

## UGE-207-Connect, Universal Gauge Emulator

Simplified integration of 4-20 mA or Modbus instrumentation into Honeywell-Enraf BPM installations

Support for gauge emulation for up to a maximum of 6 gauges

Saving additional cabling costs by making use of present BPM fieldbus.

Remote commissioning and service capabilities

BPM fieldbus message monitoring and diagnostics

Easy commissioning

Compact dimensions

DIN-rail mounted

Based on Exalon Delft extensive communication know-how

### Ready for use in LPG applications

The UGE-207-Connect is a versatile Gauge Emulator that seamlessly connects 4-20 mA or Modbus instruments to the robust Honeywell-Enraf BPM fieldbus. Integration of the instrument data into the Honeywell-Enraf CIU Tank Gateway is greatly simplified by emulating the Honeywell-Enraf GPU protocol.

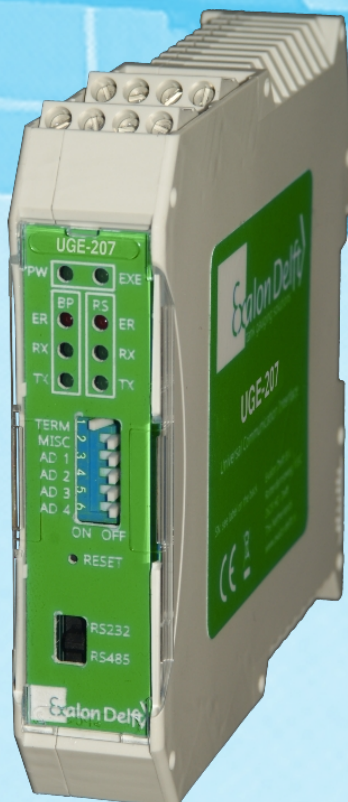
The UGE-207-Connect is specifically designed for applications involving LPG tanks, additive tanks and process tanks. It supports relevant tank data, including radar level, single spot average product and vapor temperatures, as well as product (P1) and vapor (P3) pressure transmitter measurements.

The UGE-207-Connect BASE license supports assigning a total of four Modbus data inputs to a maximum of four emulated gauges. The PLUS license extends to a total of 12 Modbus data inputs to a maximum of five emulated gauges and the PREMIUM license 20 Modbus data inputs to a maximum of six emulated gauges.

The UGE-207 features two ports: a BPM fieldbus port for connection to the CIU Tank Gateway and a RS232/RS485 Modbus RTU master port for connecting the Modbus instruments. The Modbus RTU port also allows integration of 4-20 mA analog input Modbus RTU modules into the solution, enabling connection of instruments with a 4-20 mA output.

The UGE-207 can be commissioned via the RS232/RS485 port or with a temporarily installed UCI-108 Universal Communication Interface.

Commissioning process is made easy by a smart configuration wizard. Additionally, it is possible to remotely set the key configuration items via the GPU protocol, e.g., through Honeywell-Enraf Engage.



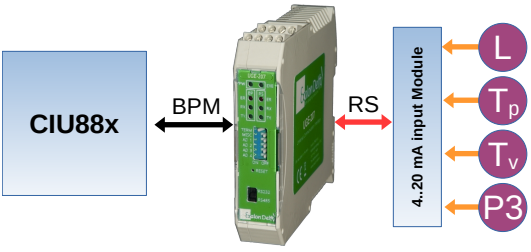
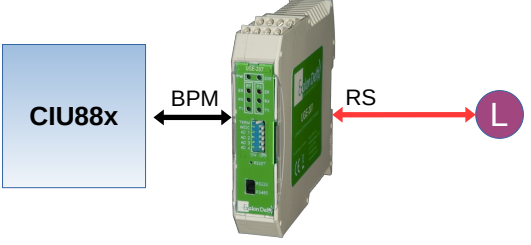
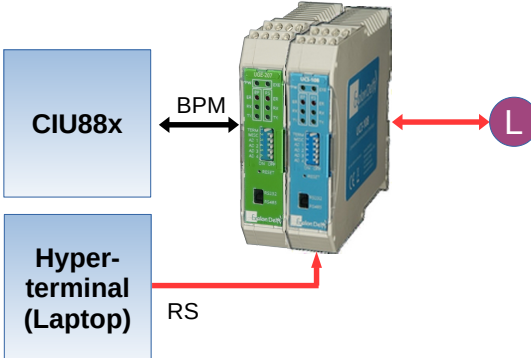
### Applications

- LPG bullet and spheric tanks
- Additive and process tanks
- Both new installation and revamping market

# Configurations and specifications

## Configurations

Thanks to the support of the Modbus RTU protocol, it is possible to create a fit for purpose and cost-effective solution. See below for examples of the most commonly used solutions.

	<p><b>UGE-207 with 4-20 mA instrumentation</b></p> <p>In this configuration a Modbus 4-20 mA analog input module is connected to the UGE-207. This enables to connect instruments with regular 4-20 mA analog output. Each emulated gauge enables support of level, single spot average product temperature, single spot vapor temperature and vapor pressure P3 measurements. Multiple Modbus RTU slave modules can be connected to expand connecting instruments up to a maximum of 6 emulated gauges.</p>
	<p><b>UGE-207 with Modbus RTU level gauges</b></p> <p>This configuration illustrates the connection of a level gauge with a Modbus RTU slave interface. Depending on the firmware version multiple level gauges can be connected. Additionally, it's possible to combine Modbus level gauge(s) with Modbus 4-20 mA analog input module(s) for connecting other 4-20 mA instruments.</p>
	<p><b>Commissioning UGE-207 with UCI-108 in multi node</b></p> <p>The UGE-207 is commissioned by means of an ASCII terminal program running on a laptop or PC connected to the RS232/485 port. In operational state however the RS232/485 port serves as Modbus port to the instruments. To prevent disconnecting/connecting the Modbus RTUs for commissioning the UGE-207 can be easily expanded with an addition commissioning/diagnose port, by incorporating a UCI-108 Universal Communication Interface in a multi-node setup.</p>

## Specifications

### Gauge Emulation

<p>Number of emulated gauges</p>	<p>BASE: a total of 4 Modbus data inputs assignable to a maximum of 4 emulated gauges          PLUS: a total of 12 Modbus data inputs assignable to a maximum of 5 emulated gauges          PREMIUM: a total of 20 Modbus data inputs assignable to a maximum of 6 emulated gauges</p>
<p>Available GPU data</p>	<p>Gauge status          Product level          Product level high/low alarm limits          Average product temperature (single spot)          Average vapor temperature (single spot)          Product pressure P1          Vapor pressure P3          Observed Density          Unit dimensions (read-only)</p>
<p>Supported dimensions</p>	<p>The unit dimensions are entered during commissioning          Level: m, ft, in          Temperature: °C, °F          Density: kg/m<sup>3</sup>, lbs/ft<sup>3</sup>          Pressure: Pa, kPa, psi</p>

## Mechanical

Dimensions	110 x 25 x 110 mm (h x w x d)
Weight	150 g

## Environmental

Housing	DIN-rail mountable
DIN-rail	EN-IEC60715, mounting rail 35x7,5 mm
Protection class	IP20
Operating temperature	-20 °C ... +60 °C
Storage temperature	-40 °C ... +85 °C
Relative humidity	20 to 95%

## Applied safety standards

EMC standards	EU Directives
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## UGE-207 generic

Power supply	24 Vdc +/- 5%, max. 80 mA
Switches	Dip switches: terminal/operational, miscellaneous, node address Push button: reset
Intercommunication bus for multi node	RS485 (bus address selected by dip switch)
Number of devices in multi node	Maximum 2 (one UGE-207 + one UCI-108 for commissioning)
Commissioning/Service	Via terminal mode by RS232 port (115k2 kbit) Available: Configuration, statistics, BPM fieldbus analyser
LED indicators	Power on/off Operational status BPM port: communication quality, RX, TX RS port: communication quality, RX, TX

## BPM fieldbus communication

Serial connection	Galvanic isolated by transformer with ground shield Full galvanic isolation from ground, 1500Vac Lightning protection
Physical layer	Serial Bi-Phase Mark modulated, half duplex, on screw terminals
Protocol	Standard Enraf fieldbus GPU/Flexconn protocol
Baudrate	1200 / 2400 / 4800 Baud
Fieldbus wiring	Shielded twisted pair, Rmax 200Ω per line, Cmax=1 μF
Maximum cable length	10 km, depending on cable characteristics
Maximum number of field devices	15, depending on cable specifications and length
Signal level	max. 7 Vpp

## RS232/RS485 communication

Serial connection	Galvanic isolated by opto isolation Full galvanic isolation, 1500 Vac
Physical layer	RS232C, 3 wire <15 m, on screw terminals RS485, 3 wire, 1000 m (with additional lightning protecting device), on screw terminals
Protocol	<b>During operation</b> BPM host port communication: GPU protocol RS field port communication: Modbus RTU Master Modbus register types: uint, int, float (32 bit) <b>During commissioning</b> RS232 field port: ASCII terminal protocol (in terminal mode)
Baudrate	1200 / 2400 / 4800 / 9600 / 19200 / 38400 / 57600 / 115200 Baud
Handshake	None

## Maintenance

Maintenance is not needed throughout the lifetime of the product, except cleaning and inspection of the product

## Installation

It is requested to read the installation manual before installation.

This installation manual is available with Exalon Delft.

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## *Made in the Netherlands*



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