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# TANK LEVEL GAUGE

## INS-04/RIS-04/RTSS-04

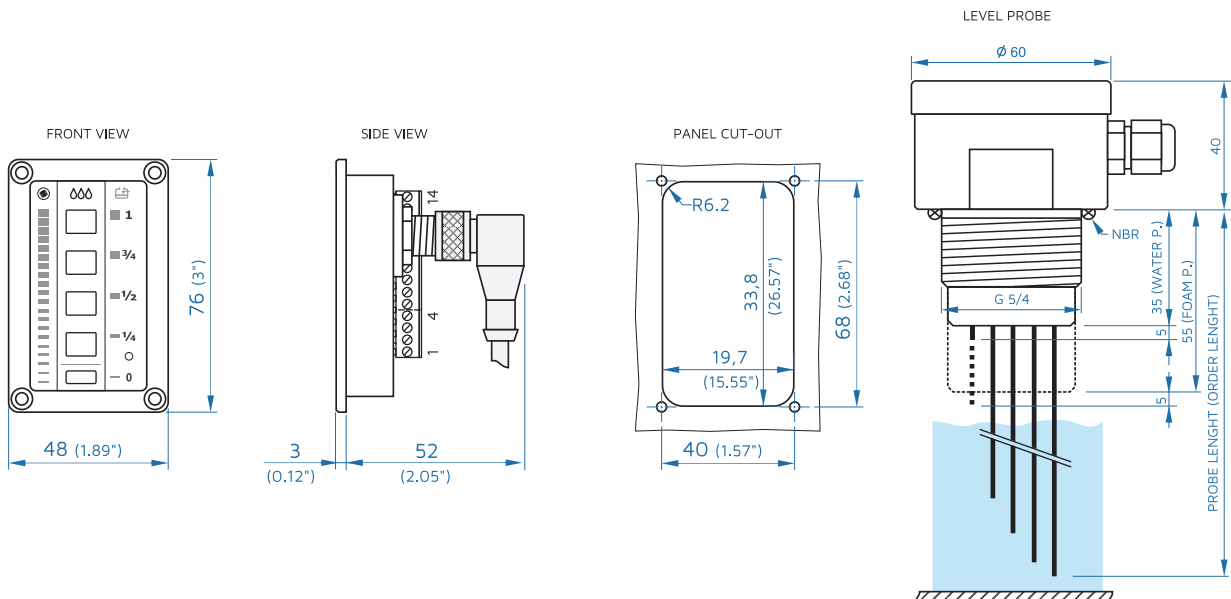


### Features and Benefits

- 1 **180° Viewing Angle**
- 2 **I/O Driver For Low Water Warning, Autofill-Hysteresis, Mute input, Etc.**
- 3 **CAN Bus Interface**
- 4 **Super Bright LEDs**
- 5 **Dimmable-Light Sensor, Backlit**
- 6 **Low Installation Depth**
- 7 **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 ultra-bright LEDs. The gauge operates based on the conductance of the measured liquid. The electrodes are placed at each quarter length of the probe.

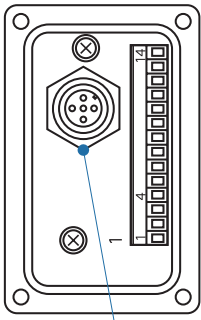
Optional I/O driver can be integrated for low level warning output, autofill-hysteresis output, mute input, etc.



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 (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

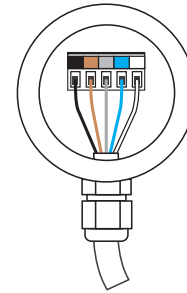


PROBE CONNECTION

### CONNECTION Terminal Block 4 or 14-way

PIN	DESCRIPTION
1	BATTERY + (*15")
2	BATTERY - / GND
3	CAN L
4	CAN H
5	NA
6	NA
7	NA
8	DIGITAL IN1
9	OUT1 HIGH SIDE 2 A
10	OUT2 HIGH SIDE 2 A
11	OUT3 HIGH SIDE 2 A
12	OUT4 HIGH SIDE 2 A
13	OUT5 LOW SIDE 0.5 A
14	OUT6 LOW SIDE 0.5 A

### PROBE CONNECTION



## Specifications

POWER	
Supply Voltage	8-32 V DC
Current	0.5 A maximum, no outputs active
Electrical Protection	overvoltage, transients, reverse polarity
INTERFACES	
CAN	1 x CAN
CAN termination	120 ohm
I/O	
Probe input	conductive probe with max. 5 rods
Digital Input	onfigurable active low/high levels 0..Ub with solder pad on PCB, protected
Digital Output	<i>*Only version with integrated I/O driver</i>
OUT1	positive switching (high-side), max. 2 A (Low water warning)
OUT2	positive switching (high-side), max. 2 A (Autofill-Hysteresis)
OUT3-OUT4	positive switching (high-side), max. 2 A
OUT5-OUT6	negative switching (low-side), max. 0.5 A
Loads	Inductive, capacitive, 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	aluminium
Mounting	in-dash, with 4 screws M3 or 3.5 mm (#8) tapping screws
Connector	terminal block 4 or 14-way depending of options selected, probe connector M12
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	48 x 76 x 26 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 cabl

Ordering code example:

<b>R</b>	<b>T</b>	<b>S</b>	<b>S</b>	-	<b>O</b>	<b>4</b>	<b>W</b>	-	<b>O</b>	<b>5</b>	<b>R</b>	<b>H</b>	<b>L</b>	<b>M</b>
04 DISPLAY INCREM. 1/4		W: WATER F: FOAM		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		OUT3 - OUT6 L: LLD5 DRIVER OUTPUTS		INPUT IN1 M: MUTE OUT1	

### Remote Indicator - Small

Ordering code example:

<b>R</b>	<b>I</b>	<b>S</b>	-	<b>O</b>	<b>4</b>	<b>W</b>	<b>O</b>	-	<b>R</b>	<b>H</b>	<b>L</b>	<b>M</b>	
04 DISPLAY INCREM. 1/4		W: WATER F: FOAM		LED BRIGHTNESS I: INSIDE O: OUTSIDE		OUT1 R: LOW LEVEL WARNING		OUT2 H: AUTOFILL HYST. xx/xx % R: ADD. OUTPUT		OUT3 - OUT6 L: LLD5 DRIVER OUTPUTS		INPUT IN1 M: MUTE OUT1	

### Master Indicator - Small

Ordering code example:

<b>I</b>	<b>N</b>	<b>S</b>	-	<b>O</b>	<b>4</b>	<b>W</b>	<b>P</b>	<b>R</b>	<b>R</b>	<b>H</b>	<b>L</b>	<b>M</b>		
04 DISPLAY INCREM. 1/4		W: WATER F: FOAM		LEVEL PROBE INPUT PR: CONDUCTIVE PROBE			OUT1 R: LOW LEVEL WARNING		OUT2 H: AUTOFILL HYST. xx/xx % R: ADD. OUTPUT		OUT3 - OUT6 L: LLD5 DRIVER OUTPUTS		INPUT IN1 M: MUTE OUT1	