



EMITTER
ELECTRONICS
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TANK LEVEL GAUGE

INS-04/RIS-04/RTSS-04

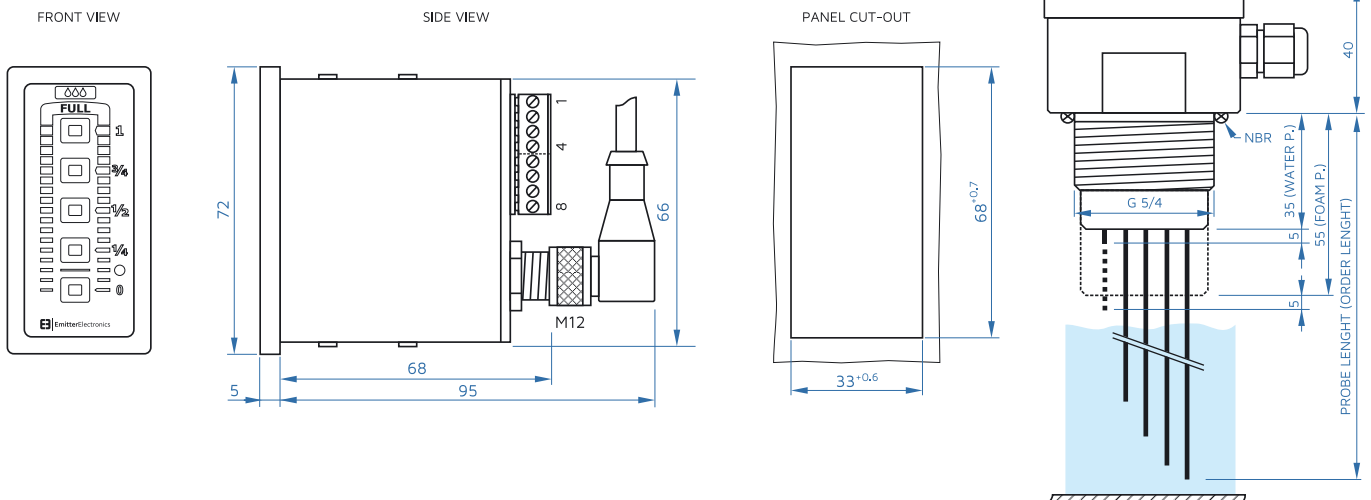


Features and Benefits

- 1 **160° Viewing Angle**
- 2 **I/O Driver For Low Water Warning, Autofill-Hysteresis, Mute input, Large Light Driver Etc.**
- 3 **CAN Bus Or 1 Wire Datalink**
- 4 **Super Bright LEDs**
- 5 **Dimmable-Light Sensor, Backlit**
- 6 **Conductive Probe Input**

INS-04 types of Tank Level Gauges are designed to display liquid's volume at an accuracy of 1/4 of the tank level using 5 ultra-bright LEDs. The gauge operates on basis of the conductance of the measured liquid using the conductive probe. The electrodes are placed at each quarter length of the probe.

Optional I/O driver can be integrated for low level warning output, autofill-hysteresis output, mute input, etc.



The Tank Level Gauge can be used as a stand-alone system or as a part of MMX system connected via CAN bus to IO Controller. Several slave indicators (small remote - RIS) can be connected to a master indicator INS to show

the same value on different locations or in combination with a XL remote indicator (RIXL) for the vehicle sides.

Connection

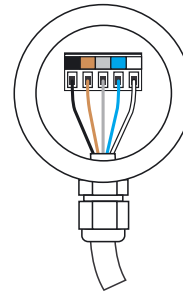
CONNECTION standard device

PIN	DESCRIPTION
1	BATTERY + (*15")
2	BATTERY -
3	OUT1/LLD5 -1 (OPTIONAL)
4	T-COMMUNICATION/ LLD5 -1 (OPTIONAL)
5	LLD5 -2 (OPTIONAL)
6	LLD5 -3 (OPTIONAL)
7	LLD5 -4 (OPTIONAL)
8	OUT2/LLD5 -5 (OPTIONAL)

CONNECTION CAN bus device

PIN	DESCRIPTION
1	BATTERY + (*15")
2	BATTERY -
3	OUT1 (OPTIONAL)
4	T-COMMUNICATION
5	IN1 (OPTIONAL)
6	CAN L
7	OUT2 (OPTIONAL)
8	CAN H

PROBE CONNECTION



Specifications

POWER	
Supply Voltage	9-30 V DC
Current	0.5 A maximum, no outputs active
Electrical Protection	overvoltage, transients, reverse polarity
INTERFACES	
CAN	1 x CAN, optional
CAN termination	120 ohm, solder pad on PCB
Serial communication	1 x T (1 Wire), optional
I/O	
Probe input	Conductive probe with max. 5 rods
Digital Input	GND, only with CAN bus device
Digital Output OUT1	<i>*Only version with integrated I/O driver</i> positive switching (relay), max. 6 A (Low water warning)
OUT2	positive switching (relay), max. 1.5 A (Autofill-Hysteresis)
OUT LLD5	5x negative switching (low-side), max. 1.8 A (large light driver)
Loads	inductive, resistive
PROBE-OEM	
Detection method	Conductive
Probe length	250-2000 mm
Probe material	rods in stainless steel 316 (1.4305)

ENVIRONMENT	
IP Class (IEC529)	front panel IP67, back IP20, probe IP67
EMC Conformity	EN61000-6-2 noise immunity EN61000-6-4 radiation of interference
Temperature Range	storage -40° to +85°C (-40° to 185°F) operating -40° to +85°C (-40° to 185°F)
ENCLOSURE	
Housing Material	NORYL with glass-fibre reinforcement
Mounting	in-dash, with clips or springs
Connector	Terminal block 4, 8 or 13 way depending on selected options
MISCELLANEOUS	
Indicator increments	1/4
Day/Night operation	automatic – integrated light sensor
Front panel	backlit, colour coded for water and foam
Detectable substances	water, fire-smothering foam, gasoline, etc
SIZE AND WEIGHT	
W x H x D	36 x 72 x 68 mm with connector
Weight	0.1 kg

How to order (use characters in **bold** to create order code)

SET of master indicator small INS, conductive probe, sensor cable

Ordering code example:

R	T	S	S	-	O	4	W	T	-	O	5	R	H	L					
04 DISPLAY INCREM. 1/4				W: WATER F: FOAM		T: 1 WIRE C: CAN BUS				CABLE LENGTH, METERS (INCH) 05: 5 M (20") 10: 10 M (40") 15: 15 M (60")		OUT1 R: LOW LEVEL WARNING		OUT2 H: AUTOFILL HYST. xx/xx % R: ADD. OUTPUT		OUT LLD5 L: LLD5 DRIVER 5X1.8A GND OUTPUTS		IN1 NEGATIVE M: MUTE OUT1 (only CAN device)	

Remote Indicator - Small

Ordering code example:

CLOCKING CODE EXAMPLES													
R	I	S	-	O	4	W	T	O	-	R	H		
						04 DISPLAY INCREM. 1/4	W: WATER F: FOAM	T: 1 WIRE C: CAN BUS	LED BRIGHTNESS I: INSIDE O: OUTSIDE	OUT1 R: LOW LEVEL WARNING	OUT2 H: AUTOFILL HYST. xx/xx % R: ADD. OUTPUT	OUT LLD5 L: LLD5 DRIVER 5X1.8A GND OUTPUTS.	IN1 NEGATIVE M: MUTE OUT1 (only CAN device)

Master Indicator - Small

Ordering code example:

Pin Header - 13 Pins															
I	N	S	-	O	4	W	T	P	R	R	H	L	M		
04 DISPLAY INCREM. 1/4				W: WATER F: FOAM		T: 1 WIRE C: CAN BUS		LEVEL PROBE INPUT PR: CONDUCTIVE PROBE		OUT1 R: LOW LEVEL WARNING		OUT2 H: AUTOFILL HYST. xx/xx % R: ADD. OUTPUT		OUT LLD5 L: LLD5 DRIVER 5X1.8A GND OUTPUTS	IN1 NEGATIVE M: MUTE OUT1 (only CAN device)



EMITTER ELECTRONICS

Engineering, production and service
Tržaška cesta 65, SI-2000 Maribor, Slovenia, Europe

Phone +386 5 995 1 973
mobile +386 41 726 476

info1@emitter.org
www.emitter.org

