

# TANK LEVEL GAUGES S

INS-04/RIS-04/RTSS-04



## KEY FEATURES

- + 180° Viewing Angle
- + I/O Driver For Low Water Warning, Autofill-Hysteresis, Mute input, Etc.
- + CAN Bus Interface
- + Super Bright LEDs
- + Ambient Light Sensor, Backlit
- + Low Installation Depth
- + 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.



## SPECIFICATIONS

### POWER

<b>Supply Voltage</b>	8-30 V DC
<b>Current</b>	0.5 A maximum, no outputs active
<b>Electrical Protection</b>	overvoltage, reverse polarity

### INTERFACES

<b>CAN</b>	1 x CAN, CAN termination 120 ohm DIP switch
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### I/O

<b>Probe input</b>	Conductive probe with max. 5 rods
<b>Digital Input IN1</b>	configurable active low/high levels 0..Ub with solder pad on PCB, protected
<b>IN2</b>	active low level, config. input
<b>Digital Output</b>	<i>*Only version with integrated I/O driver</i>
<b>OUT1</b>	positive switching (high-side), max. 2 A (Low water warning)
<b>OUT2</b>	positive switching (high-side), max. 2 A (Autofill-Hyst.)
<b>OUT3-OUT4</b>	positive switching (high-side), max. 2 A
<b>OUT5</b>	negative switching (low-side), max. 0.5 A
<b>Loads</b>	Inductive, capacitive, resistive

### PROBE-OEM

<b>Detection method</b>	conductive
<b>Probe length</b>	250-2000 mm
<b>Probe material</b>	rods in stainless steel 316 (1.4305)

### ENVIRONMENT

<b>IP Class (IEC529)</b>	front panel IP67, back IP20, probe IP67
<b>EMC Conformity</b>	EN61000-6-2 noise immunity EN61000-6-4 radiation of interference
<b>Temperature Range</b>	storage -40° to +85°C (-40° to 185°F) operating -40° to +85°C (-40° to 185°F)

### ENCLOSURE

<b>Housing Material</b>	aluminium
<b>Mounting</b>	in-dash, with 4 screws M3 or 3.5 mm (#8) tapping screws
<b>Connector</b>	terminal block 4 or 14-way depending of options selected, probe connector M12

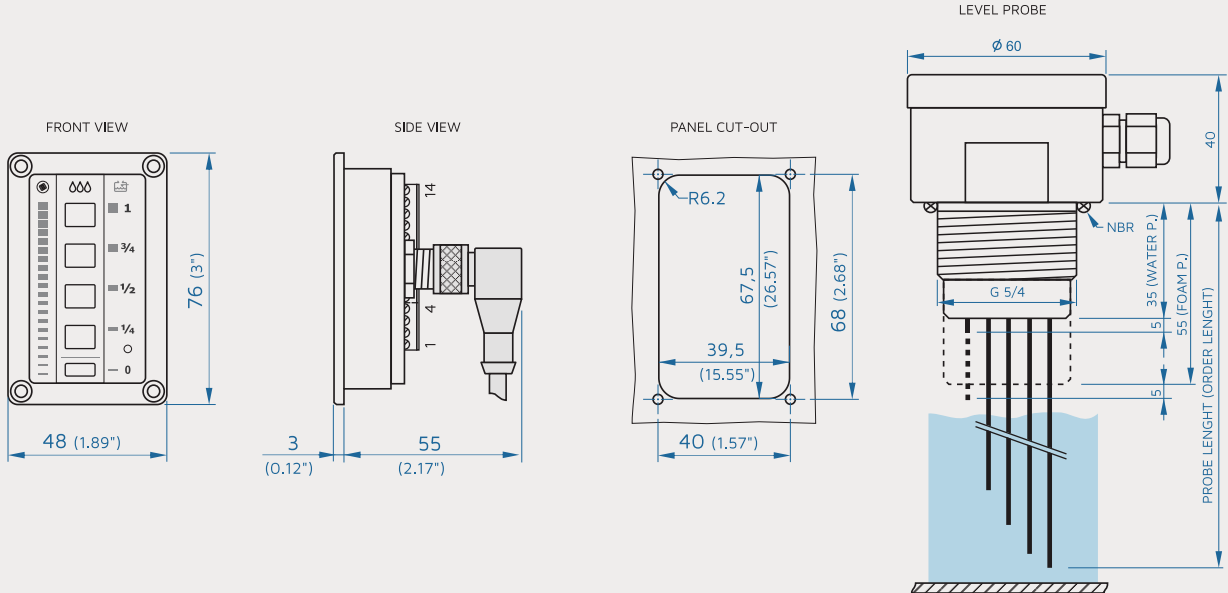
### MISCELLANEOUS

<b>Indicator increments</b>	1/4
<b>Day/Night operation</b>	automatic – integrated ambient light sensor
<b>Front panel</b>	backlit, colour coded for water and foam
<b>Detectable substances</b>	water, fire-smothering foam, gasoline, etc

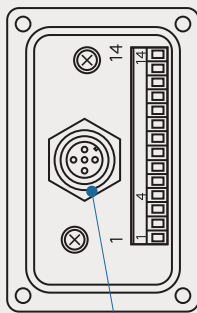
### SIZE & WEIGHT

<b>W x H x D</b>	48 x 76 x 26 mm with connector
<b>Weight</b>	0.10 kg

## DIMENSIONS



## CONNECTIONS

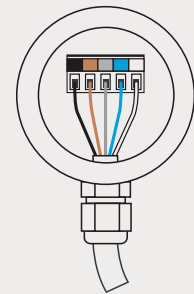


PROBE CONNECTION

### CONNECTION TERMINAL BLOCK 4 OR 14-WAY

PIN	Description / wire colour
1	BATTERY + ("15")
2	BATTERY - / GND
3	CAN L
4	CAN H
5	SENSOR [V]/[MA] VCC+
6	SENSOR [V]/[MA] SIGNAL
7	SENSOR [V] GND
8	DIGITAL IN1
9	OUT1 HIGH SIDE 2 A (LOW W/F)
10	OUT2 HIGH SIDE 2 A (HYST.)
11	OUT3 HIGH SIDE 2 A
12	OUT4 HIGH SIDE 2 A
13	OUT5 LOW SIDE 0.5 A
14	CONFIG/MUTE

### PROBE CONNECTION



## PRODUCT 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>-</b>	<b>0</b>	<b>4</b>	<b>W</b>	<b>-</b>	<b>0</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>-</b>	<b>0</b>	<b>4</b>	<b>W</b>	<b>-</b>	<b>R</b>	<b>H</b>	<b>M</b>
04 DISPLAY INCREM. 1/4		W: WATER F: FOAM		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>-</b>	<b>0</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