Metran-750 Level Transmitter

- **Process fluids: liquids and solids**
- **Reference accuracy: ±2 mm, ±3 mm, ±3.5 mm, ±5 mm, ±10 mm**
- **Maximum measuring range: 30 m**
- **Output: two-wire 4-20 mA/HART 7**
- **Warranty period is up to 5 years**
- **Verification interval is up to 3 years**
- **Operating pressure range: standard: -0.1 to 10 MPa**
- **Operating temperature range: standard: –40 to 150 °C**
- **Process connection: flanges per GOST 33259, EN 1092-1, ASME B 16.5, G thread 1-in., 1½-in., NPT thread 1-in., 1½-in.**
- **Versions: general industrial and explosion-proof (Exia, Exd, Ext)**

Metran-750 Level Transmitter is a guided wave radar level transmitter for measuring level and interface of liquids based on TDR principle (Time Domain Reflectometry). Level transmitters are designed for operation in explosion-proof and explosive conditions.

Level transmitters can measure level of media with a dielectric constant of at least 1.2 (for coaxial probes).

Level transmitters are powered from a DC power supply with 16-42.4 V.

The software of level transmitters with digital signal based on HART protocol supports protocol revision HART 7.

The ambient temperature range is:
- standard: –40 to 85 °C
- with BR5 option: –50 to 85 °C
- with BR6 option: –60 to 85 °C

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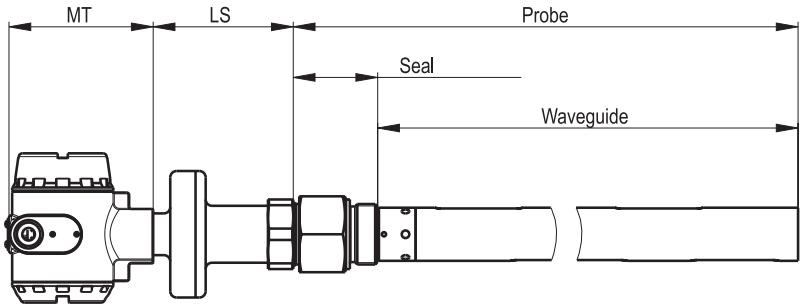
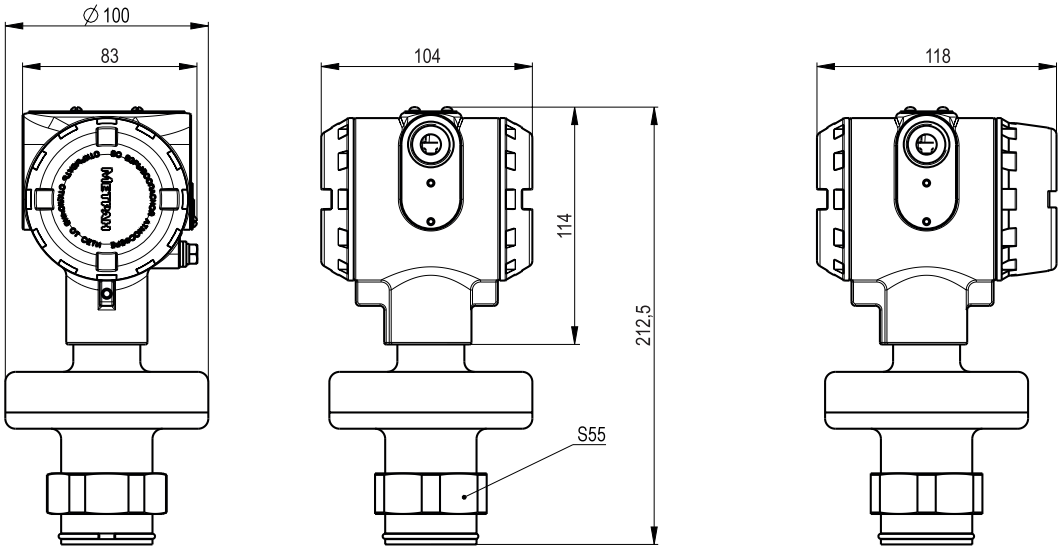
OVERALL AND MOUNTING DIMENSIONS



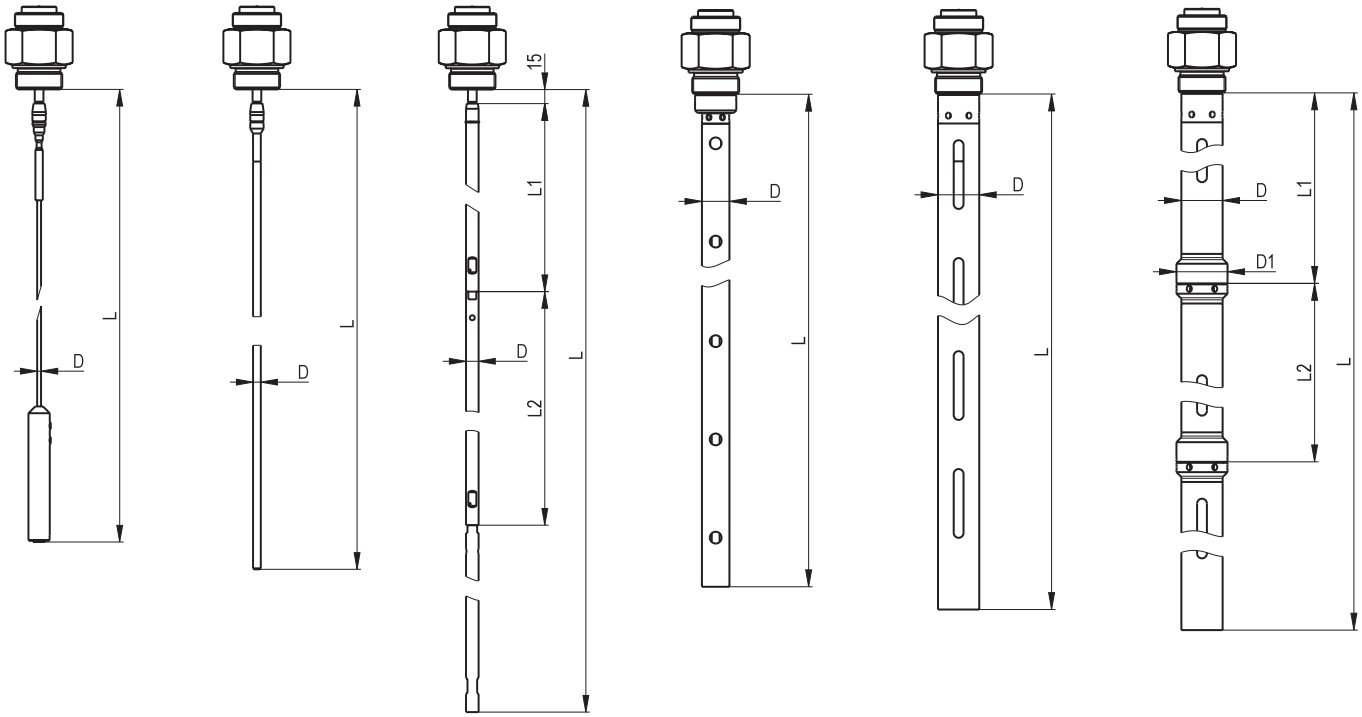
MT – measuring transducer, LS – level sensor.

Figure 1. Level Transmitter Overview, Standard Seal



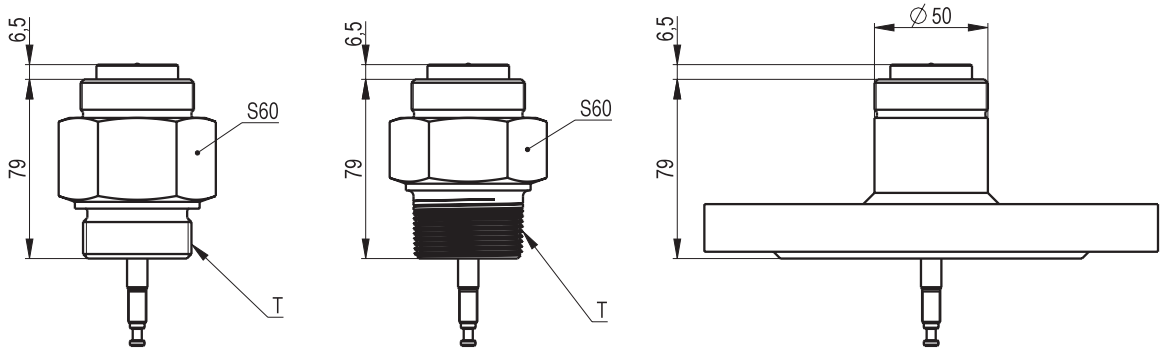
a) without LCD display **b) with LCD display**

Figure 2. Level Transmitter MT and LS



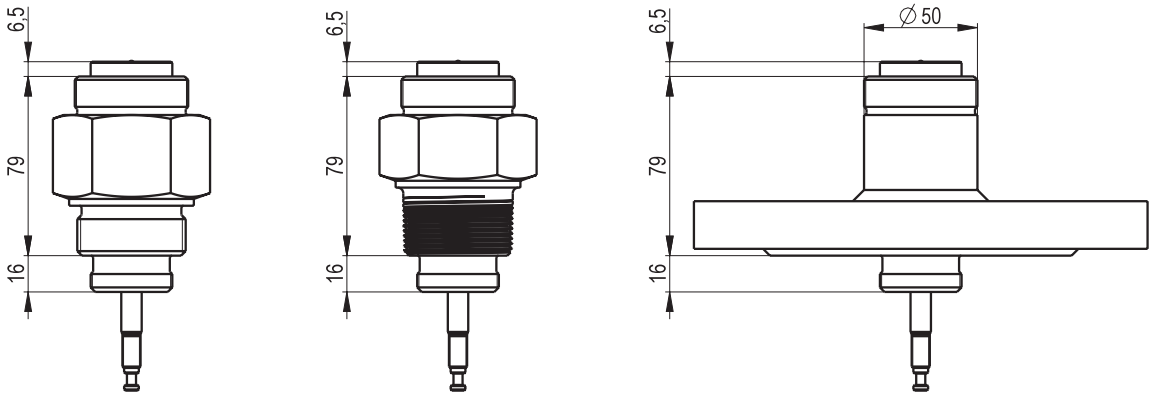
a) flexible **b) rigid** **c) segmented rigid** **d) coaxial 28 mm perforated** **e) coaxial 42 mm perforated** **f) coaxial 42 mm perforated segmented**

Figure 3. Level Transmitter Probes



a) with straight thread b) with tapered thread c) flanged

Figure 4. Standard Level Transmitter Seal for Flexible or Rigid Probe



a) with straight thread b) with tapered thread c) flanged

Figure 5. Standard Level Transmitter Seal for Coaxial Probe

Probe Types and Dimensions

Table 1

Probe Type	D	D1	L1	L2	L min, m	L max, m
Rigid 8 mm	8				0.6	3
Rigid 14 mm	14				0.6	3
Segmented rigid 14 mm	14		385	800	1	10
Flexible 4 mm	4				1	30
Flexible 6 mm	6				1	30
Coaxial 28 mm	28				0.6	3
Coaxial 42 mm	42				0.6	3
Coaxial 42 mm segmented	42	52	1540	1530	2	6

MEASUREMENT RANGE TRANSITION ZONES

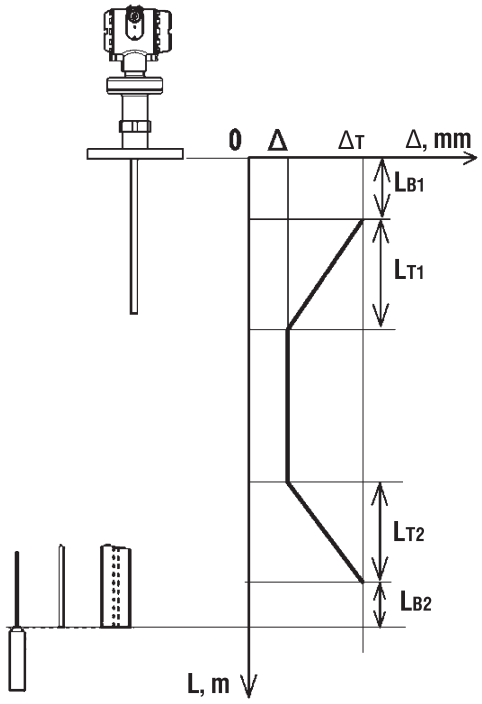


Figure 6. Blind Zones and Transition Zones

Table 2

Seal Type	Probe Type	Media	LB1, mm	LT1, mm	LB2, mm	LT2, mm
Standard	Flexible, rigid	Water Oil	100 90	150 150	0 0	10 120
Standard	Coaxial 28 mm	Water Oil	50 90	140 90	20 130	0 0
Standard	Coaxial 42 mm	Water Oil	0 0	40 100	20 110	0 0

LB1 – Upper Blind Zone
LT1 – Upper Transition Zone
LT2 – Lower Transition Zone
LB2 – Lower Blind Zone

RELIABILITY

Average lifetime is 20 years, except for level transmitters used to measure corrosive media, with their average lifetime depending on corrosive medium properties, operating conditions and materials used.

Mean time between failures is 200 000 hours minimum.

DELIVERY SET

- Level transmitter with primary verification; if QM option is ordered, a Verification Certificate is issued
- Operation Manual
- Technical Data Sheet

WARRANTY

Level transmitters are warranted for 24 months from the date of commissioning or for 48 months after their delivery, whichever period expires first.

Level transmitters with WR3 option are warranted for 3 years from the date of commissioning or for 5 years after their delivery, whichever period expires first.

Level transmitters with WR5 option are warranted for 5 years from the date of commissioning or for 7 years after their delivery, whichever period expires first.

ORDERING INFORMATION
METRAN-750 LEVEL TRANSMITTER

Options that have minimum lead time are marked with ● symbol in Standard column.

Table 3

Code	Description	Standard
	MANDATORY OPTIONS	
Model		
A	Level	●
B	Level/interface	●
Output		
H	4-20 mA with HART signal, two-wire	●
Housing Material and Type		
D	Dual compartment aluminum housing	●
T	Dual compartment stainless steel housing	●
Hazardous Area Certifications		
NA	General industrial version	●
I7	Certification of conformity to IECEx «intrinsic safety "i"» (Exia Ga, Exia Da)	●
E7	Certification of conformity to IECEx «flameproof enclosures "d"» (Exd), «dust ignition protection by enclosure "t"» (Ext)	●
K7	Certification of conformity to IECEx «intrinsic safety "i"», «flameproof enclosures "d"», «dust ignition protection by enclosure "t"» (ExiaGa, ExiaDa, Exd, Ext)	●
IM	Certification of conformity to CU TR 012/2011 – Intrinsically Safe Electrical Circuit (Exia)	●
EM	Certification of conformity to CU TR 012/2011 – Explosion-Proof Enclosure (Exd)	●
KM	Certification of conformity to CU TR 012/2011 – Intrinsically Safe Electrical Circuit, Explosion-Proof Enclosure (Exia, Exd)	●
Accuracy		
B	±2 mm	●
C	±3 mm	●
D	±3.5 mm	●
E	±5 mm	●
F	±10 mm	●
Operating Temperature and Pressure Range		
S	–40 to 150 °C; -0.1 to 4 MPa	●
Materials of Construction		
1	12X18H10T stainless steel	●
2	316L stainless steel	●
O-ring Material		
N	No (for high temperature probes)	●
V	Fluoroelastomer: –50 to 250 °C	●
E	Ethylene propylene: –50 to 150 °C	●
K	Perfluoroelastomer: –10 to 250 °C	●
B	Nitrile rubber: –55 to 100 °C	●
F	Fluorosilicone: –60 to 200 °C	●
Probe Type		
C1	Flexible 4 mm	●
C2	Flexible 6 mm	●
R1	Rigid 8 mm	●
R4	Rigid 14 mm	●
R5	Segmented rigid 14 mm	●
A3	Coaxial perforated 28 mm	●
A4	Coaxial perforated 42 mm	●
A5	Coaxial segmented perforated 42 mm	●

Table 3 (Continued)

Code	Description	Standard
Probe Length		
XXXXX	Metric XXXXX mm	
Process Connection Standard		
G	GOST 33259 flange	●
D	EN 1092-1 flange	●
A	ASME B16.5 flange	●
N	Tapered thread per ASME B1.20 (NPT)	●
B	Straight thread per ISO 228 (G)	●
Process Connection Type		
T	Threaded connection	●
A	Flat	●
B	Raised face	●
C	Tongue	●
D	Groove	●
E	Spigot	●
F	Recess	●
J	Ring type joint	●
X	Special order	
Process Connection Pressure Rating		
00	Threaded connection	●
01	PN6	●
02	PN16 / Class 150	●
04	PN40 / Class 300	●
06	PN63	
10	PN100 / Class 600	
16	PN160 / Class 900	
25	PN250 / Class 1500	
40	Class 2500	
Process Connection Size		
10	1-in.	●
15	1½-in.	●
20	2-in. / DN50	●
30	3-in. / DN80	●
40	4-in. / DN100	
60	6-in. / DN150	

OTHER OPTIONS

Display Options		
M5	LCD display (up to –45 °C)	●
Transient Protection		
T1	Transient protection terminal block	●
Calibration Record		
Q4	Calibration Record	●
Verification Certificate		
QM	Verification Certificate	●
Low Temperature		
BR5	ambient –50 °C	●
BR6	ambient –60 °C	●

Table 3 (End)

Code	Description	Standard
Custom Configuration		
C1	Custom transmitter configuration (fill in Configuration Data Sheet)	●
Mounting Bracket		
B1	Mounting bracket	●
Safety Certifications		
QT	Safety Certified to IEC 61508 SIL3	●
Quality Traceability Certification		
Q8	Material Traceability Certification per EN 10204 3.1	●
Positive Material Identification Certificate of Conformance		
Q76	Positive Material Identification Certificate of Conformance	●
Materials Certification		
Q15	NACE material recommendation per MR-0175 and MR-0104	●
Probe End Projection		
PEP	Probe End Projection	●
Functional Diagnostic		
DA0	Loop integrity diagnostic	●
Nameplate		
ST	Custom nameplate	●
Anchoring and Weight for Flexible Probe		
G2	Heavy weight	●
G3	Short weight	●
G4	Chuck	●
Extended Product Warranty		
WR3	3-year limited warranty	●
WR5	5-year limited warranty	●
Centering Disc		
S2	2-in. centering disc, SST, 45 mm outer diameter	●
S3	3-in. centering disc, SST, 68 mm outer diameter	●
S4	4-in. centering disc, SST, 92 mm outer diameter	●
S6	6-in. centering disc, SST, 141 mm outer diameter	●
P2	2-in. centering disc, PTFE, 45 mm outer diameter	●
P3	3-in. centering disc, PTFE, 68 mm outer diameter	●
P4	4-in. centering disc, PTFE, 92 mm outer diameter	●
P6	6-in. centering disc, PTFE, 141 mm outer diameter	●
Cable Entry		
K01	Nickel plated brass, unarmored cable, 6.5 to 13.9 mm diameter	●
K02	Stainless steel, unarmored cable, 6.5 to 13.9 mm diameter	●
K04	Polyamide, unarmored cable, 6 to 12 mm diameter	●
K12	Nickel plated brass, armored cable, 6.5 to 13.9 mm cable diameter, 12.5 to 20.9 mm armor diameter	●
K14	Nickel plated brass, armored cable, 6.1 to 11.6 mm cable diameter, 9.5 to 15.9 mm armor diameter	●
K17	Nickel plated brass, unarmored cable laid in flexible metal hose (R3-TsKh-15, GERDA-MG-16)	●
K18	Nickel plated brass, unarmored cable laid in flexible metal hose (R3-TsKh-18)	●
K19	Nickel plated brass, unarmored cable laid in flexible metal hose (R3-TsKh-20, MRPI-20)	●
K20	Stainless steel, unarmored cable laid in flexible metal hose (R3-TsKh-15, GERDA-MG-16)	●
K21	Stainless steel, unarmored cable laid in flexible metal hose (R3-TsKh-18)	●
K22	Stainless steel, unarmored cable laid in flexible metal hose (R3-TsKh-20, MRPI-20)	●