



Product sheet

975 SmartRadar IS storage tank measurement

The radar level gauge for accurate level measurement on smaller sized storage tanks

Benefits

Specifically designed for
medium accuracy measurement

Pre mounted antennas
for easy installation

Cost effective 2-Wire technology

Remotely configurable
and serviceable

Easy at tank operation via
local programming unit

The SmartRadar IS forms the youngest sister to complete the Enraf SmartRadar family. This level gauge features state of the art technology for high resolution and accuracy.

The narrow beam makes this gauge ideally suitable for medium accuracy level measurement on smaller sized storage tanks.

With the option for a built in display and external indicator, the SmartRadar IS enables local and precise information at the gauge or around the tank at all times.

The 975 SmartRadar IS is powered via a cost effective 2-wire current loop installation or an active 4-wire connection in case of an external power supply. Digital 2-wire communication conform the latest open communication standards is optionally available.

Device commissioning and monitoring can be performed remotely via the same 2 communication wires. A complementary local programming unit built in the gauge or external indicator allows convenient adjustment and device monitoring at the gauge or at the base of the tank.



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Measuring specifications

Measuring range	: DN 50, ANSI 2"	0 to 15 m
	: DN 80, 100, 150 ANSI 3", 4", 6"	0 to 20 m
Minimum ullage	: 0	
Instrument accuracy	: 0.05% of measuring range, ≥ 3 mm for free space applications (under ref. conditions)	
Measuring resolution	: 1 mm	

Principles

Measuring principle	: Pulse radar
Operating frequency	: 26 GHz

Mechanical

Dimensions	: See drawing on opposite page
Weight	: Approx. 14 kg for DN150PN16C flange and \varnothing 95 mm antenna
Cable entries	: 2 pc. M20x1,5 or NPT 1/2" EEx d

Environmental

Ambient temperature	: -40°C to +80°C
Storage temperature	: -50°C to +80°C
Protection class	: IP 67
Safety	: Intrinsic safe in conjunction with safety barrier or isolator ATEX II 1G EEx ia IIC T6 : Pressure tight encapsulated housing ATEX II 2G EEx d ia IIC T6
Approvals	: PTB, FM, ABS, LRS, GL, CSA
Over voltage	: Category III
Pollution	: Degree I

Materials

Instrument housing	: Aluminum die-casting (GD-AISI 10 Mg)
EEx-d compartment	: Aluminum ingot casting (GD-AISI 7 Mg)
Instrument finish	: Powder coated
Process fitting	: Stainless steel 1.4435
Antenna	: Wetted parts - stainless steel 1.4435 and PTFE : Seal – VITON, Kalrez optional

Electrical

Power supply	: 4-wire	20 ... 72 VDC
		20 ... 250 VAC, 50 ... 60 Hz
	: 2-wire	14 ... 36 VDC
	: 2-wire Ex ia	14 ... 29 VDC
Current rating	: 2-wire Ex d ia	20 ... 36 VDC
	: 4-wire	max. 130 mA
Power rating	: 2-wire	max. 22.5 mA
	: 4-wire	max. 2.1 W, 7.5 VA
	: 2-wire	55 ... 810 mW

Transmission

Output signal	: 4 ... 20 mA analogue signal		
	: 4 ... 20 mA HART® digital communication		
	: Profibus PA digital communication		
Output load	: 4 ... 20 mA in 2-wire	Non IS	max. 975 Ω
		Ex d ia	max. 720 Ω
		Ex ia	max. 670 Ω
	: 4 ... 20 mA in 4-wire		max. 500 Ω
Cabling	: Generally 2,5 mm ² , ground connection max. 4 mm ²		

Options

Indication	: Integrated display
	: External indicator
Adjustment	: Via optional adjustment module MINICOM
	: PACTware™ and CONNECT 3

Identification code

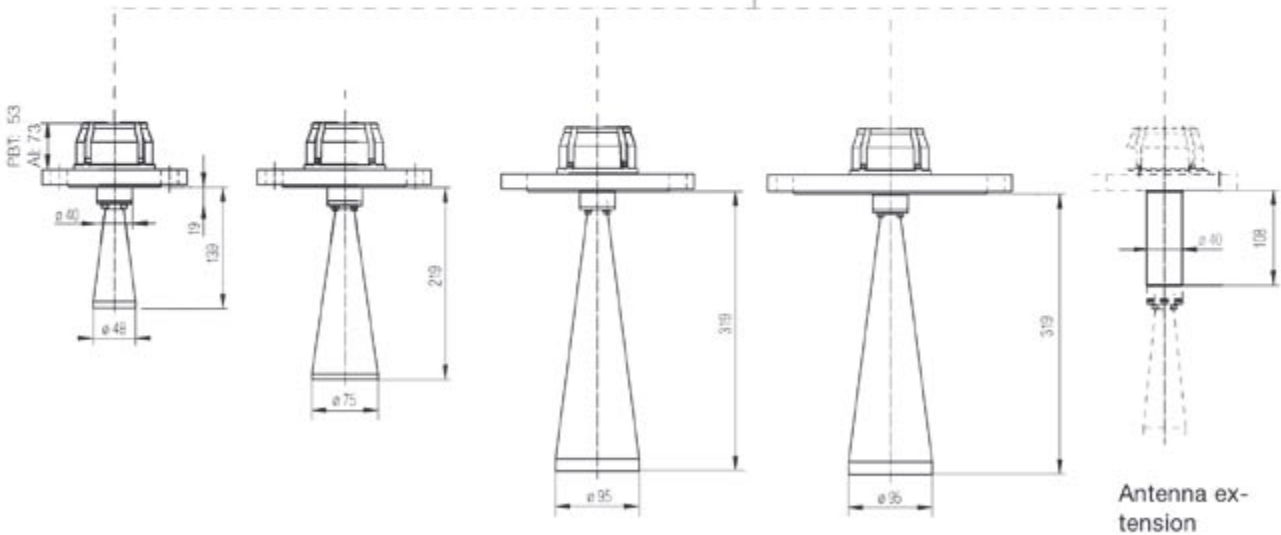
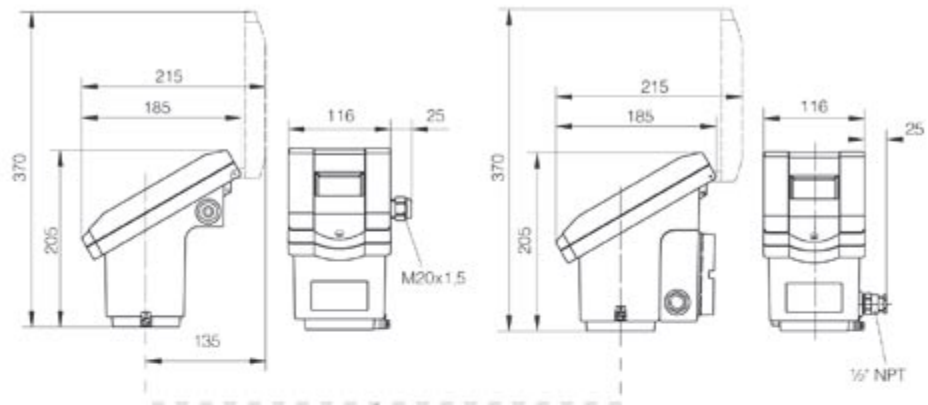
Pos 1, 2, 3, Product designation																
P	S	4														
			Pos 4													
			4	Radar sensor with flange process fitting												
				Pos 5, 6 Safety approvals												
			X	X	None (only when Pos 14 = F)											
			C	X	ATEX II 1G, 1/2G EEx ia IIC T6 (only when Pos 7 = D or G and Pos 14 = F)											
			D	X	ATEX II 1/2G EEx d ia IIC T6 (only when Pos 14 = G)											
			C	A	ATEX II 1G, 1/2G EEx ia IIC T6 + WHG (only when Pos 7 = D or G and Pos 14 = F)											
			D	A	ATEX II 1/2G EEx d ia IIC T6 + WHG (only when Pos 14 = G)											
			X	V	FCC											
			X	U	FM Div. 2 Zone 2											
			C	U	FM Div. 1 Zone 0 FCC (only when Pos 7 = D or G)											
			D	U	FM Div. 1 Zone 0 FCC; pressure tight encapsulation (only when Pos 14 = G)											
				Pos 7 Mains supply												
			B	20 ... 72 V DC; 20 ... 250 V AC; 4 ... 20 mA, HART® (four-wire)												
			D	Two-wire (loop powered), 4 ... 20 mA, HART®												
			G	Profibus PA												
				Pos 8 Module												
			X	Without adjustment module MINICOM												
			B	With adjustment module MINICOM (built in)												
				Pos 9 Display												
			X	Without display												
			A	With integrated display												
				Pos 10, 11, 12 Flange, Horn antenna, Range												
			G	C	C	DN 50 PN 40C, ø48 mm, max. 15 m										
			F	C	E	DN 80 PN 40C, ø75 mm, max. 20 m										
			C	C	G	DN 100 PN 16C, ø95 mm, max. 20 m										
			D	C	G	DN 150 PN 16C, ø95 mm, max. 20 m										
			A	R	C	ANSI 2" 150 psi RF, ø48 mm, max. 15 m										
			B	R	E	ANSI 3" 150 psi RF, ø75 mm, max. 20 m										
			C	R	G	ANSI 4" 150 psi RF, ø95 mm, max. 20 m										
			D	R	G	ANSI 6" 150 psi RF, ø95 mm, max. 20 m										
				Pos 13 Seal of the radar coupling												
			V	Viton -25 °C ... +150 °C												
			N	Viton -40 °C ... +150 °C												
			A	Kalrez -15 °C ... +150 °C												
				Pos 14 Housing												
			F	Aluminium housing PBT, M20 x 1.5 cable entry												
			G	Aluminium housing PBT EEx d, 1/2" NPT cable entry												
				Pos 15 Antenna options												
			X	None												
			J	Extension for horn antenna												
P	S	4	4	D	X	B	X	X	D	R	G	V	G	X	Typical identification code	
P	S	4	4												Your identification code	

Accessories and programming tools

Description	Part number
Adjustment module MINICOM	3882060
External indicator DIS50EX.XBA	3882061
Programming software DTM.PS	3882062
Programming adapter CONNECT3	3881063

Aluminium

Aluminium with Exd terminal compartment



DN 50 PN 40 (C)
ANSI 2" (RF)

DN 80 PN 40 (C)
ANSI 3" (RF)

DN 100 PN 16 (C)
ANSI 4" (RF)

DN 150 PN 16 (C)
ANSI 6" (RF)

Antenna extension

We at Enraf are committed to excellence.

Enraf B.V.

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