



The economical, easy to read and accessible display unit

The compact 977 Tank Side Indicator (TSI) is a digital display unit providing a safe and convenient way to read gauge data at ground level from the industry standard Enraf level gauges.

The TSI is plug and play, easy to install and mountable in a variety of ways, for example on a wall or railing. No additional power supply is required, a two-wire connection to the level gauge I.S. output is sufficient. Designed specially to bring at ground level a wide range of tank gauging data, it saves time and helps to promote safety by eliminating unnecessary tank climbing. The TSI features an easy to read display that provides immediate access to accurate and real time readings on product level, temperature and gauge status.

Technical specifications

Display	
Type	: LCD, 2 lines, 16 alpha numeric characters per line
Mechanical	
Dimensions (w x h x d)	: 160 mm x 160 mm x 90 mm (6 5/16" x 6 5/16" x 3 9/16")
Weight	: 2.15 kg (4.7 lb)
Cable entry	: PG 16
Environmental	
Ambient temperature	: -25 °C to +65 °C (-13 °F to +149 °F)
Protection class	: IP 65, according to EN-IEC 60529 (NEMA 4)
Safety	: Explosion proof <ul style="list-style-type: none"> - II 2G EEx ib IIB T4 according to ATEX - Class I, Division 1, Groups B, C and D, according to ANSI NFPA 70 (FM, USA)
Materials	
Housing	: Coated aluminum
Electrical	
Power supply	: Intrinsically safe from Enraf level gauge
Transmission	
Type	: Superimposed on supply lines (FSK based on Bell 202 modem standard) i.s. transmission option for TSI is required in Enraf level gauge
Cabling (i.s.)	: One twisted pair shielded, $R_{max} = 5 \Omega / \text{line}$, $C_{max} = 1,27 \mu\text{F}$, $L_{max} = 800 \mu\text{H}$
Options	
Keyboard	: 4 key touch panel
Mounting brackets	: For railing 1½", 2" and 3"
Cable gland	: PG 16
Cable entry	: Adapters available to fit other size cable gland <ul style="list-style-type: none"> - M20 x 1,5 - 3/4" NPT

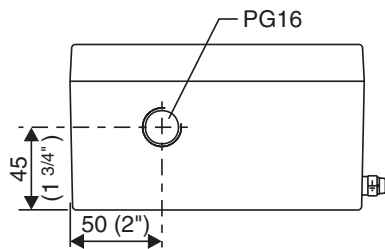
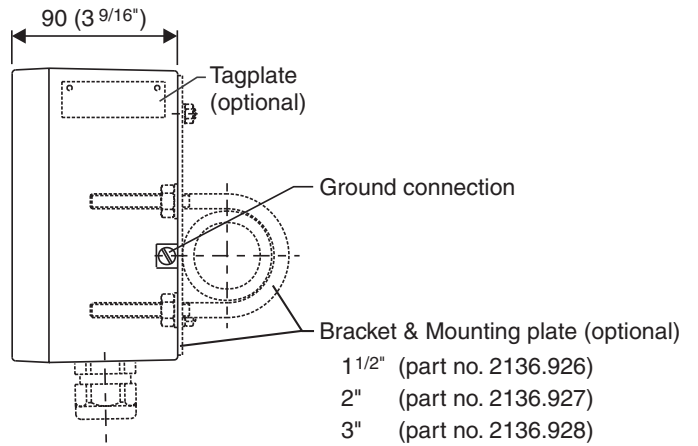
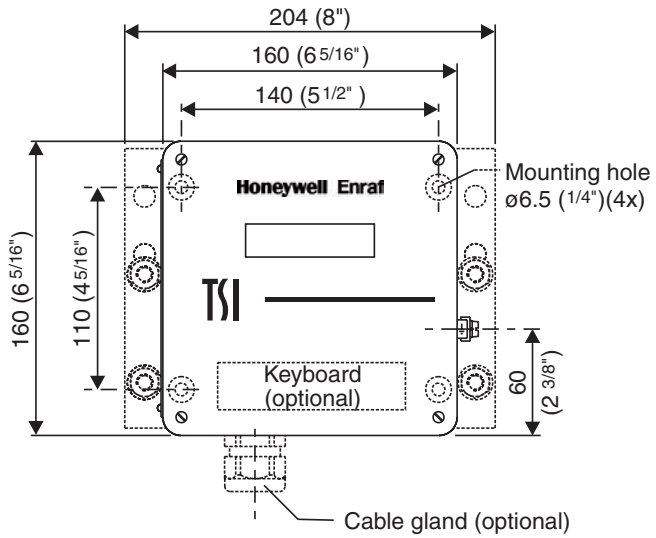
Indicator functions

When enabled in Enraf level gauge output		TSI standard	TSI with keyboard
Level (mm, ft,in, /16)	standard	■	■
Product temperature (°C, °F)		■	■
Gauge status		■	■
Level alarm status (--,HH,HA,LL,LA)		■	■
Displacer status (-, ↑, ↓)		■	■
Operational status (test mode, dip mode, etc.)		■	■
Limit switch status (-, C)		■	■
Gauge commands (test, interface measurement, calibrate, etc.)	selectable		■
Gas temperature (°C, °F, incl. status info)			■
Servo or HIMS density (kg /m ³ , °API, lb/ft ³ incl. status info)			■
Pressure P1 (Pa, kPa, psi, incl. status info)			■
Pressure P3 (Pa, kPa, psi, incl. status info)			■
Water level (mm, ft,in, /16)			■

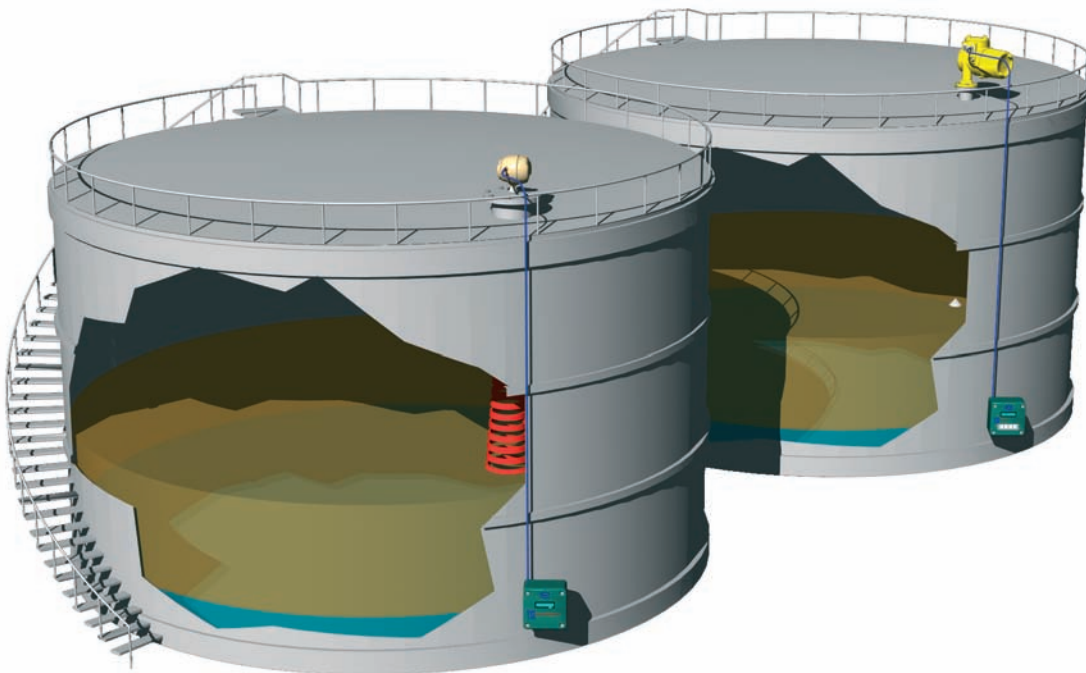
Identification code

Pos 1 Application										
U	General purpose									
X	With sealing facilities									
Pos 2 Option not used										
*										
Pos 3 Option not used										
*										
Pos 4 Version										
A	Standard									
B	Including keyboard									
Pos 5, 6, 7 Instrument designation										
9	7	7	Tank Side Indicator							
Pos 8 Mounting arrangement										
S	Wall mounting									
A	Mounting on railing with 1½" bracket									
B	Mounting on railing with 2" bracket									
C	Mounting on railing with 3" bracket									
Pos 9 Cable entry										
S	PG 16 threaded (standard in housing)									
G	M20 x 1,5 (via adapter)									
N	¾" NPT (via adapter)									
Pos 10 Safety approvals										
A	ATEX Europe									
F	FM USA									
For other approvals please contact your nearest Enraf office										
U	*	*	A	9	7	7	S	S	A	Typical identification code
	*	*		9	7	7				Your identification code

Dimensional drawing



Dimensions in mm (")



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