

Drawings

ROTAMASS Total Insight Coriolis Mass Flow and Density Meter Intense



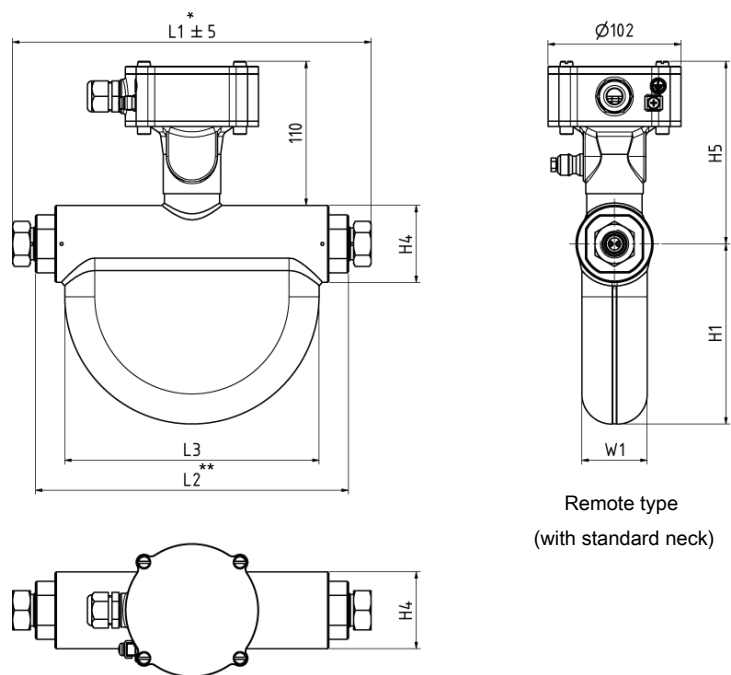
SD 01U10B05-00EN-R



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1 Process connections, dimensions and weights of sensor



*with process connection adapter 16TA9

**with process connection 20TA9

Fig. 1: Dimensions for Intense 08 and 10 in mm

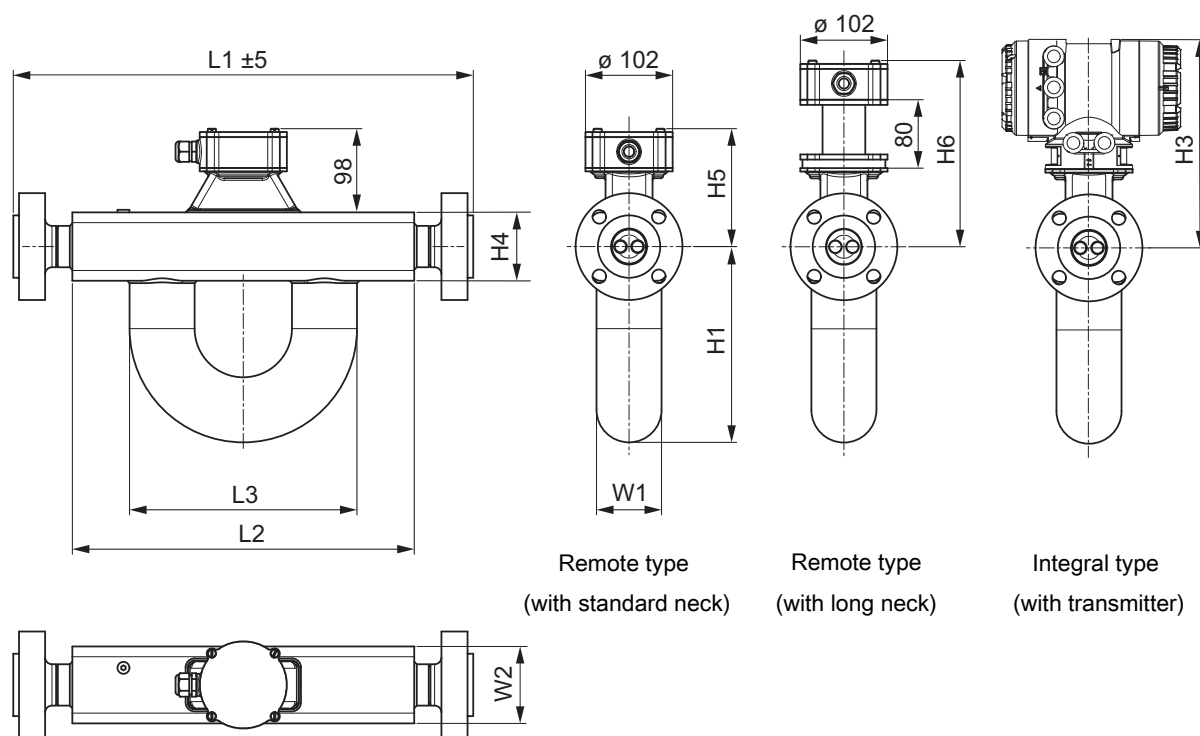


Fig. 2: Dimensions for meter sizes Intense 34, 36 and 38

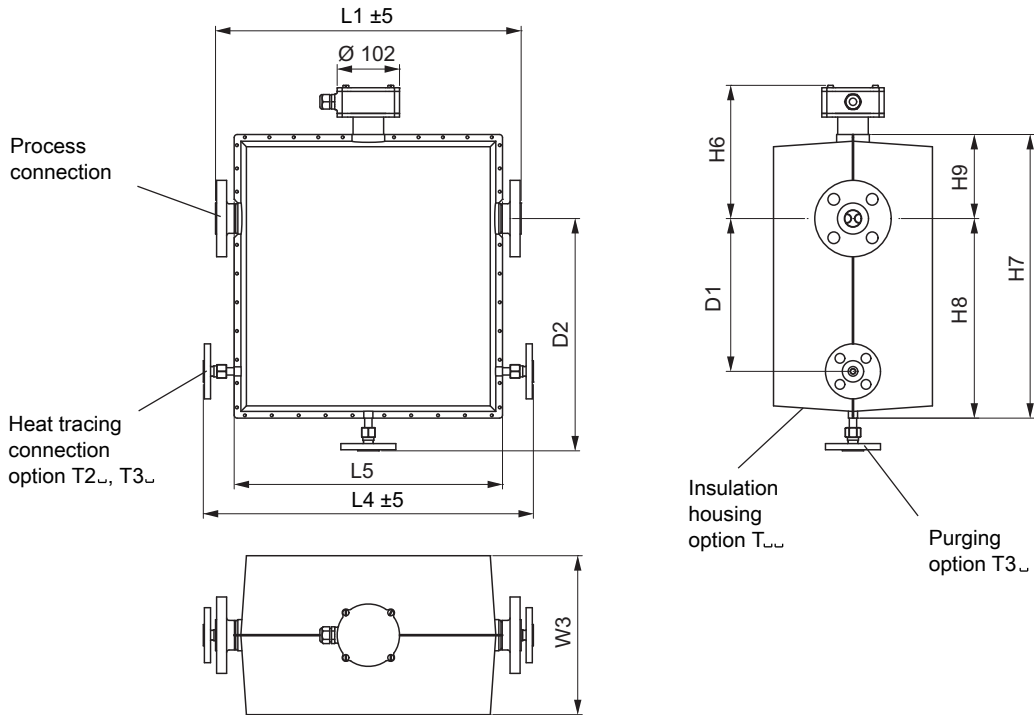


Fig. 3: Dimensions in mm: version with insulation housing for meter sizes Intense 34, 36 and 38 only

Tab. 1: Dimensions without length L1

Meter size	L2	L3	L4	L5	W1	W2	W3	D1	D2
	in mm (inch)								
Intense 08	240 (9.5)	195 (7.7)	-	-	50 (2.0)	-	-	-	-
Intense 10	240 (9.5)	195 (7.7)	-	-	50 (2.0)	-	-	-	-
Intense 34	272 (10.7)	212 (8.3)	420 (16.5)	310 (12.2)	60 (2.4)	80 (3.1)	240 (9.4)	200 (7.9)	330 (13)
Intense 36	400 (15.7)	266 (10.5)	540 (21.3)	439 (17.3)	76 (3)	90 (3.5)	260 (10.2)	250 (9.8)	380 (15)
Intense 38	490 (19.3)	267 (10.5)	640 (25.2)	530 (20.9)	89 (3.5)	110 (4.3)	260 (10.2)	250 (9.8)	430 (16.9)

Tab. 2: Dimensions without length L1

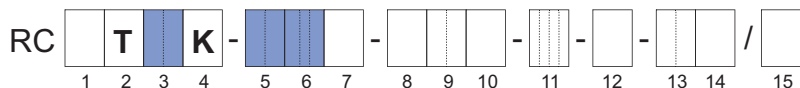
Meter size	H1	H3	H4	H5	H6	H7	H8	H9
	in mm (inch)							
Intense 08	138 (5.4)	-	59 (2.3)	140 (5.5)	-	-	-	-
Intense 10	138 (5.4)	-	59 (2.3)	140 (5.5)	-	-	-	-
Intense 34	177 (7)	267 (10.5)	80 (3.1)	138 (5.4)	218 (8.6)	411 (16.2)	273 (10.7)	138 (5.4)
Intense 36	230 (9.1)	267 (10.5)	80 (3.1)	138 (5.4)	218 (8.6)	464 (18.3)	326 (12.8)	138 (5.4)
Intense 38	268 (10.6)	277 (10.9)	100 (3.9)	148 (5.8)	228 (9)	524 (20.6)	376 (14.8)	148 (5.8)

Overall length L1 and weight

The overall length of the sensor depends on the selected process connection (type and size of flange). The following tables list the overall length and weight as functions of the individual process connection.

The weights in the tables are for the remote type with standard neck. Additional weight for the remote type with long neck: 1 kg (2.2 lb). Additional weight for the integral type: up to 3.2 kg (7.1 lb).

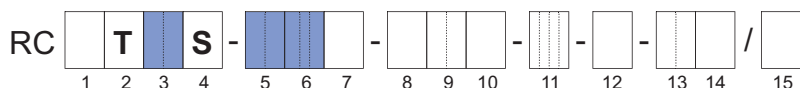
Process connections medium pressure autoclave compatible



Tab. 3: Overall length L1 and weight of sensor (process connections: medium pressure autoclave, wetted parts: stainless steel 1.4404/ 316L and Ni alloy C-22/ 2.4602)

Process connections	Model code position		Intense 08		Intense 10	
	5	6	L1 in mm (inch)	Weight in kg (lb)	L1 in mm (inch)	Weight in kg (lb)
Autoclave 9/16" adapter	16	TA9	275 (10.8)	7 (15.4)	275 (10.8)	7 (15.4)
Autoclave 3/4"			20	240 (9.5)	7 (15.4)	240 (9.5)

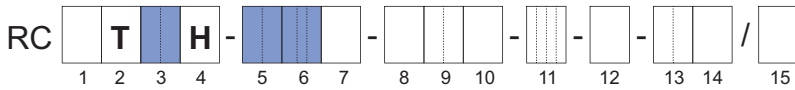
Process connections compatible to ASME B16.5 (AISI 316/ AISI 316L dual certified)



Tab. 4: Overall length L1 and weight of sensor (process connections: ASME, wetted parts: stainless steel)

Process connections	Model code position		Intense 34		Intense 36		Intense 38	
	5	6	L1 in mm (inch)	Weight in kg (lb)	L1 in mm (inch)	Weight in kg (lb)	L1 in mm (inch)	Weight in kg (lb)
ASME 1/2" class 900, raised face (RF)	15	BA5	400 (15.7)	12.6 (28)	-	-	-	-
ASME 1/2" class 900, ring joint (RJ)		CA5	400 (15.7)	13 (29)	-	-	-	-
ASME 1/2" class 1500, raised face (RF)		BA6	400 (15.7)	12.6 (28)	-	-	-	-
ASME 1/2" class 1500, ring joint (RJ)		CA6	400 (15.7)	13 (29)	-	-	-	-
ASME 1" class 900, raised face (RF)	25	BA5	450 (17.7)	16.4 (36)	540 (21.3)	20.6 (45)	-	-
ASME 1" class 900, ring joint (RJ)		CA5	450 (17.7)	16.6 (37)	540 (21.3)	20.4 (45)	-	-
ASME 1" class 1500, raised face (RF)		BA6	450 (17.7)	16.4 (36)	-	-	-	-
ASME 1" class 1500, ring joint (RJ)		CA6	450 (17.7)	16.6 (37)	-	-	-	-
ASME 2" class 900, raised face (RF)	50	BA5	-	-	660 (26)	35.2 (78)	720 (28.3)	43 (95)
ASME 2" class 900, ring joint (RJ)		CA5	-	-	660 (26)	35.6 (78)	720 (28.3)	43.4 (96)

Meaning of "-": not available

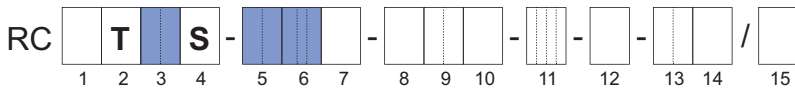


Tab. 5: Overall length L1 and weight of sensor (process connections: ASME, wetted parts: Ni alloy C-22/2.4602)

Process connections	Model code position		Intense 34		Intense 36		Intense 38	
	5	6	L1 in mm (inch)	Weight in kg (lb)	L1 in mm (inch)	Weight in kg (lb)	L1 in mm (inch)	Weight in kg (lb)
ASME 1" class 900, raised face (RF)	25	BA5	400 (15.7)	16.4 (36)	–	–	–	–
ASME 1" class 900, ring joint (RG)		CA5	–	–	580 (23)	21 (46)	–	–
ASME 1" class 1500, raised face (RF)		BA6	400 (15.7)	16.4 (36)	–	–	–	–
ASME 1" class 1500, ring joint (RG)		CA6	–	–	580 (23)	21 (46)	–	–
ASME 2" class 900, raised face (RF)	50	BA5	–	–	580 (23)	34 (75)	710 (28)	44 (97)
ASME 2" class 900, ring joint (RG)		CA5	–	–	580 (23)	36 (80)	710 (28)	44 (97)
ASME 2" class 1500, ring joint (RG)		CA6	–	–	580 (23)	36 (80)	710 (28)	44 (97)
ASME 3" class 900, raised face (RF)	80	BA5	–	–	–	–	710 (28)	50 (110)
ASME 3" class 900, ring joint (RG)		CA5	–	–	–	–	710 (28)	52 (115)

Meaning of "–": not available

Process connections with internal thread G

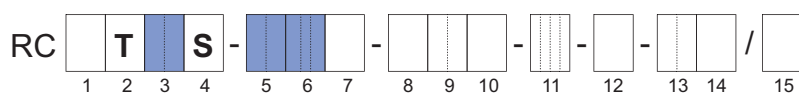


Tab. 6: Overall length L1 and weight of sensor (process connections: G thread, wetted parts: stainless steel)

Process connections	Model code position		Intense 34		Intense 36		Intense 38	
	5	6	L1 in mm (inch)	Weight in kg (lb)	L1 in mm (inch)	Weight in kg (lb)	L1 in mm (inch)	Weight in kg (lb)
G 3/8"	08	TG9	390 (15.4)	9.4 (21)	–	–	–	–
G 1/2"	15		390 (15.4)	9.4 (21)	–	–	–	–
G 3/4"	20		390 (15.4)	9.4 (21)	–	–	–	–

Meaning of "–": not available

Process connections with internal thread NPT



Tab. 7: Overall length L1 and weight of sensor (process connections: NPT thread, wetted parts: stainless steel)

Process connections	Model code position		Intense 34		Intense 36		Intense 38	
	5	6	L1 in mm (inch)	Weight in kg (lb)	L1 in mm (inch)	Weight in kg (lb)	L1 in mm (inch)	Weight in kg (lb)
NPT 3/8"	08	TT9	390 (15.4)	9.4 (21)	–	–	–	–
NPT 1/2"	15		390 (15.4)	9.4 (21)	–	–	–	–
NPT 3/4"	20		390 (15.4)	9.4 (21)	–	–	–	–

Meaning of "–": not available

Typical dimensions of measuring tubes

Tab. 8: Typical dimensions of measuring tubes

Meter size	Material of wetted parts	Model code pos. 4	Internal diameter in mm (inch)	Wall thickness in mm (inch)
Intense 08	Measuring tubes made of nickel alloy C-22/2.4602, process connections of stainless steel alloy 1.4404/316L	K	1.2 (0.05)	0.35 (0.022)
Intense 10			2.1 (0.08)	0.55 (0.022)
Intense 34	Stainless steel 1.4404/316L	S	7.75 (0.305)	0.89 (0.035)
	Nickel alloy C-22/2.4602	H	7.70 (0.303)	0.91 (0.036)
Intense 36	Stainless steel 1.4404/316L	S	13.40 (0.528)	1.24 (0.049)
	Nickel alloy C-22/2.4602	H	13.4 (0.528)	1.24 (0.049)
Intense 38	Stainless steel 1.4404/316L	S	22.10 (0.870)	1.65 (0.065)
	Nickel alloy C-22/2.4602	H	22.1 (0.870)	1.65 (0.065)

Additional weight for insulation and heat tracing

Tab. 9: Additional weight for insulation and heat tracing

Model code pos. 15	Description	Process connection	Weight in kg (lb)				
			Intense 08	Intense 10	Intense 34	Intense 36	Intense 38
/T10	Insulation	–	–	–	4.4 (9.7)	6.4 (14.1)	8.2 (18.1)
/T21 ¹⁾	Insulation and heat tracing	ASME ½" class 150, raised face (RF)	–	–	2.3 (5.1)	3.2 (7.1)	3.5 (7.7)
/T22 ¹⁾		ASME ½" class 300, raised face (RF)					
/T26 ¹⁾		EN DN15 PN40					
/T31 ¹⁾	Insulation and heat tracing with purging	ASME ½" class 150, raised face (RF)	–	–	2.5 (5.5)	3.4 (7.5)	3.7 (8.2)
/T32 ¹⁾		ASME ½" class 300, raised face (RF)					
/T36 ¹⁾		EN DN15 PN40					

¹⁾Weights from insulation (T10) have to be considered additionally.

2 Transmitter dimensions and weights

Transmitter dimensions

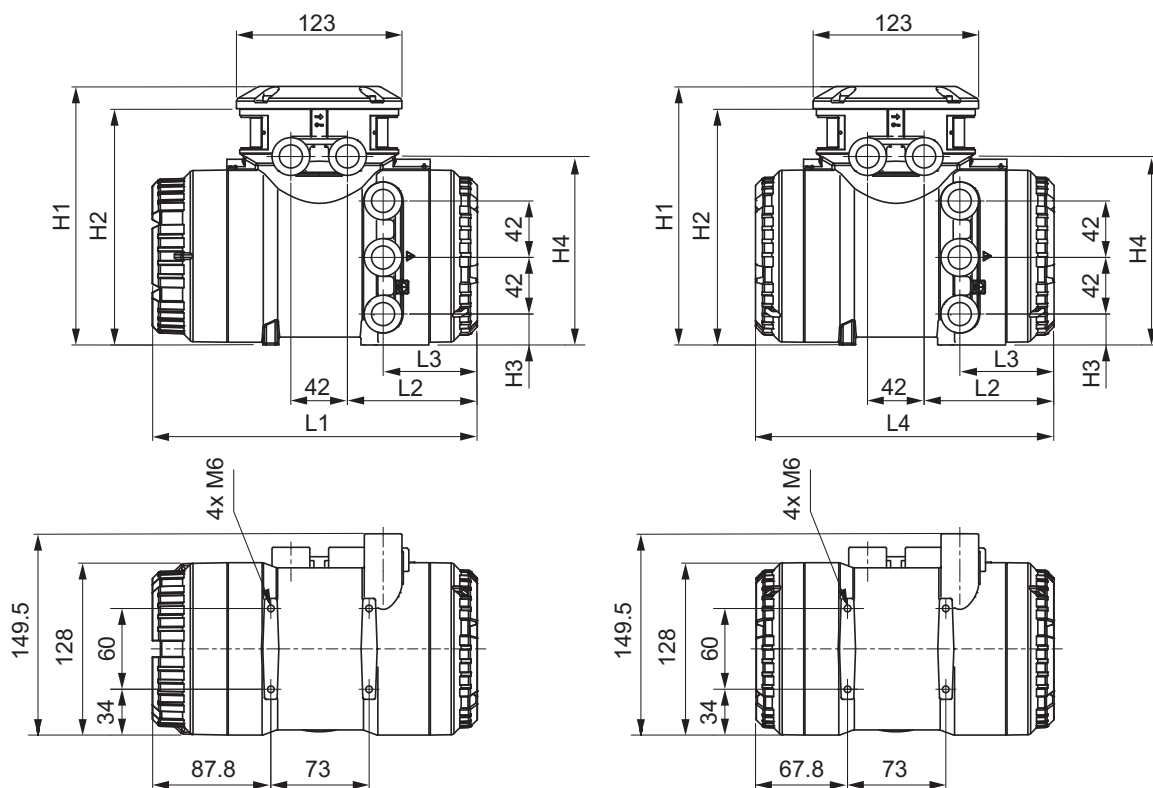


Fig. 4: Dimensions of transmitter in mm
(left: transmitter with display, right: transmitter without display)

Tab. 10: Overall length L1 - L4 and height H1 - H4 of transmitter (material: stainless steel, aluminum)

Material	L1 in mm (inch)	L2 in mm (inch)	L3 in mm (inch)	L4 in mm (inch)	H1 in mm (inch)	H2 in mm (inch)	H3 in mm (inch)	H4 in mm (inch)
Stainless steel	255.5 (10.06)	110.5 (4.35)	69 (2.72)	235 (9.25)	201 (7.91)	184 (7.24)	24 (0.94)	150.5 (5.93)
Aluminum	241.5 (9.51)	96.5 (3.8)	70 (2.76)	221 (8.7)	192 (7.56)	175 (6.89)	23 (0.91)	140 (5.51)

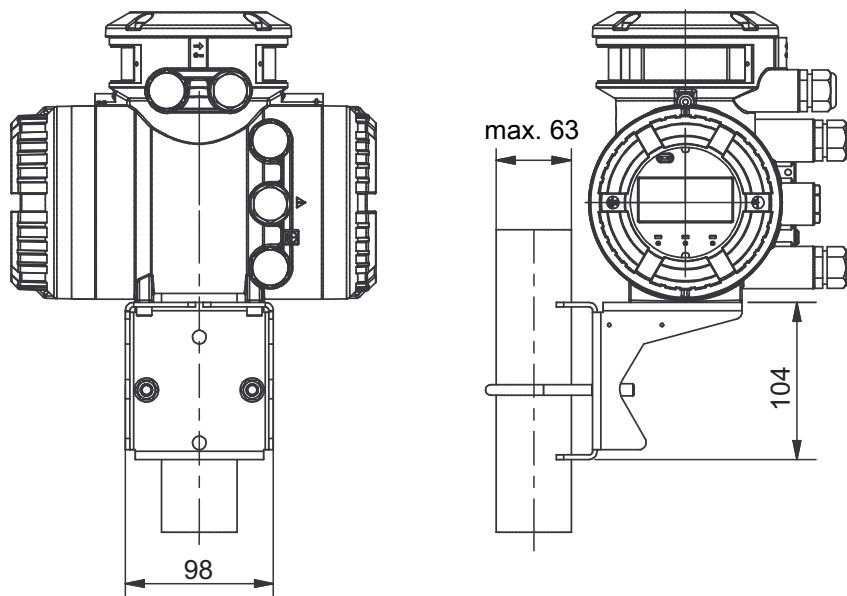
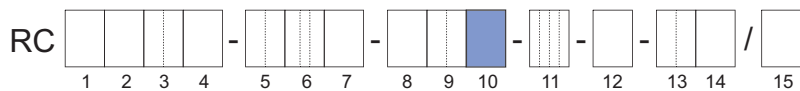


Fig. 5: Dimensions of transmitter in mm, attached to mounting bracket.

Transmitter weights



Model code (pos. 10)	Design type	Housing material of transmitter	Weight in kg (lb)
A, B, E, F	Remote	Aluminum	max. 4.4 (9.7)
J, K		Stainless steel	12.5 (27.6)

3 Wiring

3.1 Terminal configuration diagrams

3.1.1 Terminal for connection between sensor and transmitter

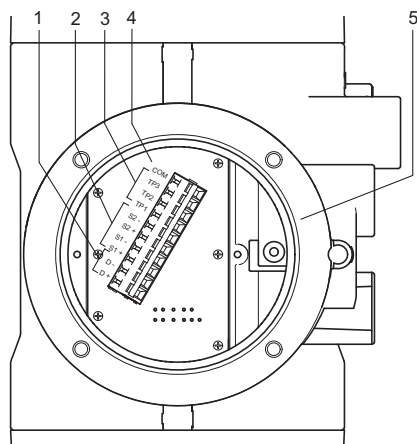


Fig. 6: Connection terminal circuits (transmitter on the left side, sensor on the right side)

1	Driver circuit (D+/D-)	4	Signal grounding
2	Sensor circuits (S1+/S1-, S2+/S2-)	5	Transmitter
3	Temperature measurement circuit (TP1, TP2, TP3)	6	Sensor

3.1.2 Terminal for I/O outputs and power supply

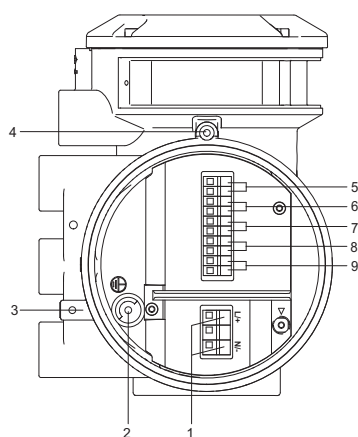


Fig. 7: Terminal for I/O outputs and power supply in transmitter

1	Power supply connection terminals	6	Connection terminals for I/O2 +/-
2	Grounding screw in terminal box	7	Connection terminals for I/O3 +/-
3	Grounding transmitter housing	8	Connection terminals for I/O4 +/-
4	Locking screw	9	WP: Write-protection terminal
5	Connection terminals for I/O1 +/-		

4 Connecting cable dimensions and weights

4.1 Standard cable (option /L_ without option /LAC)

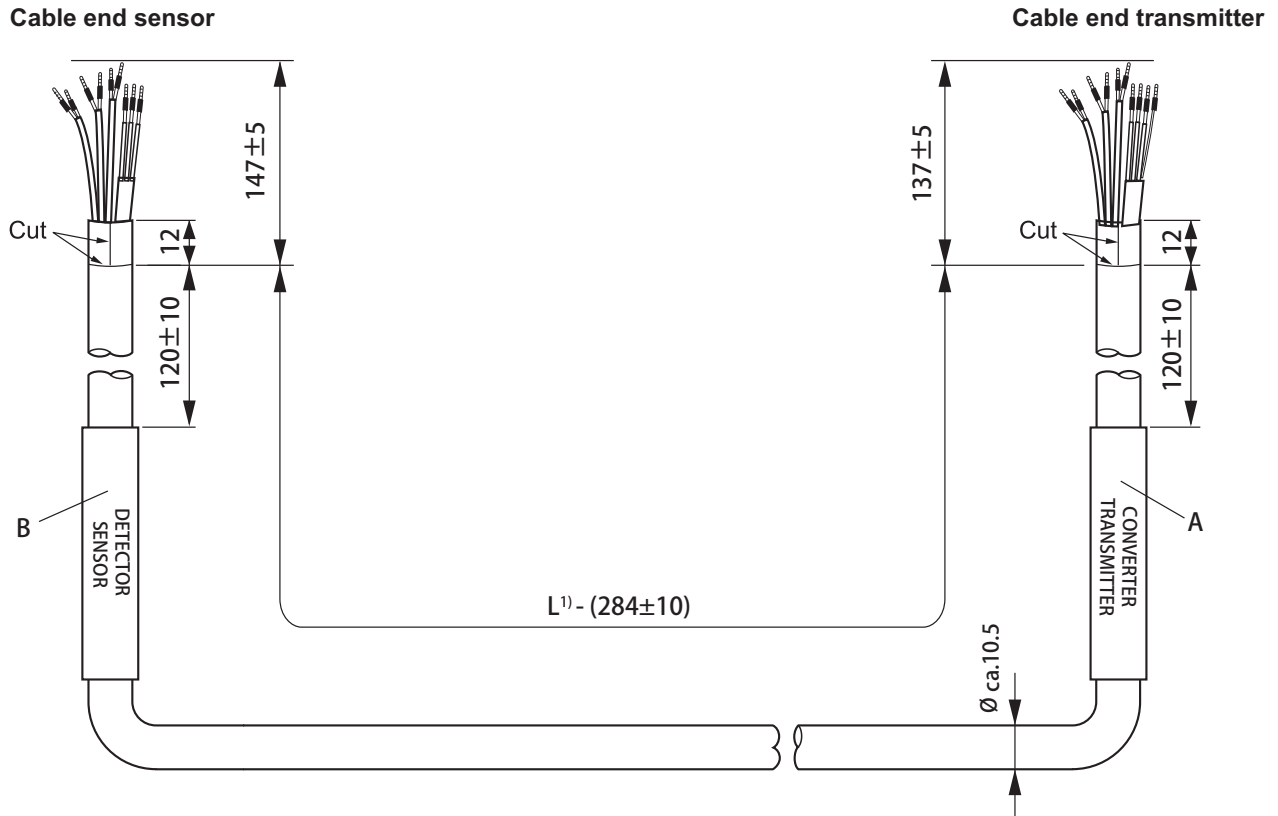


Fig. 8: Dimensions of standard cable (option /L_ without option /LAC), terminated in mm and labelling

Label number	Label name	Installation status
A	CONVERTER/TRANSMITTER	Factory labeled
B	DETECTOR/SENSOR	

1) L: Length of connecting cable

Options	Length of connecting cable in m (ft)	Colour of connecting cable
/L000	Without connecting cable	Non Ex: gray / Ex: blue
/L005	5 m (16.4 ft)	
/L010	10 m (32.8 ft)	
/L015	15 m (49.2 ft)	
/L020	20 m (65.6 ft)	
/L030	30 m (98.4 ft)	

- Weight of cable ≤ 0.200 kg/m (0.134 lb/ft)

A cable assembly kit is included for possible repairs.

4.2 Steel armored cable (option /L... with option /LAC)

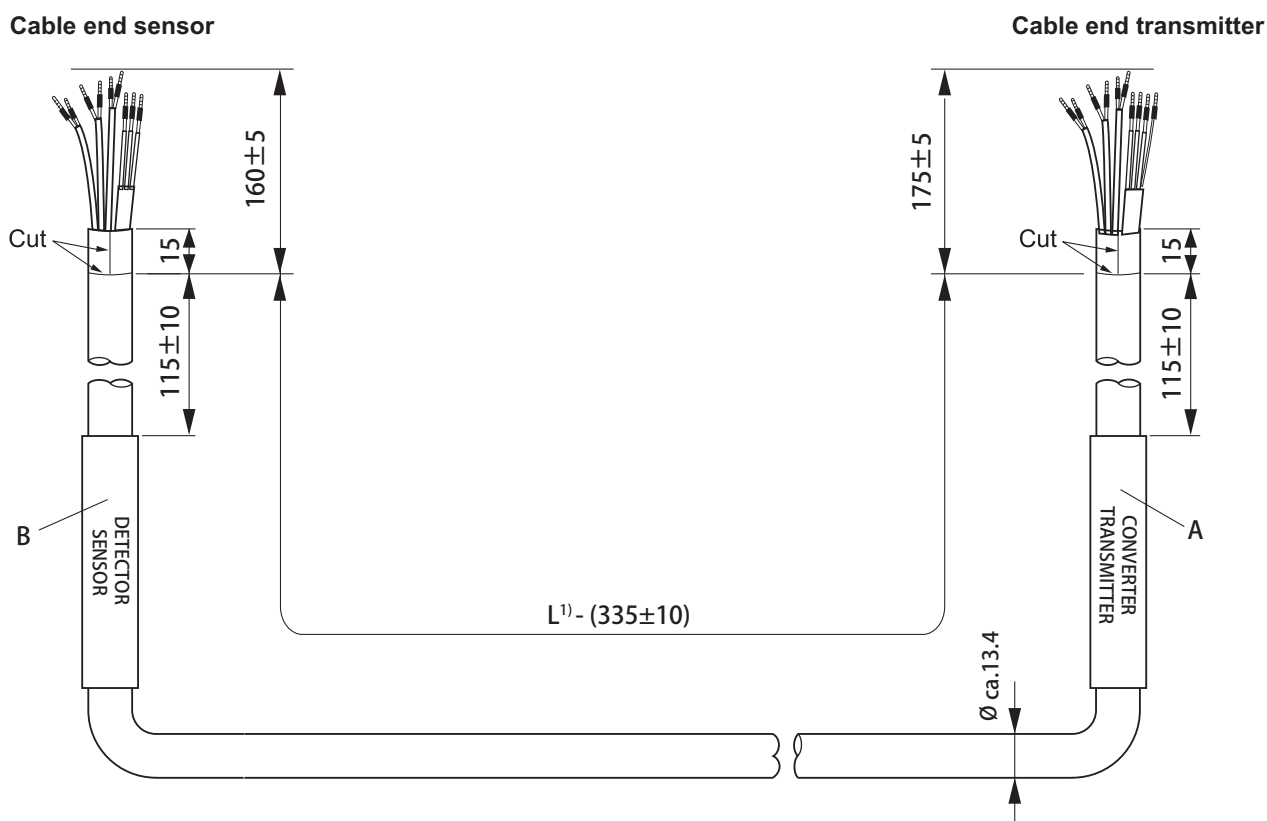


Fig. 9: Dimensions of standard cable (option /L... with option /LAC), terminated in mm and labelling

Label number	Label name	Installation status
A	CONVERTER/TRANSMITTER	Factory labeled
B	DETECTOR/SENSOR	

1) L: Length of connecting cable

Options	Length of connecting cable in m (ft)	Colour of connecting cable
/L005, /LAC	5 m (16.4 ft)	Blue
/L010; /LAC	10 m (32.8 ft)	
/L015, /LAC	15 m (49.2 ft)	
/L020, /LAC	20 m (65.6 ft)	
/L030, /LAC	30 m (98.4 ft)	

- Weight of cable ≤ 0.300 kg/m (0.202 lb/ft)

A cable assembly kit is included for possible repairs.

4.3 Fire retardant cable (option /Y₋₋₋)

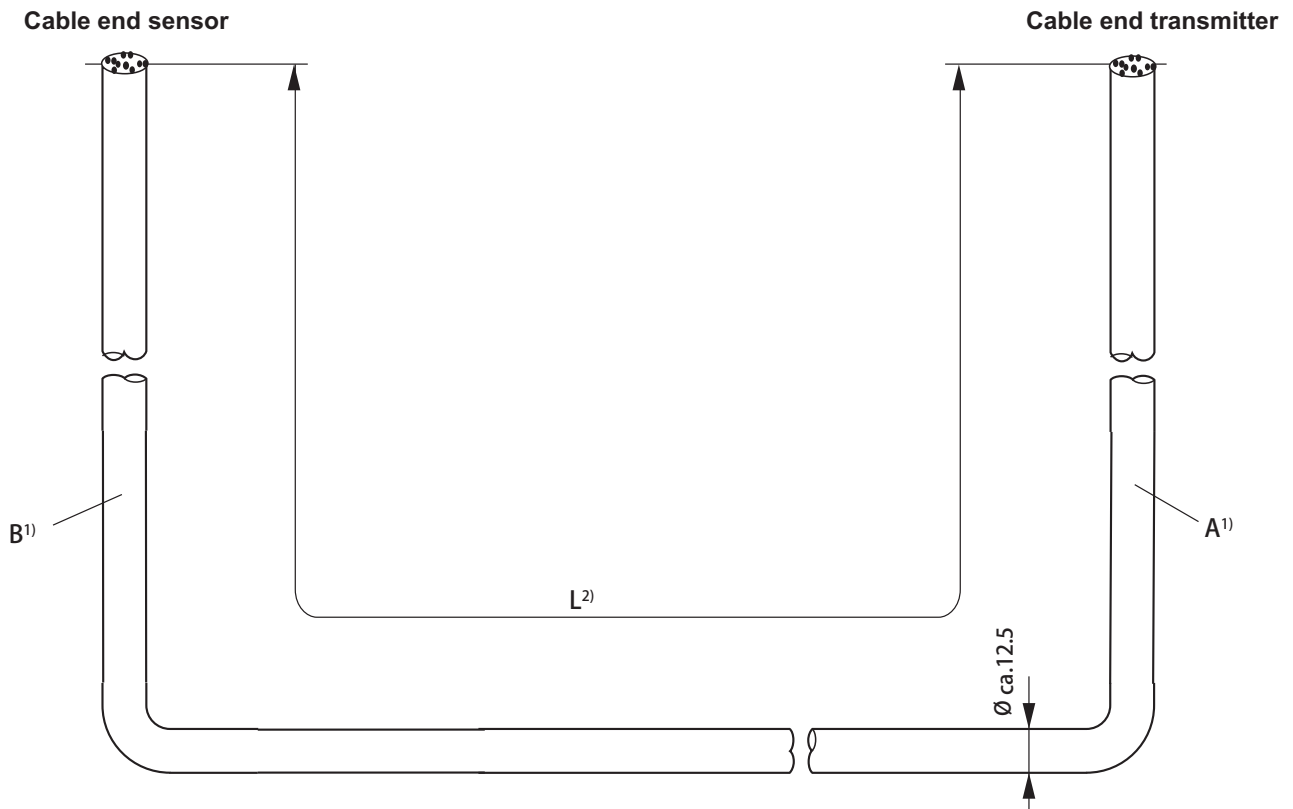


Fig. 10: Dimensions of fire retardant cable (option /Y₋₋₋), not terminated³⁾ in mm and labelling

Label number	Label name	Installation status
A	CONVERTER/TRANSMITTER	Separately enclosed
B	DETECTOR/SENSOR	

¹⁾ Installation of label A/B: Label A/B is included in termination kit. Install the label inside an appropriate cable area near the mounted cable gland.

²⁾ L: Length of connecting cable

³⁾ The cable can also be supplied pre-assembled.

Options	Length of connecting cable in m (ft)	Colour of connecting cable
/Y000	Without connecting cable	Gray
/Y005	5 m (16.4 ft)	
/Y010	10 m (32.8 ft)	
/Y015	15 m (49.2 ft)	
/Y020	20 m (65.6 ft)	
/Y030	30 m (98.4 ft)	

- Weight of cable ≤ 0.270 kg/m (0.181 lb/ft)

A cable assembly kit with instructions is included.

5 Japan Ex cable gland dimensions (option /V5_)

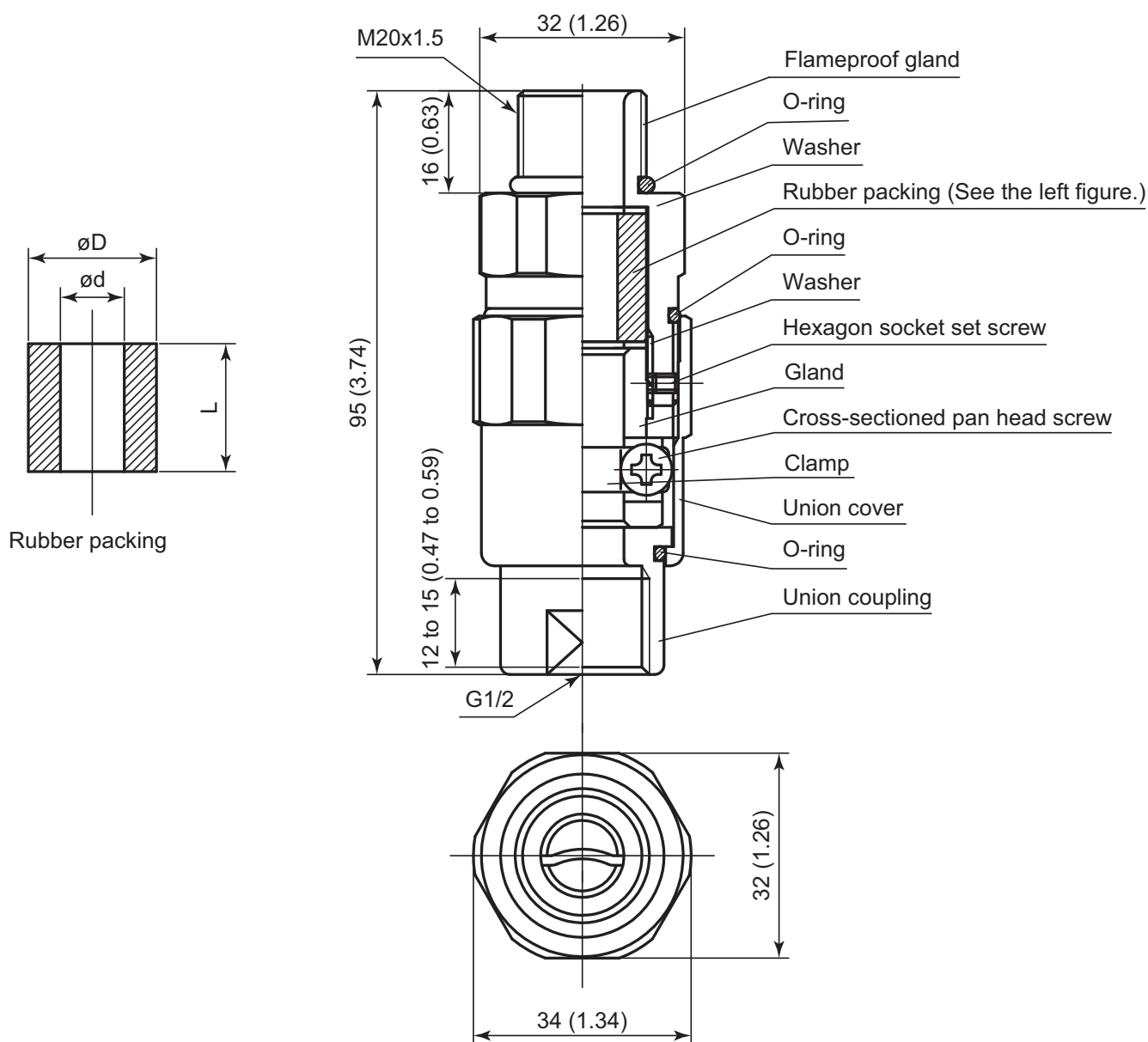


Fig. 11: Dimensions of cable gland (option V5_L), in mm (inch)

Dimensions of rubber packing (before compression)			Identification mark of rubber packing	Cable outer diameter	
L	Ø D	Ø d		Min.	Max.
in mm (inch)					
20 (0.79)	Ø 20 (0.79)	Ø 10 (0.39)	Ø 10 (0.39)	Ø 8.0 (0.31)	Ø 10.0 (0.39)
20 (0.79)	Ø 20 (0.79)	Ø 12 (0.47)	Ø 12 (0.47)	Ø 10.0 (0.39)	Ø 12.0 (0.47)

TRADEMARKS

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