DFV101 Combined Register and Level Gauge

The DFV100 series is the latest advancement in Liquip's range of electronics, featuring as a stand alone register or level gauge CPU.

The DFV101 is a state of the art electronic meter register and level gauging monitor in one compact housing.

The DFV101 allows for increased operational efficiency through a lightweight design and by combining two units into one, users will be able to achieve the benefits of both units by ordering a single unit.

The DFV101 is approved for Zone 1 (IECEx, ATEX & UL) truck mounted or fixed site product transfer applications.

Key Features

Common to all potted DFV units

- Weights & Measures Approved: NMO UK, NMI AUS, W&M NZ, MID Europe, Measurement Canada & NTEP USA. (EU, Canada & USA = Register function only).
- Durable Aluminium housing with hinged door to allow easy access to internal connections.
- Large display to easily view multiple information simultaneously.
- RS232 and CAN communication.
- Intuitive set up and programming.
- Electronic calibration.
- Non-linearity correction.
- Non volatile memory for storing set parameters.
- Operates on 12 or 24 volt installations.
- Backlit display for easy viewing in low light.
- Piezoelectric buttons for reliability.
- Connection to a ticket printer or a third party fuel management system.
- Can be connected to a large digit display
- Micro SD card for easy software upgrades.
- Preset functionality / batch control.
- Solenoid outputs are voltage free and

Register

- can perform a 2 stage ramp up and ramp down of the fluid flow.
- No flow timer.
- One calibration point with Weights & Measures sealable captive fastener.
- Compatible with most flow meters on the market.
- Pulse output can be programed as optional additional fourth relay.
- Functionally backwards compatible with Liquip EMH registers.
- Flowrate displayed on main screen along with volume during delivery.
- Future expansion and modularity available.

Diptronic

- Automatic level gauging updated in real time keeps users off the top of the tank.
- Same menu system as DIP200 for ease of operation with operators already familiar with Liquip level gauging technology.
- CAN output for rapid communication with external device.
- Can read up to 6 probes/compartments.
- Can be used to provide a sealed parcel solution.
- DFV103 comes with built in power filter negating the need for external power filter.
- Can be connected to slave unit to read an additional 6 probes/compartments.
- Volume shown in 1L increments.
- ±1mm accuracy with no moving parts for minimal maintenance.
- Compatible with E 705 Diptronic probes (pots).
- Enables temperature compensated deliveries.
- Enables split deliveries to maximise fleet efficiency.

Safety Approvals (All units)

IECEx

- Safety Approved for use in Zone 1 IECEx ExTC 17.000X
  Ex e ib mb [ia] IIA T4 Gb IP66
  (Ta = -20°C to +60°C)

ATEX

- Safety Approved for use in Zone 1 DEMKO 14 ATEX 1407X
  Ex e ib mb [ia Ga] IIA T4 Gb IP66
  (Ta= -20°C to +60°C)
  CE 0518 ⟨Ex⟩ II 2 (1) G

UL

- UL Safety Approved - USA & Canada for use in Class 1 Zone 1.
  CI. I, Zn1, AEx e ib mb [ia Ga] IIA T4 Gb
  Ex e ib m [ia Ga] IIA T4 Gb
  Ta= -20°C to +60°C   Um = 32V

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Associated Equipment

- ERP200 - Remote Pulser
- 4155 - Temperature Probe
- DFV100 - DFV Register
- DFV103 - DFV Level Gauge CPU

- DIP130 - Level Gauge Probe
- DIP150 - Level Gauge Probe - Low Profile
- Expansion Modules - Contact Liquip
- Cold climate register - Contact Liquip

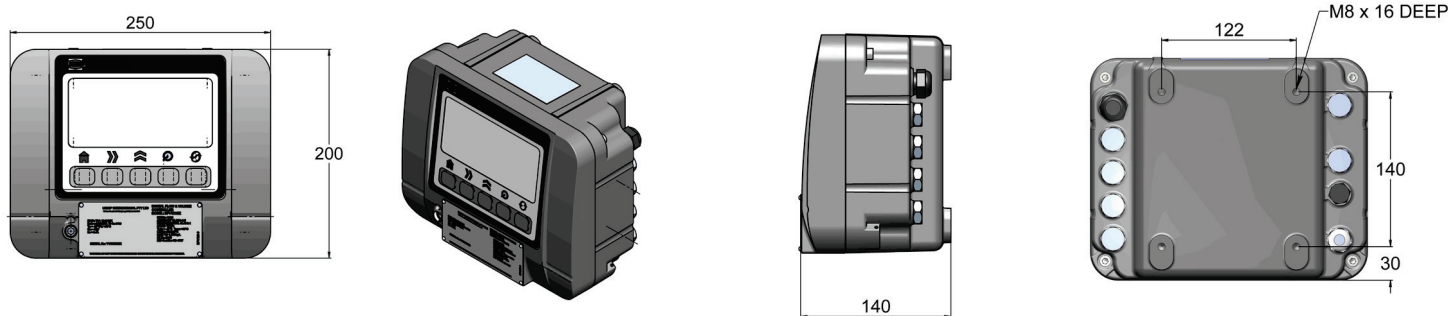| Size	Approx, 250 x 200 x 140mm
Displays	1 line x 14 characters 14 mm high and 4 lines x 24 characters 8 mm high
Power Input	9 to 32Vdc (safety approved) or 9 to 45V (operational) @ 250mA polarity protected. In-line fuse (rated 3A, antisurge) is strongly recommended
Operating Temperature	-20°C to +60°C (safety approved)
Temperature Correction	-40 to +60°C for all petroleum products Extended ranges available according to local regulations
Temperature Probe	Pt100 class A, 3 wires, Liquip P/N 4155
Ingress Protection	IP66
Product Density	0.653 - 1.075kg/L (petroleum products) - For others contact Liquip
Weight	Approx. 6kg
Communication	Two RS232C ports to be used to communicate with a PC or other serial device such as a modem or printer. One CAN port. Compatible with Epson CTM-290 or TM-295, Blaster Printer.
Touch PC	Commands that can be interrogated include resetting the meter and requesting the current delivery quantity. See software section for detail.
Pulse Input	Will accept 3-channel pulses of 60° phase shifted, from ERP200 pulser, dual (quadrature) or single pulse (reed or open-collector) from third-party pulsers. Third party pulsers may not be NMI approved
Pulse Output	Open drain, active-low output, signal calibrated to 10 pulses/litre, where the pulse frequency can be set up to either 400Hz or 2kHz max. (with fixed pulse duration 1.25 ms or 0.25 ms respectively).
External Reset	This is an input/output signal.
Relay Outputs	Up to 4 Relay Outputs. Current sink, 3A max. Solenoid to be connected between this output and the positive of the power supply. Additional in-line fuse (3A, antisurge) is strongly recommended.
Program Memory	microSD card

Mounting Instructions

The DFV101 can be either remote mounted or mounted to a meter using an adaptor bracket.

Adaptor Bracket: Front mount to various meters

When direct mounting to a meter is unavoidable

DFV100-23 (Suits the following meters)

- LC - M5, M7, M10, M15, M25, M30, M40, M60

- SAMPI - M5, M7, M15, M30

Adaptor Bracket: Top mount to various meters

DFV100-18 - Top mount bracket to suit meters that use the OE standard 4 bolt register mount.

For mounting to other meters please contact Liquip