



The superior alternative for float and tape and other low cost level gauges

Honeywell Enraf offers the 854XTG servo gauge as a superior alternative to mechanical float and tape gauges or other low cost level measuring devices. The instrument provides the superior servo gauge technology. The 854XTG servo gauge offers the proven accuracies and performances of the Advanced Technology Gauge (854ATG). The multi-functional instrument is modularly constructed. The option slots for additional features allow connecting to a wide range of other instruments e.g. temperature-, pressure-, interface measurement, indicator and more. Obviously the connectivity to various field busses and tank inventory or host systems can easily be accomplished. Simple configuration and diagnostics are possible through a hand held device or via configuration software.

Measuring specifications

Measuring range	: Standard 0 - 27 m (0 - 88 ft) Optional 0 - 37 m (0 - 121 ft) 0 - 35 m (0 - 115 ft) (with measuring wire up to 150 m (492 ft))
Measuring accuracy level	: ± 1 mm (± 0.04 ") ¹⁾
Measuring accuracy interface	: ± 2 mm (± 0.08 ") ²⁾
Measuring accuracy density	: ± 5 kg/m ³ (± 0.31 lb/ft ³) ³⁾
Measuring accuracy temp.	: ± 0.1 °C (± 0.18 °F) ^{1) 4)}
Sensitivity	: ± 0.1 mm (± 0.004 ") ¹⁾
Repeatability	: ± 0.1 mm (± 0.004 ") ¹⁾
Wave integration time	: Programmable, three setpoints, between 0.5 s and 10 s

Mechanical

Flange	: 2" 150 lbs ff acc. to ANSI B16.5, finish: turning, Ra = 3.2 µm - 12.5 µm compatible with DN50, PN20, ff, acc. to ISO 7005-1
Dimensions	: See back page
Weight	: 16 kg (35 lb)
Cable entries	: 4 pcs ¾" NPT threaded

Environmental

Operating pressure	: Up to 6 bar / 0.6 MPa (90 psi)
Ambient temperature	: -40 °C to +65 °C (-40 °F to +149 °F)
Protection class	: IP 65 according to EN 60529 (NEMA 4)
Safety	: Explosion proof - II 1/2 G EEx d IIB T6 or EEx d [ia/ib] IIB T6 according to ATEX - Class I, Division 1, Groups B, C and D, in acc. to ANSI / NFPA 70 (FM, USA)

Materials

Housing	: Cast aluminum Int. reg. AA A356 EN AC-AISI7Mg0.3 EN1706
Finish	: Chromatized according to MIL-C-5541C
Measuring drum, drum shaft	: Stainless steel (1.4401) EN10088 @ AISI 316
Measuring wire	: See 'Identification code', Pos 12
O-rings	: Drum cover Silicone / FEP (others NBR 70)

Electrical

Power supply	: 110/130/220 V (+10% to -20%) and 230 V ($\pm 15\%$), optional 65 V (+10% to -20%), also suitable for 240 V (+10% to -20%)
Frequency variations	: 50 Hz to 60 Hz ($\pm 10\%$)
Power rating	: 25 VA, $I_{\max} = 2$ A

Transmission

Type	: Serial, ASCII coded, Bi-Phase Mark modulated (BPM)
Isolating voltage	: > 1,500 V
Lightning protection	: Full galvanic separation via isolating transformers
Protocol	: Standard Enraf fieldbus (GPU protocol)
Common mode rejection	: > 150 dB
Cabling	: Two conductors, twisted pair, $R_{\max} = 200 \Omega$ / line, $C_{\max} = 1 \mu\text{F}$
Transmission to	
Portable Enraf Terminal (PET)	: Infra-red, serial

Options

Alarm relay outputs	: 2x SPDT, galvanically isolated, $V_{\max} = 50$ Vac or 75 Vdc, $I_{\max} = 3$ A
Density measurement	: See 'Identification code', Pos 15 (with density displacer)
Analog level output	: 4 - 20 mA (accuracy $\pm 0.1\%$ full scale)
Input boards	: Spot RTD, VITO probes for average temperature and/or water measurement, HART® devices
Data transmission	: Standard Modbus via RS-232C or RS-485 i.s. transmission for Tank Side Indicator (TSI)
Cable entries	: Adapters available to fit other sizes cable glands

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¹⁾ Under reference conditions

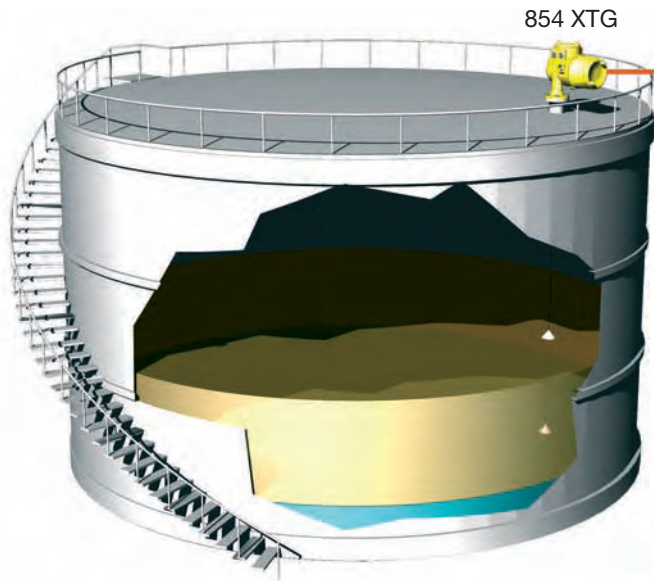
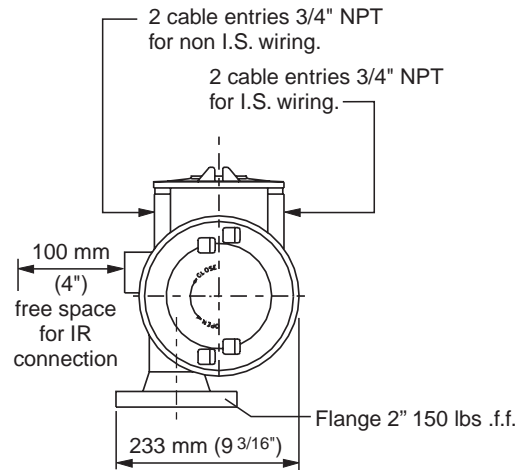
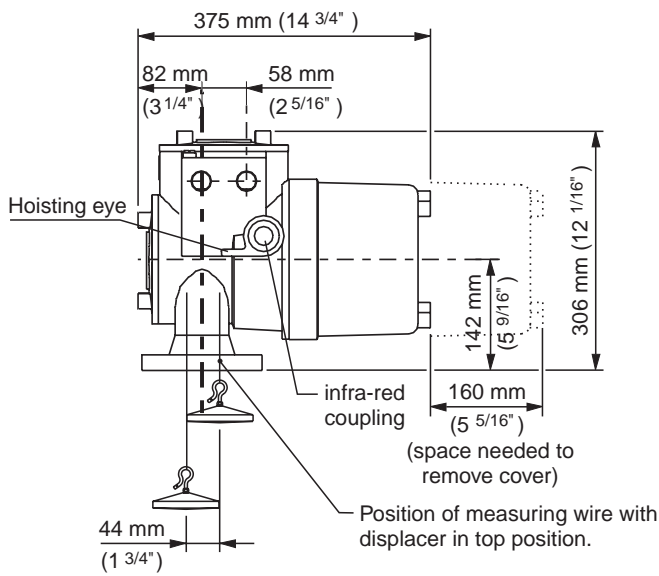
²⁾ Difference product density 100 kg/m³ (6.25 lb/ft³)

³⁾ (optional) with a density displacer and calibrated for density measurement

⁴⁾ With VITO temperature probe

Pos 1 Application																	
U	General purpose																
X	W&M certified																
Pos 2 Data transmission																	
E	Enraf Bi-phase mark protocol (standard)																
I	i.s. Output for Tank Side Indicator (TSI) and Enraf Bi-Phase Mark (BPM) protocol																
R	RS-232C GPU protocol (only when Pos 4 = B, C, J, U or Z)																
S	RS-485 GPU protocol (only when Pos 4 = B, C, J, U or Z)																
V	RS-232C standard Modbus (only when Pos 4 = B, C, J, U or Z)																
W	RS-485 standard Modbus (only when Pos 4 = B, C, J, U or Z)																
Pos 3 Display																	
B	Without display																
Pos 4 I/O options																	
B	Spot temperature Pt100																
C	VITO temperature and/or water probe																
J	VITO temperature and/or water probe + HART device(s)																
U	Spot temperature Pt100 + HART device(s) (not possible when Pos 2 = I)																
V	Analog level output																
W	Analog level output + VITO temperature and/or water probe																
X	Analog level output + VITO temperature probe																
Z	None																
Pos 5, 6, 7 Instrument designation																	
8	5	4	Servo gauge XTG														
Pos 8 Pressure version																	
B	Up to 6 bar 0.6 MPa (90 psi)																
Pos 9, 10 Drum compartment & flange																	
			mat. *)	flange	acc. to	finish	compatible with	acc. to									
2	1		Al	2" 150 lbs ff	ANSI B16.5	turning, Ra = 3.2 - 12.5 µm	DN50, PN20 ff	ISO 7005-1									
Pos 11 Safety approvals																	
A	ATEX		Europe			For other approvals please contact your nearest Enraf office											
C	CSA		Canada														
F	FM		USA														
Pos 12 Measuring range & wire material																	
2	27 m (88 ft)		AISI 316			K	37 m (121 ft) Hasteloy C22										
A	27 m (88 ft)		Hasteloy C22			L	37 m (121 ft) Tantalum										
B	27 m (88 ft)		Tantalum			M	37 m (121 ft) Invar										
C	27 m (88 ft)		Invar			N	37 m (121 ft) Platinum / 20% Iridium										
D	27 m (88 ft)		Platinum / 20% Iridium			9	35 m (115 ft) AISI 316										
3	37 m (121 ft)		AISI 316				with 150 m (492 ft) wire length										
Pos 13 Purge connection																	
*	Option not used																
Pos 14 Mains supply																	
A	220 V		50/60 Hz			R	130 V		50/60 Hz								
C	110 V		50/60 Hz			S	65 V		50/60 Hz								
K	230 V		50/60 Hz														
Pos 15 Density measurement																	
D	With servo density measurement				*	Option not used											
Pos 16 Alarms																	
W	With 2 programmable SPDT alarms				Z	No alarms											
U	E	B	Z	8	5	4	B	2	1	A	2	*	A	*	Z	Typical identification code	
		B		8	5	4	B	2	1			*				Your identification code	

Dimensional drawing



Cable specifications Serial transmission

Number of wires : 1 twisted pair (pref. shielded)
 Resistance : $R_{max} = 200 \Omega / \text{line}$
 Capacitance : $C_{max} = 1 \mu\text{F}$

Outputs

- Modbus
- 4-20 mA for level
- Two relay level alarms
- i.s. output for Tank Side Indicator (TSI)
- Digital transmission to
 - indicators
 - systems

Inputs

- HART® devices
- Spot temperature element
- VITO probes for average temp. and/or water bottom measurement



Field interface

Entis system

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