Tank inventory anywhere in your tank farm

Honeywell Enraf's Field Display & Interface Unit (FDI) provides tank inventory information in the field, where it is needed. It is a versatile, EEx-d approved instrument with several interface options, which can even be part of W&M approved applications. The design of the FDI is therefore based on reliable and uninterrupted data supply in all circumstances. The unit can be used in stand alone mode using the Enraf Bi-phase Mark communication protocol for direct connection to an Honeywell Enraf gauge, or any other gauge using this standard communication protocol in tank farms. The unit will interrogate the gauge and display its measured data.

Technical specifications

Display		
Type	:	LCD contrast adjustable 2 lines, 16 alphanumeric characters per line
Decimal separator	:	period “.” or comma “,” selectable
Mechanical		
Dimensions (w x h x d)	:	208 mm x 198 mm x 300 mm (8.2” x 7.8” x 11.9”)
Weight	:	12 kg (26 lb)
Cable entries	:	3 pcs ¾” NPT threaded (Ex d glands or sealed conduit may be required)
Environmental		
Ambient temperature	:	-40 °C to +60 °C (-40 °F to +140 °F)
Protection class	:	IP 67 / NEMA 6P
Safety	:	Explosion proof - II 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 NFPA 70 (FM, USA)
Materials		
Housing	:	Cast aluminum Int. reg. AA A356 EN1706 AC-AlSi7Mg0,3
Finish	:	Chromatized according to MIL-C-5541C
O-rings	:	NBR 70
Electrical		
Power supply	:	110/130/220 V (+10% to -20%) and 230 V (±15%), optional 65 V (+10% to -20%), also suitable for 240 V (+10% to -20%)
Frequency variations	:	50 Hz to 60 Hz (±10%)
Power rating	:	25 VA, Imax = 2 A (20 VA for FM)
Transmission		
Type	:	Serial, Bi-Phase Mark modulated (BPM), Enraf GPU protocol
Isolating voltage	:	> 1.500 V
Lightning protection	:	Full galvanic separation via isolating transformers
Cabling	:	Two conductors, twisted pair, Rmax= 200 Ω / line, Cmax < 1 μF
Communication with PET *	:	Infra-red, serial
Operational modes		
Six off	:	I Indicator mode (stand alone) F Indicator and fall back mode M Master mode D Master display scan mode (stand alone) H HTG level mode T Stand alone temperature gauge
Options		
Alarm relay output	:	2 x SPDT, galvanically isolated, Vmax = 50 Vac or 75 Vdc, Imax = 3 A (CSA 0.6 A), non inductive load
Fall back relay	:	Adjustable transmission time out 0 - 29,5 min, self polling, restarts on gauge restart
Analog level output	:	4 - 20 mA (accuracy ± 0.1% full scale)
Input boards	:	Spot RTD, VITO probes for average temperature and/or water measurement, HART® devices
Data transmision	:	Standard Modbus via RS-232C or RS-485 (only in operation modes H & T)
Cable entries	:	Adapters available to fit other size cable glands

HART® is a trademark of the HART Communications Foundation

*) PET = Portable Enraf Terminal

Pos 1 Application	
U	General purpose
X	W&M certified

Pos 2 Data transmission	
E	Enraf Bi-phase mark protocol (standard)
R	RS-232C GPU protocol (only when Pos 3 = B, C, J, U or Z)
S	RS-485 GPU protocol (only when Pos 3 = B, C, J, U or Z)
V	RS-232C standard Modbus (only when Pos 3 = B, C, J, U or Z)
W	RS-485 standard Modbus (only when Pos 3 = B, C, J, U or Z)

Pos 3 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)
V	Analog level output
W	Analog level output + VITO temperature and/or water probe
X	Analog level output + VITO temperature probe
Y	Analog level output + spot temperature Pt100 + VITO temperature and/or water probe + HART device(s)
Z	None

Pos 4 Alarm relay and fall-back relay	
F	With alarm relay and fall-back relay
Z	Without alarm relay and fall-back relay

Pos 5, 6, 7 Instrument designation	
8 7 7	Field Display & Interface

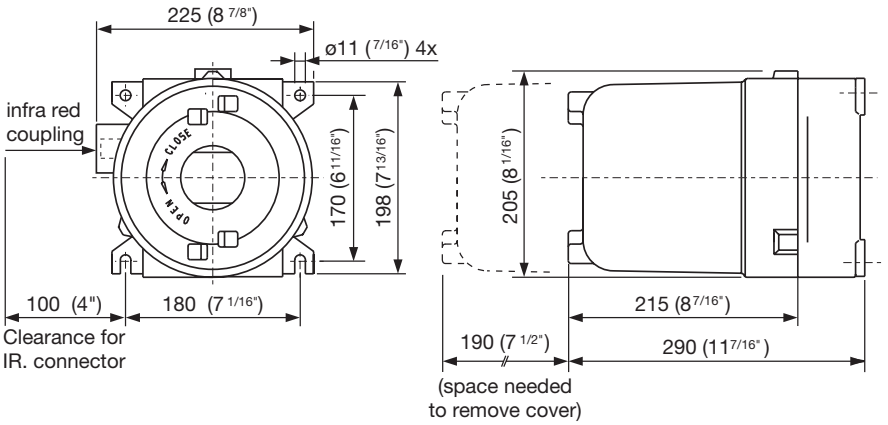
Pos 8 Mains supply		
A	220V	50/60 Hz
C	110V	50/60 Hz
K	230V	50/60 Hz
R	130V	50/60 Hz
S	65V	50/60 Hz

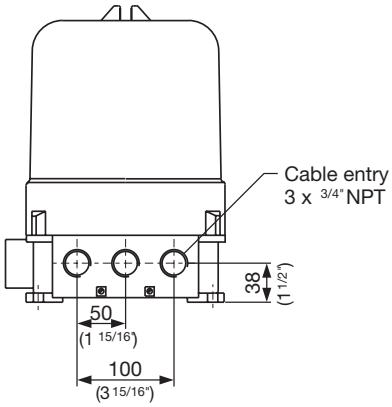
Pos 9 Application	
S	HIMS if Pos 3 = G, J, U or Y
T	HTG if Pos 3 = G, J, U or Y
U	HTG with water probe if Pos 3 = J or Y
Z	Basic indicator

Pos 10 Safety approvals	
A	ATEX Europe
F	FM USA
	For other approvals please contact your nearest Enraf office

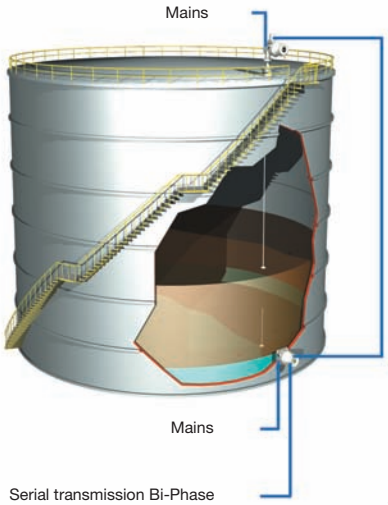
U	E	C	F	8	7	7	K	Z	A	Typical identification code
				8	7	7				Your identification code

Dimensional drawing



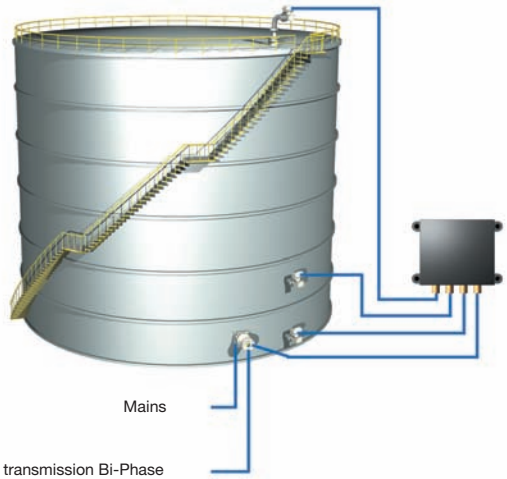


FDI at the foot of the tank



Serial transmission Bi-Phase Mark Modulation (BPM) to CIU Inventory system host communication

FDI with HTG system



Serial transmission Bi-Phase Mark Modulation (BPM) to CIU Inventory system host communication

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