



# DFL

## Fuel Flow Meters

for

## Fuel Consumption Measurement in Mobile Vehicle Instrumentation

- Very simple installation
- High measurement resolution
- Suitable for all current fuel supply systems, with or without return flow
- Viton® hoses and sealings
- Gasoline, diesel, bio-diesel and alcohol fuel
- Passenger car and trucks
- Power supply via 12 V on-board electrical system
- Max. flow rate 150 l/h
- Integrated mechanical pressure regulator (DFL3x-5bar)
- Powerful pump for fuel flow up to 150 l/h for device with heat exchanger
- Leakage-protected quick couplings
- Varying quick couplings for fuel input and output (filter)
- Electronics with CAN, analog and digital outputs for consumption and flow rate
- USB and RS232 connection
- Indicator for “wrong flow direction”

### DFL Processor

Configurable outputs: digital, analog, CAN output

Projected: retrofittable with hardware upgrade:

- Printout via analog and CAN output
- Output of feed and return temperature via analog and CAN output
- Digital transmission of measurement data to the electronics (less susceptible to errors)
- Storage of sensor-specific data in the sensor (replaceable electronics without re-calibration )

Retrofittable with firmware update (estimated to be available 09/2008):

- Total consumption since Start Box and Start Trigger
- Output of l/100km/h and km/l via freely configurable speed input (BNC)
- Linearization of the characteristic curve with 8 data points
- Trigger inputs for light barrier (e.g., for per-lap consumption measurement)
- Trigger inputs for brake switch (Coast-down, overrun fuel cutoff control)



DFL 1x-5bar



DFL-WTx-5bar



DFL 3x-5bar



DFL Processor

#### Article no.:

DFL 1x-5bar	15636
DFL-WTx-5bar	15637
DFL-3x-5bar	15615
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# Typical Technical Data



**DFL1x-5bar**

**DFL-WTx-5bar**

**DFL3x-5bar**

Dimensions	183 x 106 x 94 mm	247 x 193 x 119 mm	350 x 195 x 125 mm
Weight	2.0 kg	6.0 kg	approx. 9 kg
Protection class	IP54	IP54	IP54
Preferred mounting	any	any	any
Temperatur range	-20° C ... 70° C	-20° C ... 70° C	-20° C ... 70° C
Relative humidity	80%	80%	80%
Media	Diesel, gasoline bio diesel, alcohol	Diesel, gasoline bio diesel, alcohol	Diesel, gasoline bio diesel, alcohol
Measuring range	0.5 ... 150 l/h	max. 150 l/h	1.5 ... 150 l/h
Measuring accuracy	±0.5% of reading	-----	±0.5% of reading
Reproducibility	±0.2%	-----	±0.2%
Operating pressure	max. 5 bar	max. 5 bar	max. 5 bar built-in pressure regulator
Pressure drop	0 ... 0.5 bar	-----	0 ... 0.5 bar
Operating voltage	10 ... 28 V DC	10 ... 15 V DC	10 ... 15 V DC
Power consumption	0.2 A	max. 8 A	max 8 A
Outputs:			
Digital1 (consumpt. actual)	500 ...10000 pulses/cm <sup>3</sup>		500 ...10000 pulses/cm <sup>3</sup>
Digital2 (flow rate)	1 ... 10000 Hz/l/h		1 ... 10000 Hz/l/h
Digital for connection			
Stand-Alone Display	proportional to Digital1		proportional to Digital1
Analog (flow rate)	0 ... 10 V (10 ... 1000 mV/l/h)		0 ... 10 V (10 ... 1000 mV/l/h)
CAN	actual consumption in liter flow rate in liter/hour		actual consumption in liter flow rate in liter/hour

For USA: All channels with conversion in gallons

Art. no. 15636

Art. no. 15637

Art. no. 15615

Options:	DFL-1x-5bar	DFL-WTx-5bar	DFL3x-5bar
1 Temp.-Sensor	Art. no. 12922		Art. no. 15792
2 Temp.-Sensor	Art. no. 13373		Art. no. 15791
Pressure Sensor	Art. no. 12923		Art. no. 15807