-AMS	HART communications module pre-configured for AMS Intelligent Device Manager
MTL4841-PRM	HART communications module pre-configured for PRM
MTL4842	HART interface module communicates with up to 16 loops

## THE COMPLETE SYSTEM

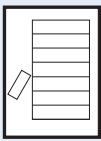
The following components form a complete system:

**MTL4840 HART® connection system** – provides simple connection to field instruments, using general purpose and IS termination boards.

**Personal computer** – running instrument management software and linked to MTL4841 HART communications modules by:

**Converter** – connecting the computer's RS232 port to the MTL4840 Series' backplane RS485 connector.

**Instrument management software**



### General purpose connection units

BPHM64	64 ch HART backplane
HCU16	HART connection unit
HCU16-P250	HART connection unit
HCU16-S200	HART connection unit
HCU16-S150	HART connection unit
HCU16AO	16 ch HART connection unit
HMU16	16 ch HART communication unit

HART interface connector  
 No parallel resistor, 0Ω link fitted in series  
 250Ω parallel resistor, 0Ω link fitted in series  
 No parallel resistor, 200Ω resistor fitted in series  
 No parallel resistor, 150Ω resistor fitted in series  
 With HART filters

### MTL4000 backplanes

BPMH16	16 ch backplane
BPSH16	16 ch backplane
BPSH16-32	32 ch HART backplane
BPMH16U	16 ch HART backplane

Safe-area multiway connector  
 Safe-area screw-clamp connector

Requires backplane adapter card (call MTL for options)

### Backplane accessories

ERK18	Earth rail kit
TSK18	Tagging strip kit
ELC38	38-way Elco connector
FUS02	Fuse kit, pack of 10
FUS16	Fuse kit, pack of 10
VMPH16	Backplane mounting plate

For BPMH16 and BPSH16 backplanes  
 For BPMH16 and BPSH16 backplanes  
 For BPMH16 safe-area connection  
 Protects MTL4841/4842  
 Protects backplane module positions 1 to 16  
 For DIN-rail and non-metallic surface mounting (BPMH16 and BPSH16 only)  
 Pack of 40 - 4 required for each backplane  
 Pack of 40 - 4 required for each backplane  
 -xx specifies the cable length - max 4m  
 -xx specifies the cable length - max 4.5m

### Isolating interface modules and accessories

MTL4041A	Current repeater
MTL4041B	Repeater power supply
MTL4041P	High power repeater power supply
MTL4044	Repeater power supply
MTL4046	Isolating driver
MTL4046C	Isolating driver
MTL4046P	High power isolating driver
CCH01	Crimp connector header
CRC01	Large crimps
CRC02	Small crimps
SCC01	Screw-clamp connector
MPL01	Module position label, blank

4/20mA, passive input, for smart transmitters  
 4/20mA, for 2- or 3-wire transmitters  
 4/20mA, for 2- or 3-wire transmitters  
 2ch, 4/20mA, smart, for 2-wire transmitters  
 For HART valve positioners  
 For HART valve positioners  
 For HART valve positioners

Pack of 100

Pack of 100

Pack of 50

### Literature

INM4840	MTL4840 instruction manual
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**APPROVALS - for the latest certification information visit [www.mtl-inst.com/certs\\_1.nsf](http://www.mtl-inst.com/certs_1.nsf)**

<b>Country</b>	US
<b>Authority</b>	FM
<b>Standard</b>	Class 3600, 3611, 3810 Class 1, Div 2, Gps ABCD
<b>Product No.</b>	<b>Certificate No.</b>
MTL4841	3009149
MTL4842	3009149
HCU16	3009149
BPMH64	3009149



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