

Characteristics:

General Description:

The HART® Multiplexer Modem 5700 interfaces up to 256 smart devices (transmitters, I/P, proportional valves, etc...) in a HART® Network. Each device can be fully identified, configured and monitored by a remote PC running an FDT-based software package (PACTware™, etc...) through a dedicated Device Type Manager (DTM).

Up to 63 Multiplexer Modem 5700 (16128 loops) can be connected in multi-drop mode to the PC through the RS485 HART® Protocol, whose baudrate can be configured via software.

The module is intended to be mounted on the following Termination Boards:

- TB-D5001-HRT-003: to be used with G.M. International AI/AO Termination Boards;
- TB-D5001-HRT-004: to be used with DIN-Rail mounted barriers/isolators or direct field connections, for 4-20mA loop signal + interfacing input 250 Ω typ. PLC AI cards;
- TB-D5001-HRT-005: to be used with DIN-Rail mounted barriers/isolators or direct field connections, for 1-5V loop signal;
- TB-D5001-HRT-006: to be used with DIN-Rail mounted barriers/isolators or direct field connections, for 4-20mA loop signal + interfacing input 100÷150Ω PLC AI cards;
- TB-D5001-HRT-007: to be used with DIN-Rail mounted barriers/isolators or direct field connections, for 4-20mA loop signal + interfacing input 0÷50Ω PLC AI cards.

Termination board types can be combined to manage different interfaces at the same time, simply respecting maximum number of connected channels.

The HART® Multiplexer Modem 5700 is SIL 3 certified as non-interfering with the signal loops.

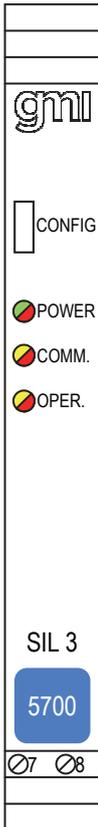
The module guarantees three-port (supply/interface/channels) isolation.

Functional Safety Management Certification:

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



Front Panel and Features:



- SIL 3 according to IEC 61508:2010 Ed. 2 (see Safety Manual ISM0436 for more information).
- Systematic capability SIL 3.
- Input from Zone 2, installation in Zone 2.
- High Density, 256 Input channels.
- HART® field device input, revision 5 to 7.
- Three port isolation, Supply/Interface/Channels.
- EMC Compatibility to EN61000-6-2, EN61000-6-4, EN61326-1 for safety system.
- ATEX, IECEx Certifications (pending).
- TÜV Certification.
- TÜV Functional Safety Certification.
- Simplified installation using standard customized Termination Boards.
- RS-485 Interface.

Technical Data:

Supply:

24 Vdc nom (18 to 30 Vdc) reverse polarity protected, via Termination Board.

Current consumption @ 24 V: 40 mA (in full topology configuration) typical.

Power dissipation: 0.5 W @ 24 V typical (modem only), 1 W @ 24 V typical (in full topology configuration).

Isolation (Test Voltage):

Interface/Power Supply: 500 Vrms.

Interface/Field channels: 500 Vrms.

Power Supply/ Field channels: 500 Vrms.

Input:

Number of channels: 256.

HART® field device Input: revision 5 to 7.

Interface:

Baudrate: from 1200 to 115200 bps, software configurable.

Address: 0 - 62, software configurable.

Type: RS-485 differential pair and grounding.

Topology: multi-drop, master/slave connection.

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:

on customized Termination Board.

Weight: about 100 g.

Location: installation in Safe Area or Zone 2, Group IIC T4.

Protection class: IP 20.

Dimensions: Width 12.5 mm, Depth 123 mm, Height 120 mm.

Ordering Information:

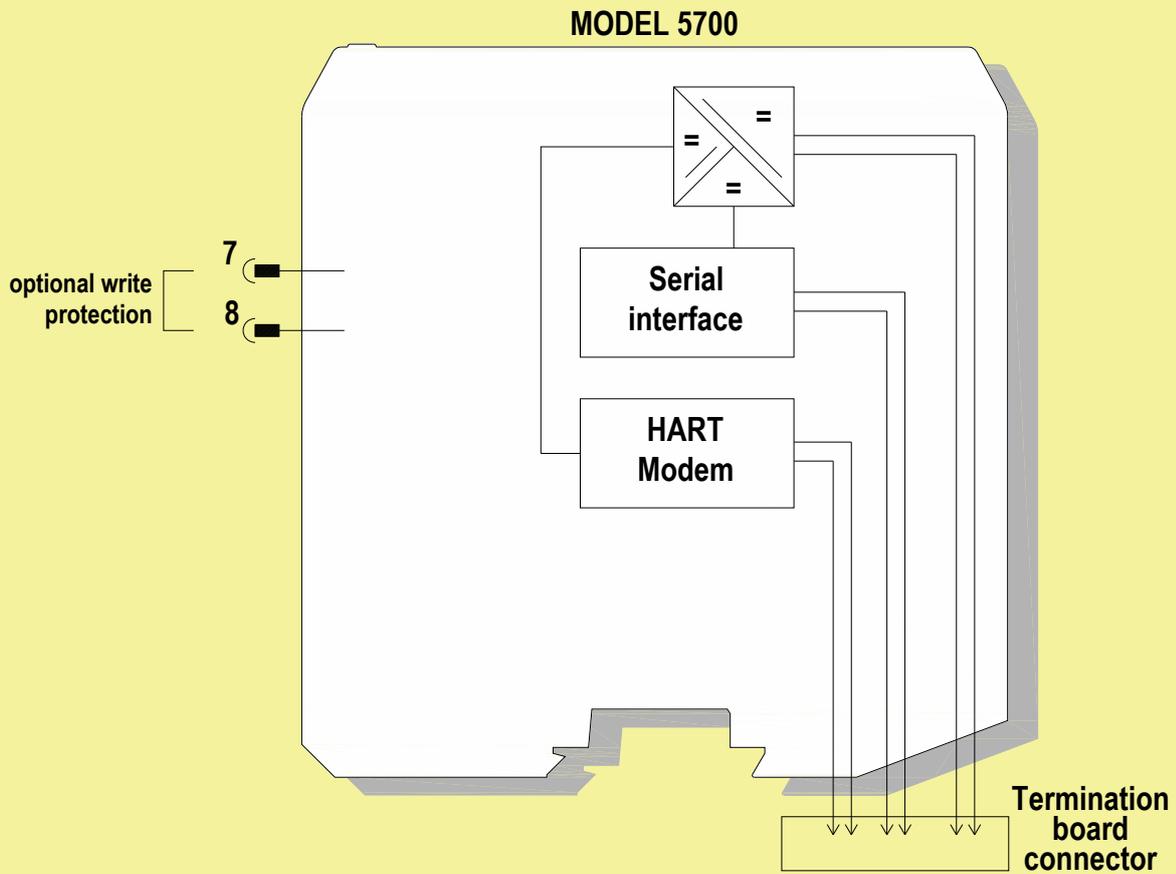
Model: 5700

Image:



Function Diagram:

SAFE AREA, ZONE 2 GROUP IIC T4



Loop Diagrams (IS Applications):

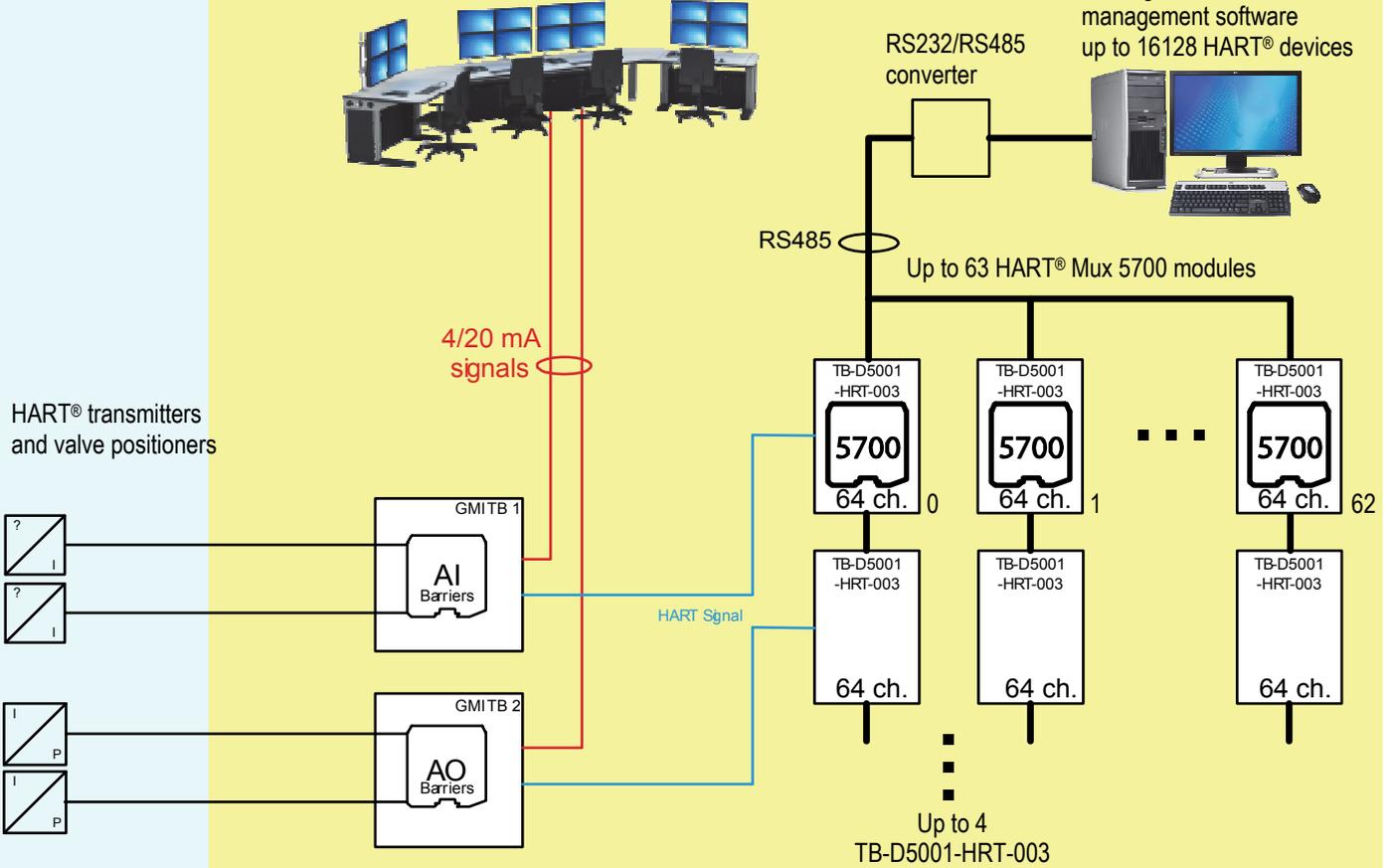
HAZARDOUS AREA ZONE 0 (ZONE 20) GROUP IIC

SAFE AREA, ZONE 2 GROUP IIC T4

1) Barriers on Termination Boards

Process control system e.g. DCS, PLC

Workstation PC running instrument management software up to 16128 HART® devices

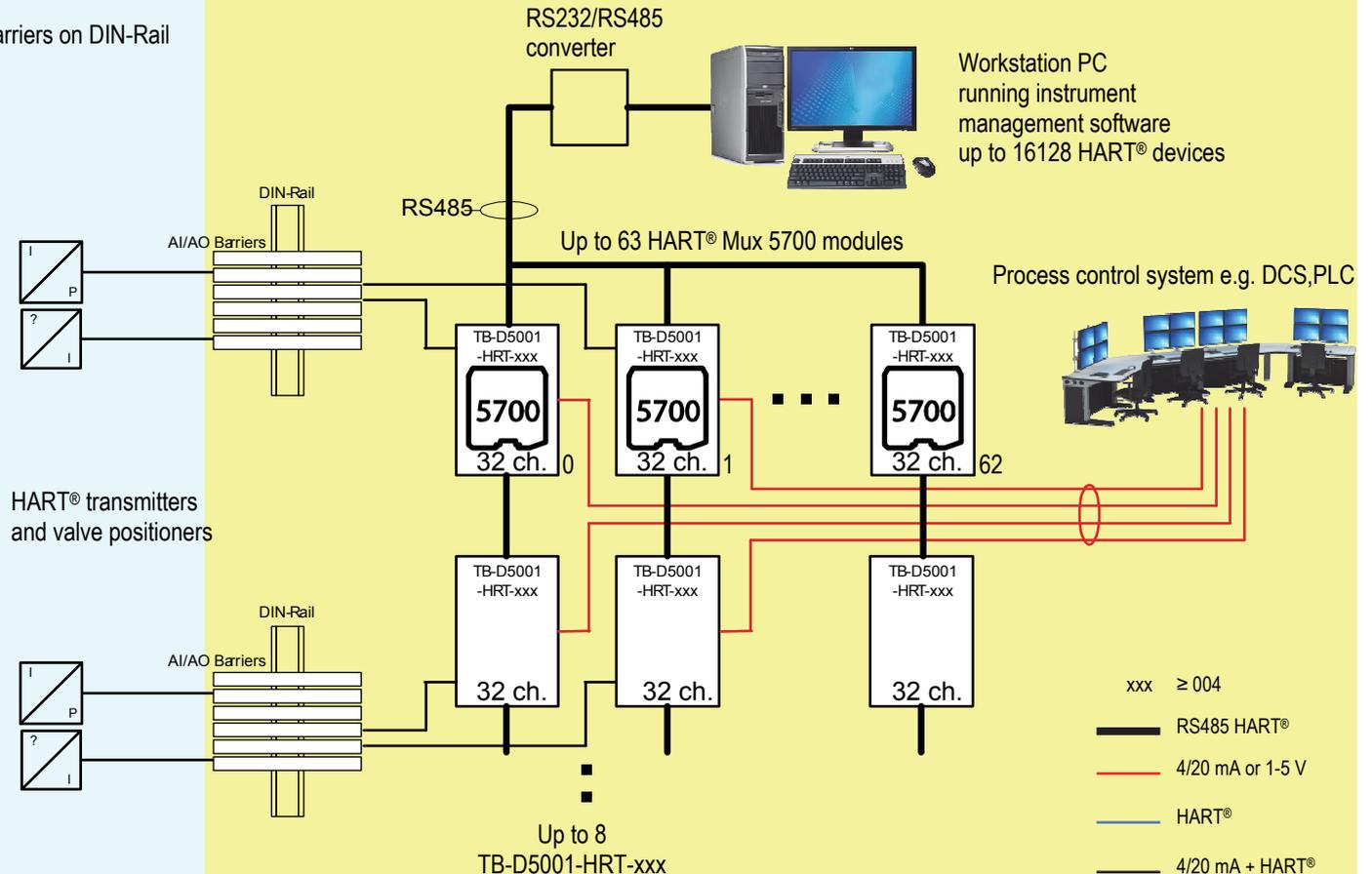


2) Barriers on DIN-Rail

RS232/RS485 converter

Workstation PC running instrument management software up to 16128 HART® devices

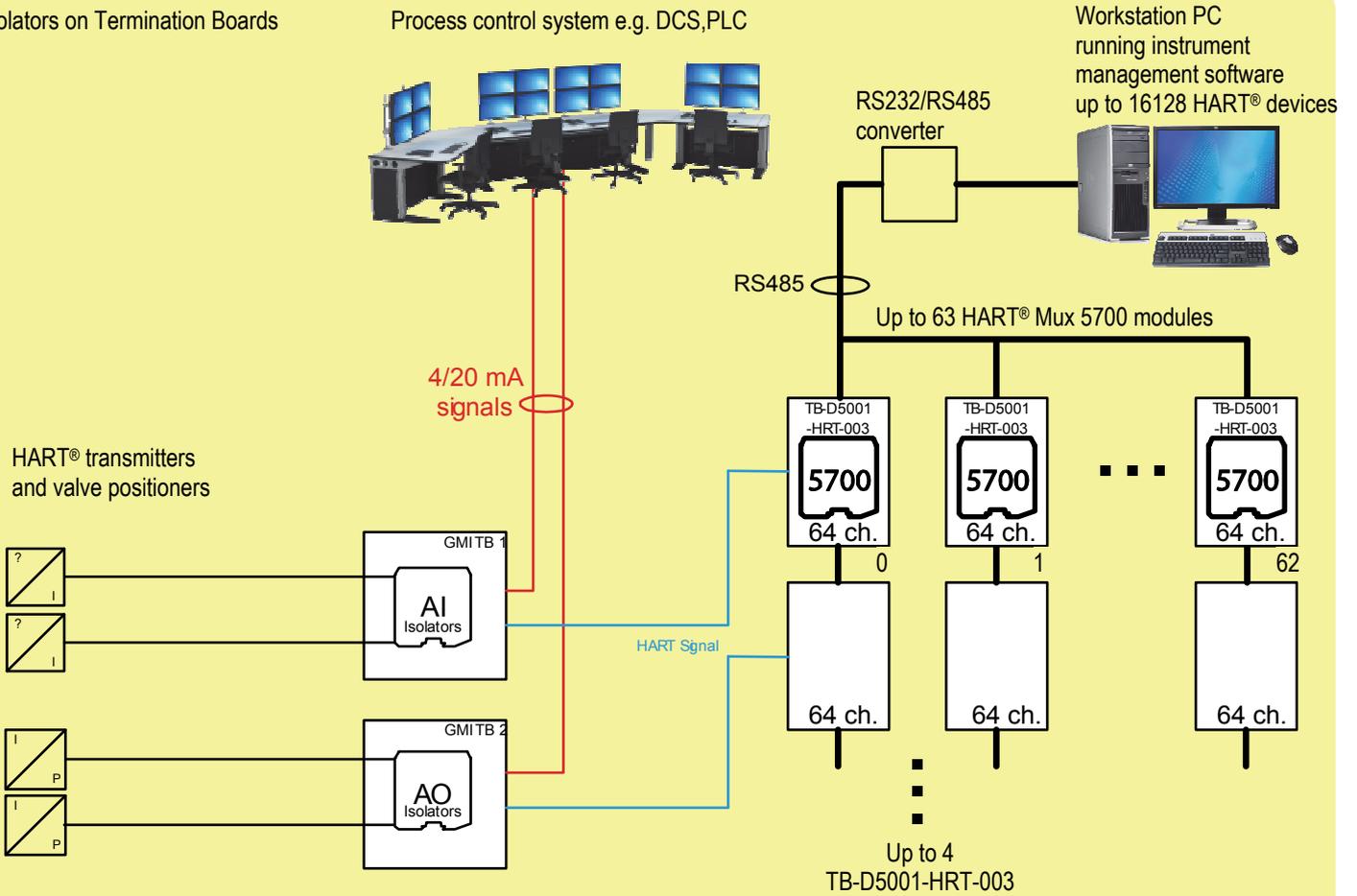
Process control system e.g. DCS, PLC



Loop Diagrams (Non-IS Applications):

SAFE AREA, ZONE 2 GROUP IIC T4

1) Isolators on Termination Boards



2) Isolators on DIN-Rail or Direct Field Connections

