

Characteristics:

General description:

The HART® Termination Board model TB-D5001-HRT-004 allows the remote monitoring of any HART®-compatible 4/20 mA field loop. It is suitable for interfacing AI cards of safety PLCs with typical input impedance of 250 Ω and AO cards.

This is obtained by one locally mounted HART® Multiplexer Modem 5700 series and by terminal block interface connectors to access the relevant loops. The board is installed in series to the loops and is totally transparent to both transmitter and receiver.

The single TB-D5001-HRT-004 Termination Board supports 32 channels. Yet, it can be extended with additional TB-D5001-HRT-004 units (up to 8) to manage all 256 channels available on the HART® Multiplexer Modem 5700 series.

The Mux unit connects, via the RS-485 interface, to an external PC running an FDT-based software package (PACTware™, etc...) through a dedicated Device Type Manager (DTM). The PC can communicate with multiple Mux units, located on different boards, in a multi-drop RS-485 mode.

The HART® Termination Board TB-D5001-HRT-004 is SIL 3 certified as non-interfering with the signal loops.

Technical Data:

Supply:

24 Vdc nom (20 to 30 Vdc) reverse polarity protected, redundant terminal blocks, OR diodes to select higher supply source.

Connection: by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm².

2 LEDs indication: green.

Protection fuse: 2 A time lag (spare fuse provided on Termination Board).

HART® interface:

Connection: 32+32 screw terminal blocks to accommodate terminations up to 2.5 mm².

DC Isolation: dual capacitor for each channel.

Common mode voltage: up to 50 V.

Additional TBs interface:

Connection: 2 flat cable 10 poles male connectors (requires female mating connector).

Compatibility:

CE mark compliant, conforms to Directives:
2014/30/EU EMC, 2014/35/EU LVD, 2011/65/EU RoHS.

Environmental conditions:

Operating: temperature limits – 40 to + 70 °C, relative humidity 95 %, up to 55 °C.

Storage: temperature limits – 45 to + 80 °C.

Approvals:

SIL 3 conforms to IEC61508:2010 Ed.2.

Mounting:

Surface (Wall) or DIN Rail mounting: TB-OPT-001 is a Kit including hardware for mounting on wall and DIN rail.

Weight: about 620 g (excluding module and mounting options).

Location: installation in Safe Area or Ordinary Location.

Dimensions: Width 230 mm, Depth 130 mm, Height 125 mm.

Features:

- SIL 3 according to IEC 61508:2010 Ed. 2 (see Safety Manual ISM0436 for more information).
- Systematic capability SIL 3.
- Transparent Board for HART® Multiplexing of up to 32 analog signals (extendable to 256 channels with 7 additional TB-D5001-HRT-004 units).
- Suitable for interfacing AI cards of safety PLCs with typical input impedance of 250 Ω and AO cards.
- Redundant Power Supply connection by screw terminals.
- Supply is fuse protected and with LED indication.
- RS-485 interface terminals to communicate with the HART® Mux unit.
- HART® loop interface terminal block connectors.
- HART® channels isolated with dual capacitors (short circuit proof).
- Spare fuse provided.
- Includes hardware for Easy installation in three modes:
 - Wall mounting, M4 Threads,
 - Wall mounting, Self Threading,
 - Din Rail mounting.

Ordering Information:

Model: TB-D5001-HRT-004

Accessories:

Extension cables 15 cm CABF022

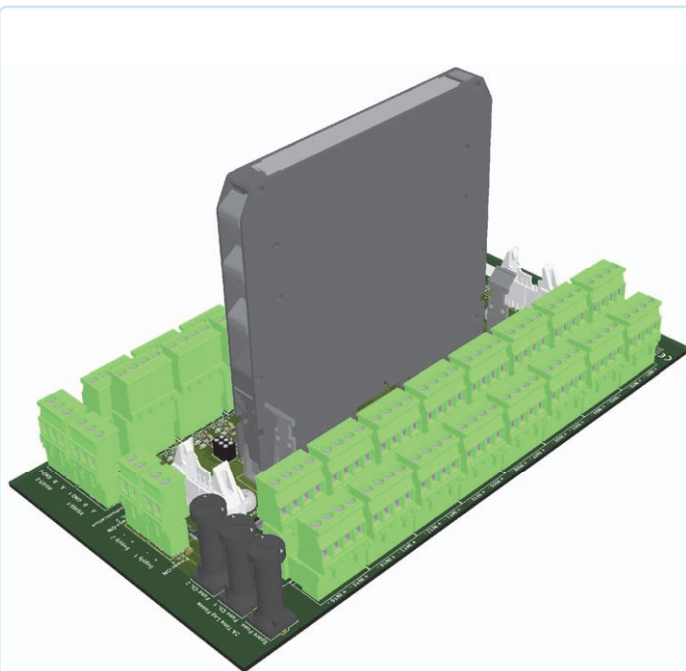
Extension cables 30 cm CABF023

Extension cables 50 cm CABF024

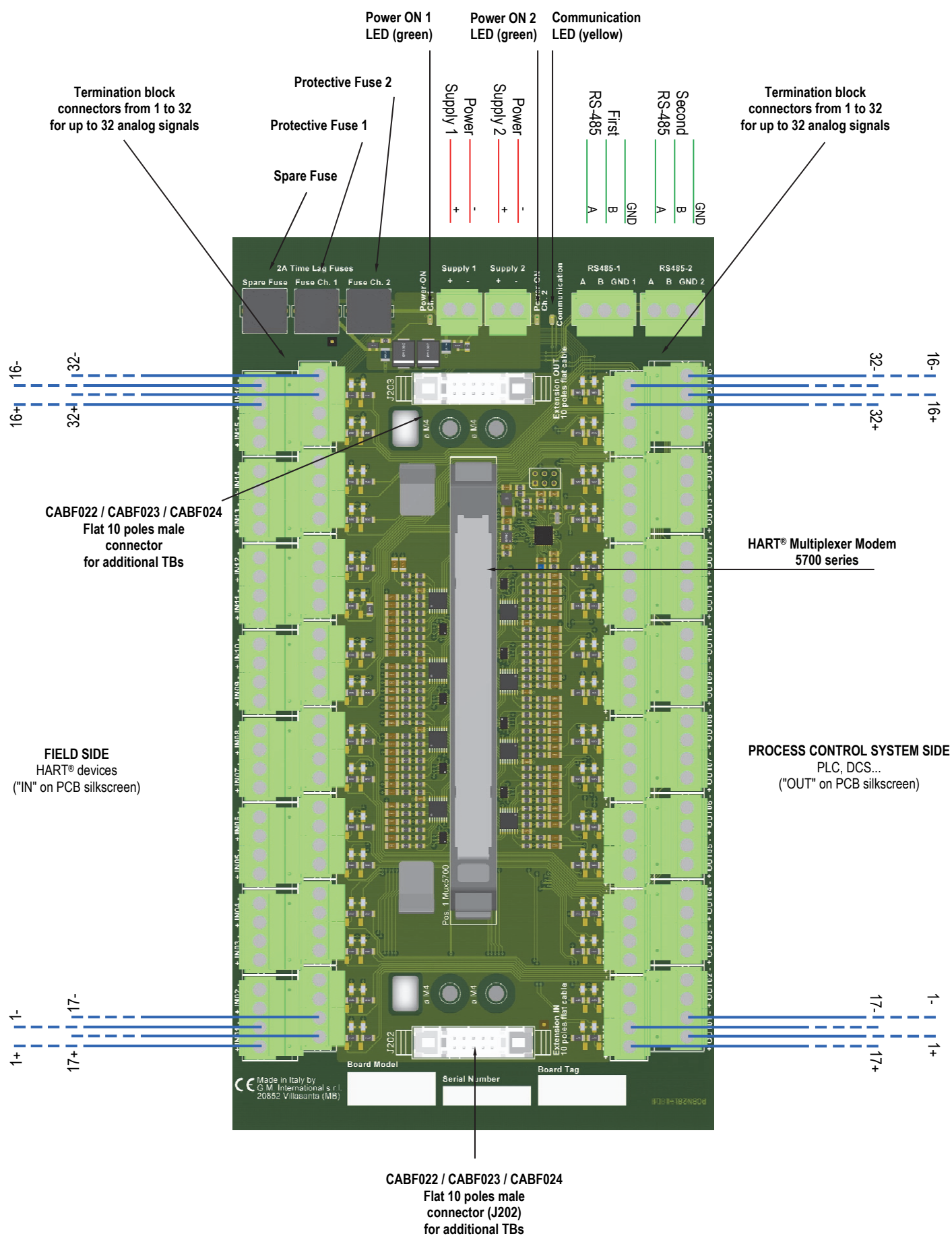
Included:

TB-OPT-001 Universal Board mounting kit

Image:

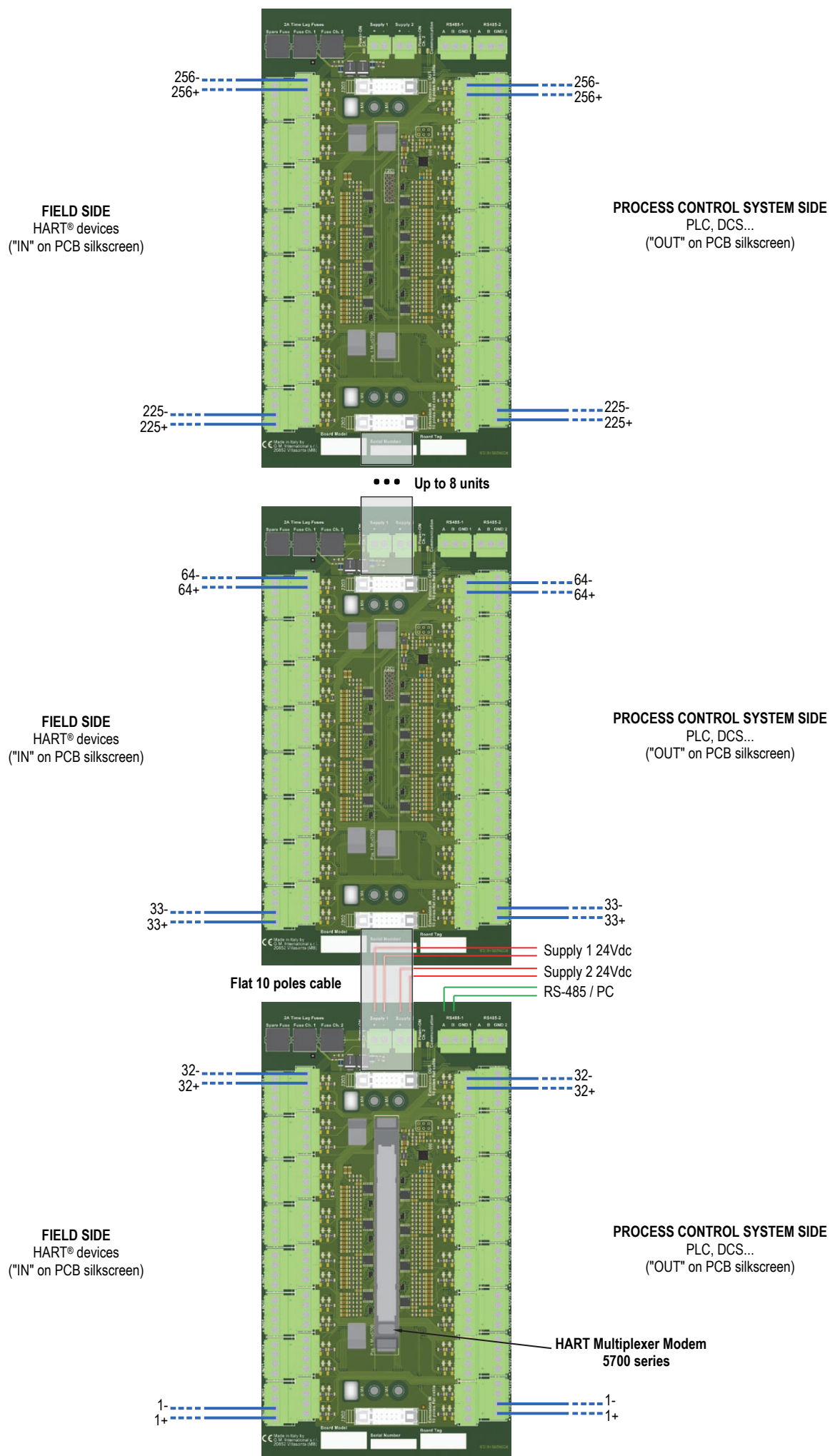


Termination Board Connection Diagrams:



Note: Do not swap field HART® devices (indicated by "IN" on PCB silkscreen) and process control system PLC, DCS... (indicated by "OUT" on PCB silkscreen) connections.

Termination Board Network:

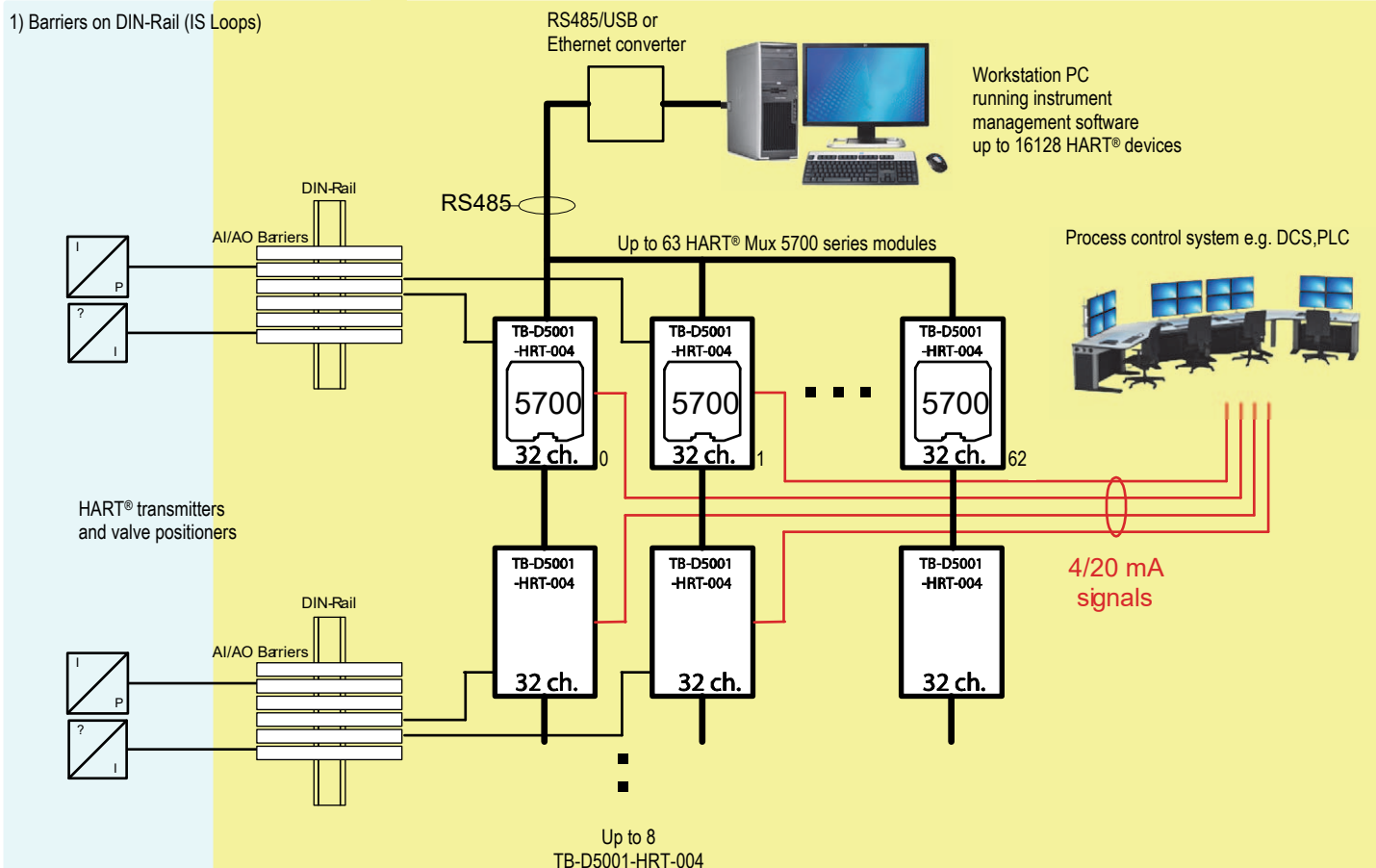


Loop Diagrams:

HAZARDOUS AREA ZONE 0 (ZONE 20) GROUP IIC,
HAZARDOUS LOCATIONS CLASS I, DIVISION 1, GROUPS A, B, C, D,
CLASS II, DIVISION 1, GROUPS E, F, G, CLASS III, DIVISION 1,
CLASS I, ZONE 0, GROUP IIC

SAFE AREA or ORDINARY LOCATION

1) Barriers on DIN-Rail (IS Loops)



2) Isolators on DIN-Rail or Direct Field Connections (Non-IS Loops)

