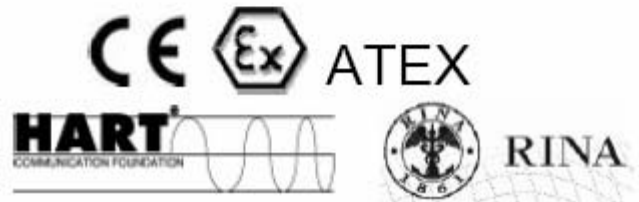


SMART – HART® SUBMERSIBLE ELECTRONIC LEVEL TRANSMITTERS

T71-01 DATA SHEET 1 of 4



Series T71M



T71M series includes SMART electronic transmitters with 4÷20 mA output and HART® digital communication protocol available with piezoresistive (P series) or Ceramic (C series) sensor. Piezoresistive sensors are based on silicon chip resistive Wheatstone bridge while ceramic sensors are thick film sensors based on strain gauge principle with backplate and diaphragm in ceramic material; in both versions the sensors are calibrated individually together with their own seal. Configurations and adjustments can be made locally, by means of push buttons and display, or remotely using HART® communication protocol.

APPLICATION FIELDS

T71M Series transmitters are used in industrial and marine applications to measure level of liquids in wells, chests, lakes, water treatment plants, tanks, etc... Our technical office is at your disposal for special applications.

TECHNICAL FEATURES

- Supply 12÷40Vdc
- Output 4÷20 mA 2 wire system (max 21,5mA) linear or quadratic ($\sqrt{\quad}$)
 - + HART® communication protocol
- Total Accuracy $\pm 0,15 / \pm 0,25$ % FS (*)
- Hysteresis and repeatability $< \pm 0,1$ % FS
- Temperature zero drift $< \pm 0,015$ % FS/°C (-10÷60° C)(*)
- Span thermal drift $< \pm 0,015$ % FS/°C (*)

Continue Technical Features

- Max load: $R_{lmax} = (V_{dc} - 12V) / 21,5 \text{ mA}$
with HART® output: $220\Omega < R_L < 600\Omega$
- Long term stability < 0,15 % FS per year (*)
- Relative Humidity < 98 % RH
- Operating temperature: -40÷85° C
- Process temperature: -20÷85° C
- Storage temperature : -55÷90° C
- Protection degree for casing IP67, for sensor IP68
- Response time: 250 msec
- CE marking

Notes (*):

Unless otherwise stated, performance specifications are given at standard conditions and maximum span. Accuracy and drifts are given for instruments with integral sensor and diaphragm; they may vary according to sensor type and execution

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ORDERING CODE

T71M	
Tab. 1 - General characteristics	
CODE	DESCRIPTION
	PRESSURE:
D	- Differential pressure (Only tube code 4L-connection 05/74- Pmax=0,4 bar)
DS	- Differential pressure with diaphragm seal (only tube Ø28 - Pmax=0,4bar)
R	- Relative
	* MEASURING RANGE (see table 2)
	HOUSING MATERIAL:
AP	- AISI 316 back connection
AR	- AISI 316 bottom connection
	** PROCESS CONNECTION (see table 3)
	DIAPHRAGM MATERIAL:
A	- AISI 316
C	- Hastelloy C (only for ranges > 300 mbar)
D	- Tantalum (only for ranges > 500 mbar)
E	- Ceramic
	SENSOR BODY (see table 4)
	ELECTRICAL CONNECTIONS:
PG13	- Inox cable gland PG13 IP67 cable Ø 8÷12 mm (housing A)
PG13L	- Inox cable gland PG13 Cable L=
PG9	- Inox cable gland PG9 IP67 cable Ø 8÷12 mm (housing A)
PG9L	- Inox cable gland PG9 Cable L=
R20	- Nipple M20 x 1,5 F (housing A)
R24	- Nipple M24 x 1,5 F (housing A)
Z01	- Nipple ½" NPT F (housing A)
	IMMERSION EXTENSION (see table 5):
	BODY / SENSOR GASKETS MATERIAL:
N	- None
V	- FPM
	SEGNAL IN USCITA
1	- Output 4÷20 mA + HART® Protocol
4	- Output 4÷20 mA without digital display
	INDICATORE
D2	- Digital display with buttons (output cod.1)
	OPTIONS ACCESSORIES (see table 6):

*Table 2 "Measuring ranges" indicates codes and limits of application.

** Table 3 list codes of standard process connections.

Tab. 2 – Measuring ranges

CODE	RANGE [bar]
01*	- 0÷0,05...0,2
02*	- 0÷0,15...0,6
03	- 0÷0,4...1,6
04	- 0÷0,8...3,2
11	- 0÷1,5...6
12	- 0÷4...10

* Ranges not available with ceramic sensor and diaphragm Calibration available with different measuring unit

Tab. 3: Process connections

CODE	DESCRIPTION
00	- None (cable only)
01	- None (tube only)
03	- 1" G- M
04	- 1 1/2" G-M
05	- 2" G-M
41	- Triclamp 2 1/2"
70	- Flange ND 80 NP 10/16 AISI 316 St.St.
74	- Flange ND 50 NP 10-16 AISI 316 St.St.
74a	- Moplen/PVC Flange ND50 NP10/16 (only for Moplen or PVC tube)
76	- Flange ND 40 NP 10/16 AISI 316 St.St.
76a	- Moplen/PVC Flange ND40 NP10/16 (only for Moplen or PVC tube)
Z04	- Flange DN4" ANSI 150 RF

For more informations contact our technical office.

Tab. 4: Sensor Body

CODE	DESCRIPTION
01*	- AISI 316 Ø 24 mm (protected diaphragm)
02*	- AISI 316 Ø 24 mm (open diaphragm)
03*	- AISI 316 Ø 35 mm (protected diaphragm)
04*	- AISI 316 Ø 35 mm (open diaphragm)
07*	- AISI 316 Ø 50 mm (protected diaphragm)
08*	- AISI 316 Ø 50 mm (open diaphragm)
09	- Screwed 1"NPT-M
11**	- AISI 316 Ø 35 mm (protected diaphragm - range > 0,4 bar)
12**	- AISI 316 Ø 35 mm (open diaphragm - range > 0,4 bar)
15**	- Moplen Ø 50 mm (protected diaphragm - range > 0,1 bar – extension code 5L)
16**	- Moplen Ø 50 mm (protected diaphragm - range > 0,1 bar – extension code 1L)
Z01	- Male M45x1 (flush diaphragm Ø 44)

* Piezo Sensor

** ceramic diaphragm

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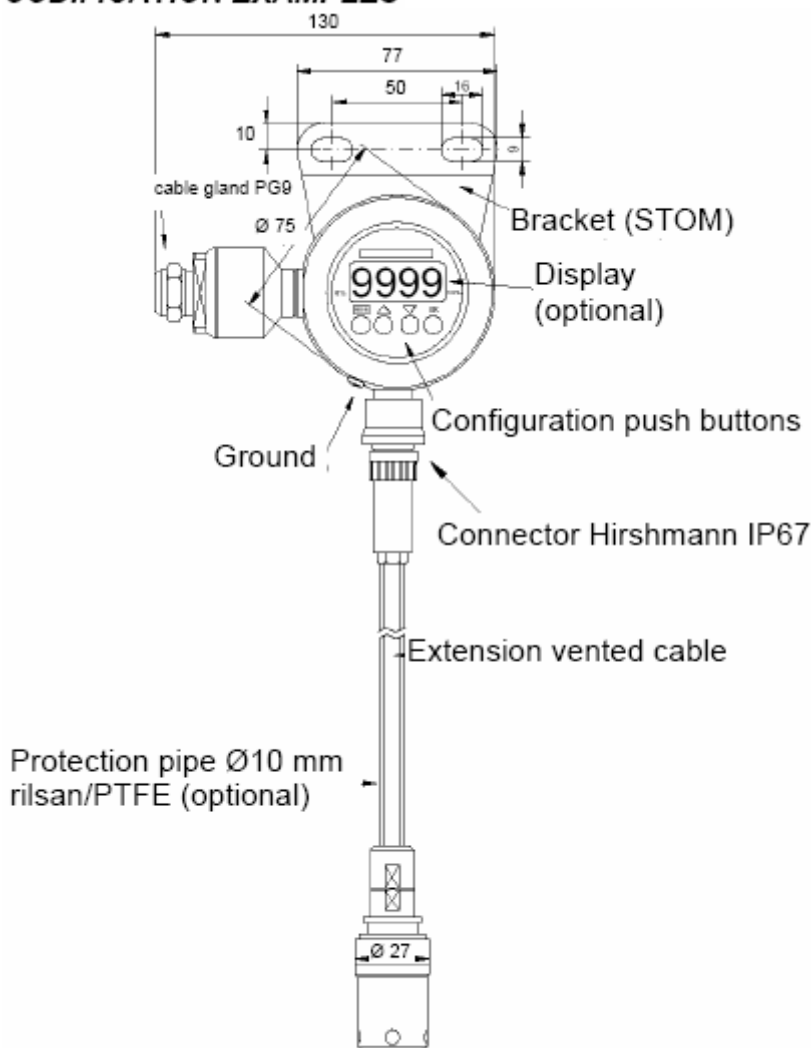
Tab. 5: Submersion extension (each meter)

CODE	DESCRIPTION
1L=	- Vented cable with Polyethylene sheath
2L=	- Vented cable with PTFE protection tube
3L=	- AISI 316 tube Ø 14 mm (max 4 mt)
4L=	- AISI 316 tube Ø 28 mm (max 6 mt)
5L=	- MOPLEN/PVC tube (only ceramic sensor - max 6 mt)
6L=	- Vented cable with RILSAN protection tube
7L=	- Polyethylene cable for ATEX version (per mt)
8L=	- Polyurethane cable for ATEX version (per mt)

Tab. 6: Options accessories

CODE	DESCRIPTION
01	- Calibration accuracy $\pm 0,15\%$ FS
025	- Calibration accuracy $\pm 0,25\%$ FS
ATX2	- ATEX version Ex II 1 GD EEx ia IIC T5/T6
CM	- Material test certificate as in EN 10204
E	- TAG Transcription
GIS	- Sliding hook on submersion cable
R	- G 1 1/2" screwed sliding nipple cast iron/Moplen
RT	- 5 points calibration report
STOM	- Wall mounting bracket
STUB	- Stand pipe 2" mounting bracket
TR	- Thermo shrinkable sleeve on sensor body

CODIFICATION EXAMPLES



Cod. 01

Electronic transmitter for relative pressure measurement with integral piezoresistive sensor, calibration 0÷1 bar, bottom connection, AISI 316 st.st. diaphragm material, AISI 316 st.st. Ø 24 mm sensor body, PG13 st.st. cable

gland, vented cable with RILSAN protection tube length = 10mt, FPM gasket, 4÷20 mA output + HART protocol, digital display complete with push buttons for local configuration, accuracy $\pm 0,25\%$ FS, with wall mounting bracket.

Code = **T7IM R 11 AR 00 A 01 PG13 6L=10 N 1 D2 025 STOM**