

Characteristics:

General description:

The HART® Termination Board model TB-D5001-HRT-007 allows the remote monitoring of any HART®-compatible 4/20 mA field loop. It is suitable for interfacing AI cards of safety PLCs with input impedance included from 0 Ω to 50 Ω.

This is obtained by one locally mounted HART® Multiplexer Modem 5700 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-007 Termination Board supports 32 channels. Yet, it can be extended with additional TB-D5001-HRT-007 units (up to 8) to manage all 256 channels available on the HART® Multiplexer Modem 5700.

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-007 is SIL 3 certified as non-interfering with the signal loops.

Functional Safety Management Certification:

G.M. International is certified by TÜV to conform to IEC61508:2010 part 1 clauses 5-6 for safety related systems up to and included SIL3.



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:

Input impedance:

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:

2014/34/EU ATEX, 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.

Safety Description:



ATEX: II 3G Ex nA IIC T4 Gc

IECEx: II 3G Ex nA IIC T4 Gc

non-sparking electrical equipment.

Approvals:

ATEX conforms to EN60079-0, EN60079-15 (pending).

IECEx conforms to IEC60079-0, IEC60079-15 (pending).

TÜV Certificate No. C-IS-272994-01 SIL 3 conforms to IEC61508:2010 Ed.2.

TÜV Certificate No. C-IS-236198-09, SIL 3 Functional Safety Certificate conforms to IEC61508:2010 Ed.2, for Management of Functional Safety.

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 Zone 2, Group IIC T4.

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-007 units).
- Suitable for interfacing AI cards of safety PLCs with input impedance included from 0 Ω to 50 Ω.
- 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-007

Accessories:

Extension cables 15 cm CABF022

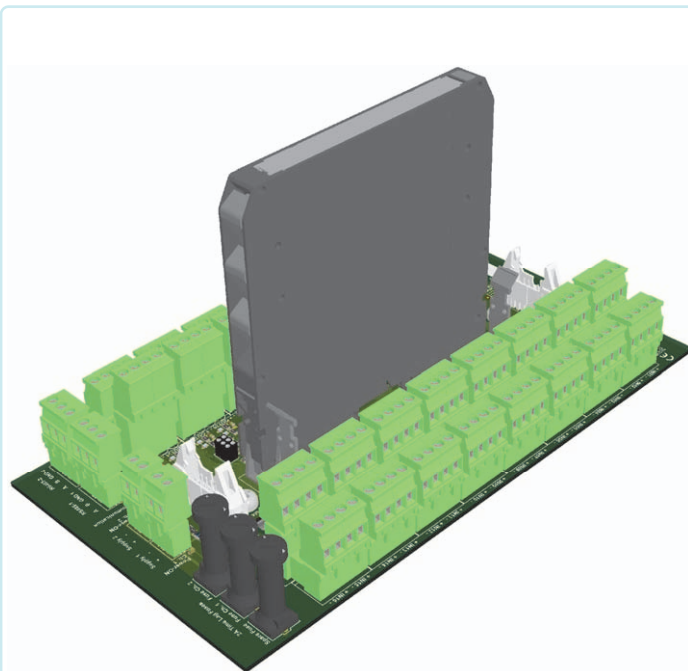
Extension cables 30 cm CABF023

Extension cables 50 cm CABF024

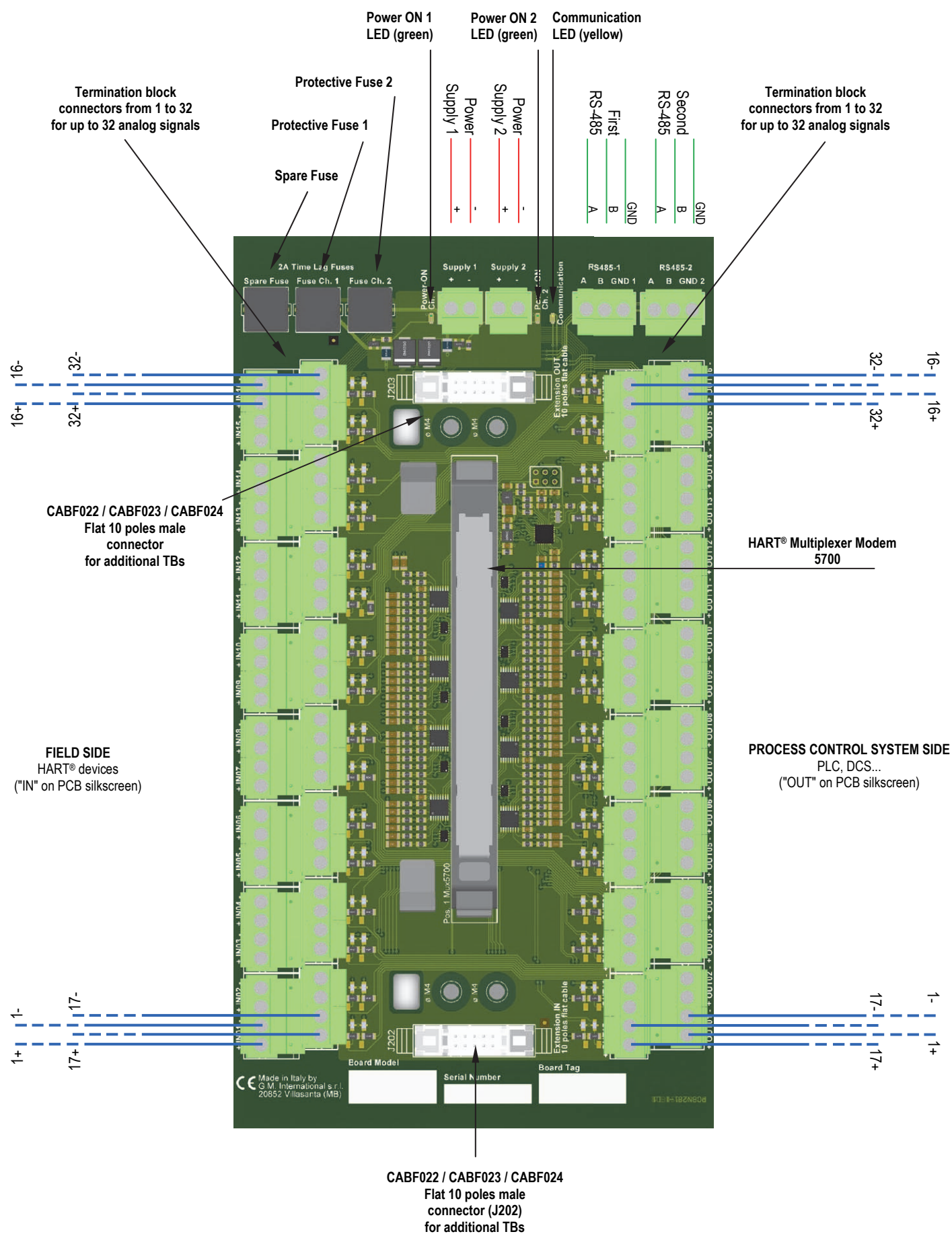
Included:

TB-OPT-001 Universal Board mounting kit

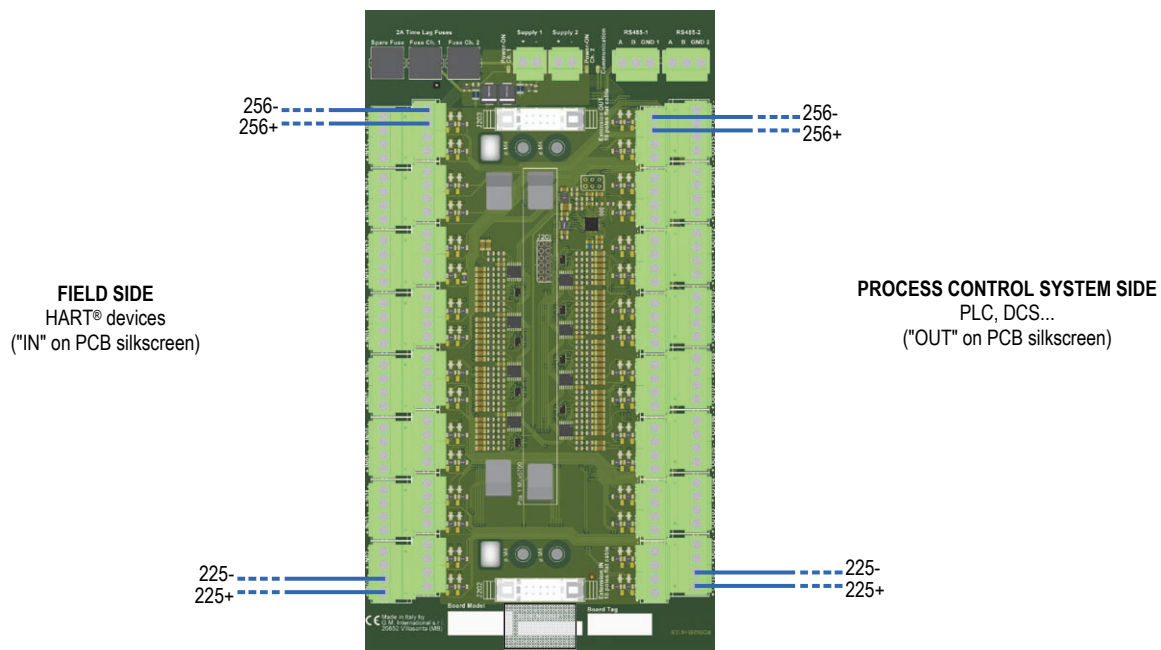
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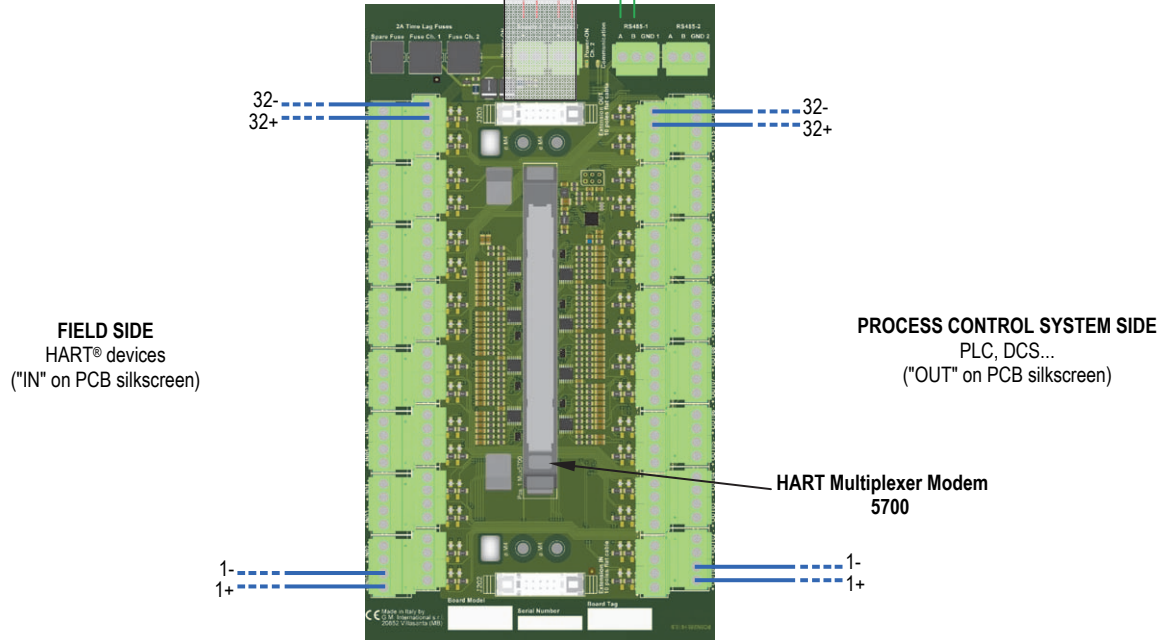
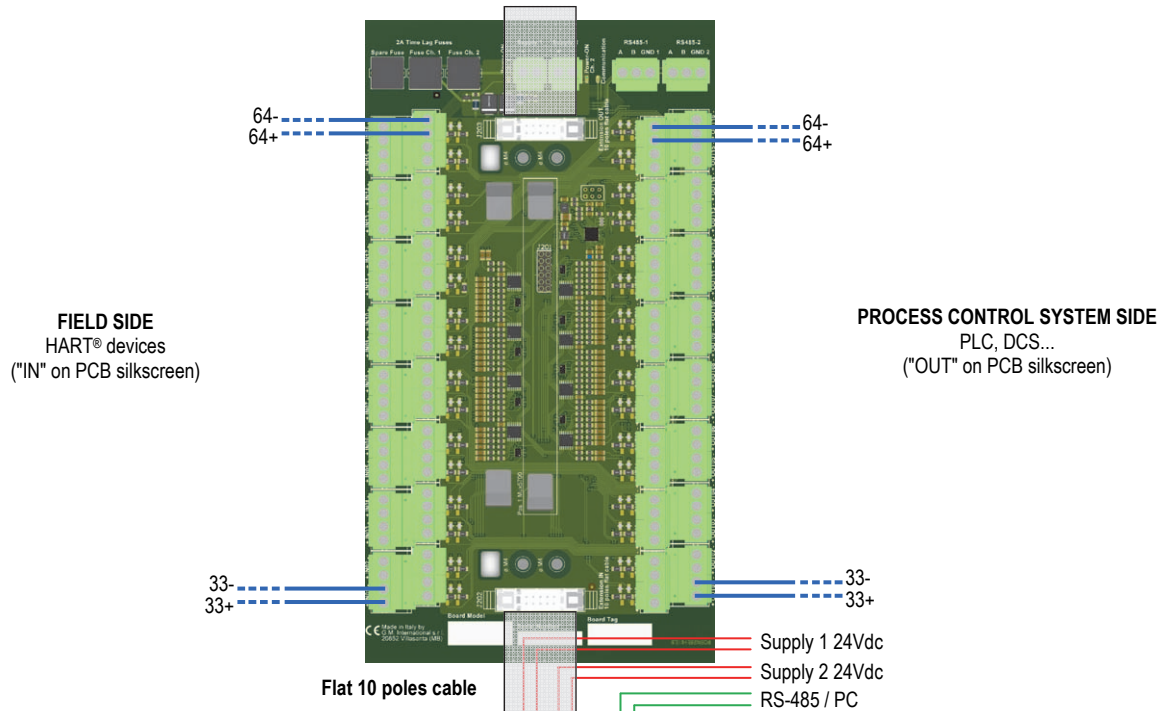
Termination Board Connection Diagrams:



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.



... Up to 8 units

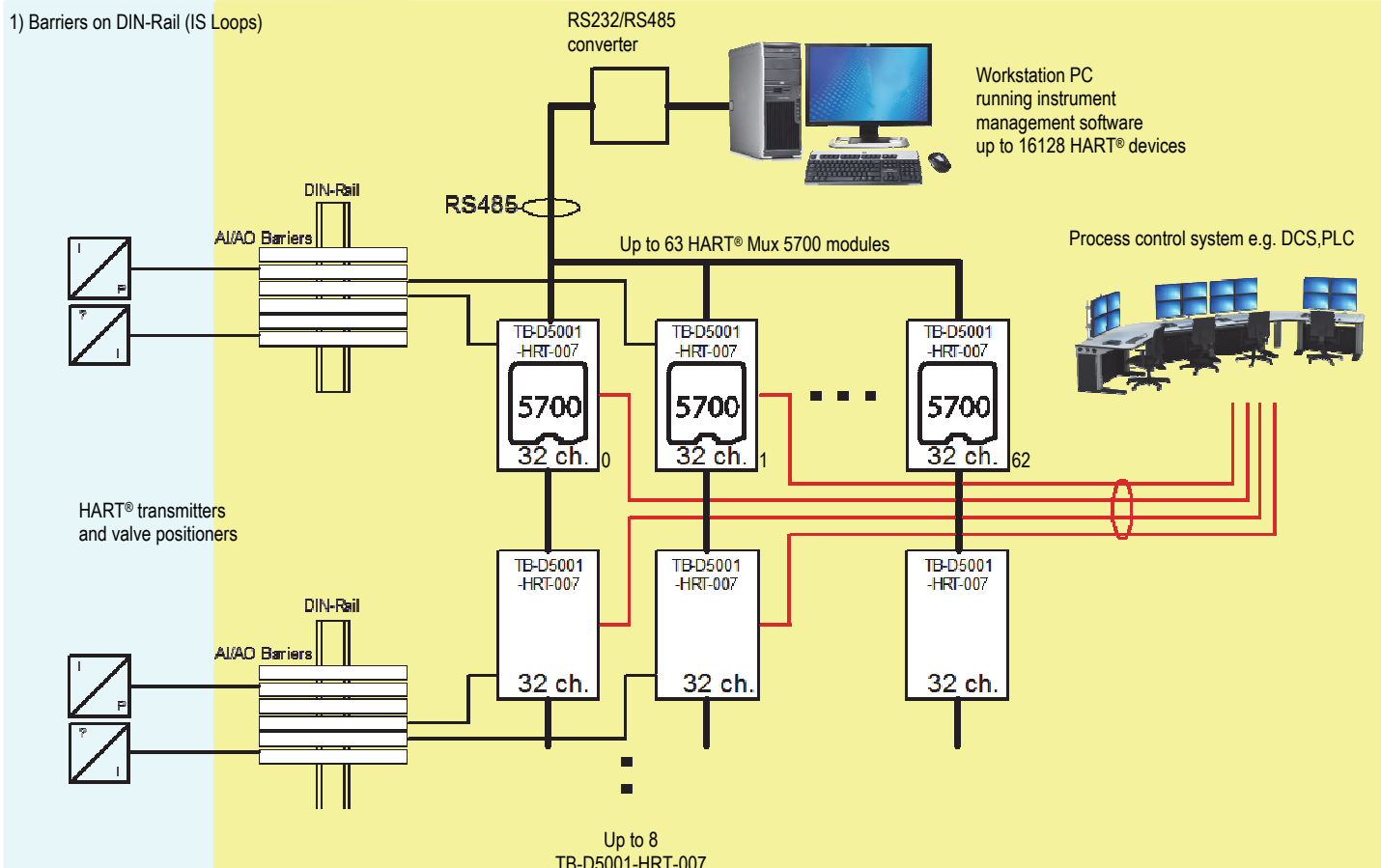


Loop Diagrams:

HAZARDOUS AREA ZONE 0 (ZONE 20) GROUP IIC

SAFE AREA, ZONE 2 GROUP IIC T4

1) Barriers on DIN-Rail (IS Loops)



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

