GENERAL PURPOSE INDICATOR

LOOP POWERED WITH VERY LARGE DIGITS

FLUIDWELL
Accurate Liquid Management

D-Series advantages

- Unique, robust IP66, IP67 (NEMA4X) class panel mount enclosure made of die cast aluminum, allowing even **big jets** of water and **total immersion**.
- Programming can be done by your own crew with the exact same, plain and sensible menu-driven structure like the F-Series, saving cost and irritation. **Know one, know them all**!

Features

- Universal input loop powered indicator.
- Very large 26mm (1") high digits.
- Displays the actual value, measuring unit and loop current.
- Selectable on-screen engineering units: %, PPM, meter, m, cm, mm, ft, sqft, ML, L, NL, M³, nM³, GAL, USGAL, IGAL, bbl, CUFT, mg, g, kg, ton, lb, psi, psig, mbar, bar, barg, °C, °F, K, P, RPM, K, KPA, pH, mV, /sec, /min, /hr, /day or no unit (others on request).
- Piegraph indication: ten segments.
- LED backlight option.
- Operational temperature -40°C to +80°C (-40°F to 176°F).

Signal input

- 4 - 20mA.

Power supply

- Input loop powered.

Applications

- The D-Series is a DIN-sized display and the **better alternative** for your existing, not waterproof, panel mount indicators in extreme weather outdoor applications or e.g. in food industries where working environments are often cleaned with powerful water jets.
- The D090 takes operating energy from an input current (2-wire 4 - 20mA) and **reduces installation cost**. It accepts a wide range of process instruments, including flow (linear or square root), level, pressure and temperature transmitters. All these process parameters can be displayed in their own engineering units. Alternative field mounted model: F090.

General information

Introduction

The D090 is a local, panel mount indicator to display the actual process value, range and loop current. The measuring unit to be displayed is simply selected through an alfa-numerical configuration menu. No adhesive labels have to be put on the outside of the enclosure: a weather proof and user friendly solution! The configuration of Span, offset and number of decimals is done through software functions, without any sensitive dip-switches or trimmers.

Display

The display has 5½ large 26mm (1") digits to show the main process information. At the bottom line, smaller 8mm (0.31") alfanumerical digits are available to display the measuring unit and additional messages in case of an alarm; range error e.g. With the piegraph, an actual range indication is offered in a single glance. If desired, additional information can be presented after pressing the select key, like the actual loop current and the 0% and 100% process value. The display is a transflective type, which means that a high contrast reading is guaranteed, even in full sunlight. The D090 has a smart display update function incorporated. Related to the lower temperatures, the update frequency of the LCD is tuned automatically to achieve a readable display even at -40°C / -40°F.

Backlight

For those applications where readabillity during day and night might is an issue, a bi-color back-light is available. The background color can be set to green or amber and the intensity can be adjusted in the configuration menu.

Configuration

All configuration settings are accessed via a simple operator menu which can be pass-code protected. Each setting is clearly indicated with an alphanumerical description, which avoids confusing abbreviations and baffling codes. Once familiar with one D-series product, you will be able to program **all models in all series** without a manual. All settings are safely stored in EEPROM memory in the event of sudden power failure.

Signal input

The D090 does accept 4 - 20mA input signals only. The input signal type can be tuned and set by the user in the configuration menu without having to adjust any sensitive mechanical dip-switches, jumpers or trimmers.
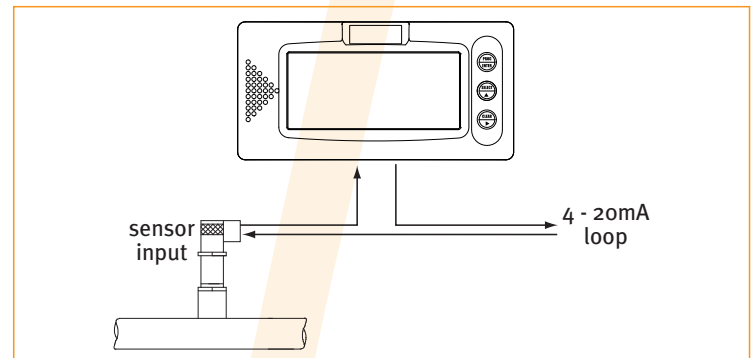
Power supply

The D090 is designed to be a loop powered indicator, which means it takes its operating energy from an input current (2-wire 4 - 20mA).
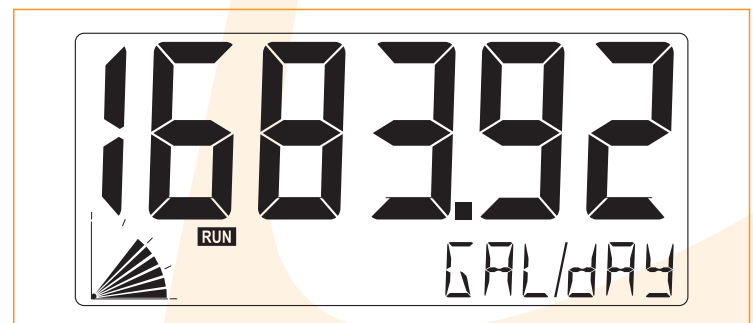
Enclosures

The D090 is supplied in a unique, robust IP66, IP67 (NEMA4X) class panel mount enclosure made of die cast aluminum, based on a popular DIN sized enclosure with a 144 x 72mm front. The enclosure withstands powerful water jets and even total immersion. The maximum thickness of the panel is 6mm (1/4"). The D-Series is the better alternative for your existing, not waterproof, panel mounted indicators.
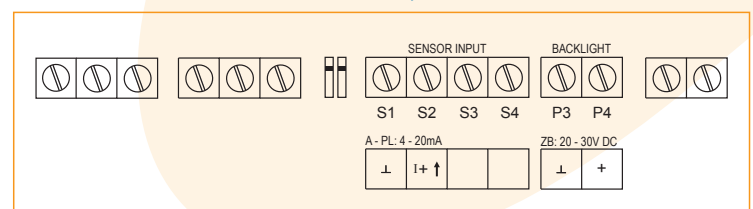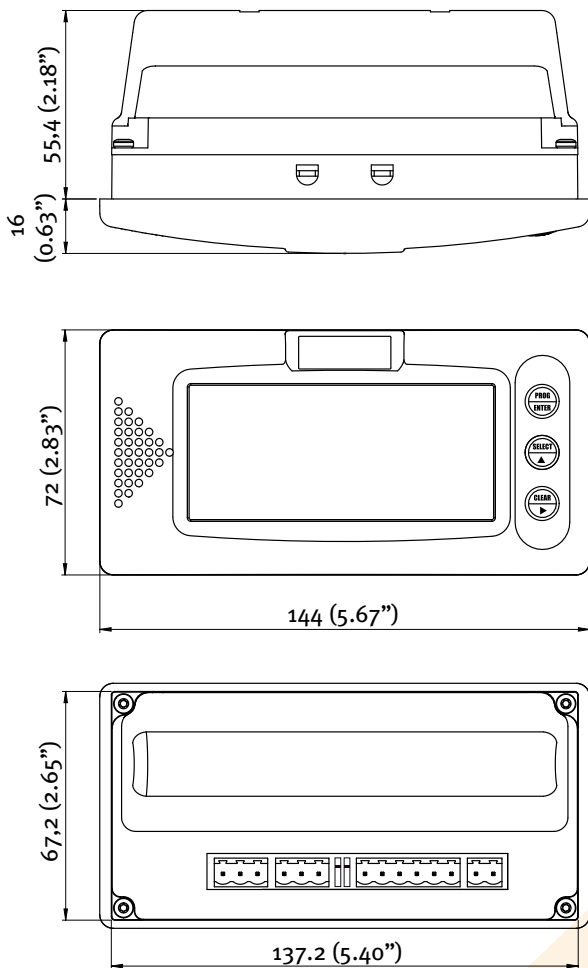
Overview application D090

Display example D090
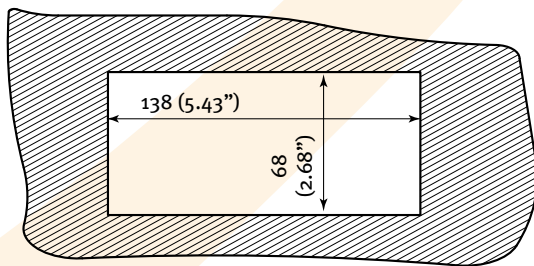

Terminal connections D090

Dimensions enclosure

Dimensions according DIN 43700 / IEC 61554

Dimensions panel cut-out

Maximum panel thickness: 6mm (¹/₄")

Technical specification

General

Display	
Type	High intensity reflective numeric and alphanumeric LCD, UV-resistant.
Dimensions	90 x 40mm (3.5 " x 1.6").
Digits	5¹/₂ very large 26mm (1") and eleven 8mm (0.31") digits. Various symbols and measuring units.
Piegraph	10 segment range indication in relation to its measuring range 0 - 100%
Option ZB	Transflective LCD with bi-color LED-backlight; green / amber. Intensitiy and color can be adjusted in the configuration menu.

Piegraph	
Digits	10 segments.
Relation	To the min. and max. input signal (0 - 100%).

Operating temperature	
Standard unit	-40°C to +80°C (-40°F to +176°F).

Power requirements	
Type PL	Input loop powered from sensor signal 4 - 20mA
Type ZB	For backlight 20 - 30V DC. Power consumption max. 1 Watt.

Data protection	
Type	EEPROM backup of all settings. Data retention at least 10 years.
Pass-code	Configuration settings can be pass-code protected.

Environment	
Electromagnetic compatibility	Compliant ref: EN 61326 (1997), EN 61010-1 (1993).

Casing

General	
Window	Polycarbonate window.
Sealing	Silicone.
Control keys	Three industrial micro-switch keys. UV-resistant silicone keypad.

Panel mount enclosure	
Dimensions	144 x 72 x 71.4mm (5.67" x 2.83" x 2.81") - W x H x D according DIN 43700 / IEC 61554.
Panel cut-out	138 x 68mm (5.43" x 2.68") L x H.
Material	Die-cast aluminum front panel + GRP back enclosure
Protection	IP66, IP67 (NEMA 4X).
Weight	325 gr.
Panel thickness	Max. 6mm (¹/₄").

Signal input

Sensor	
Type A	4 - 20mA. Analog input signal can be scaled to any desired range within 4 - 20mA.
Accuracy	Resolution: 16 bit. Error < 0.01mA / ± 0.05% FS. Low level cut-off programmable.
Span	0.00001 / 199,999 with variable decimal position.
Offset	-99,999 / +199,999 units.
Update time	Four times per second.
Voltage drop	Max. 2.6V DC @ 20mA.
Relationship	Linear and square root calculation.

Operational

Operator functions	
Displayed functions	• Top line: main display value. • Bottom line: measuring unit and messages. • Piegraph: 10 segments related to input signal. • Actual sensor input value in mA. • Displayed value at 0% of the input signal. • Displayed value at 100% of the input signal.

displayed information	
Digits	5¹/₂ digits (height 26mm / 1").
Units	m - mL - L- nL - M³ - nM³ - mg - g - kg - ton - gal - sgal - igal - lb - bbl - cf - scf - p - rev - °C - °F - °K - % - mm - cm - mtr - inch - ft - mmwk - mmwc - cmwk - cmwc - mwk - mwc - inwc - ftwc - mbar - bar - psi - pH - mV - no unit.
Time units	/sec - /min - /hr - /day - no unit.
Decimals	0 - 1 - 2 - 3 - 4 or 5.

Ordering information

Standard configuration: D090-A-HB-PL-ZX.

ordering information:	D090	-A	-HB	-PL	-Z _
Sensor input signal					
A (0)4 - 20mA input.					
Panel mount enclosure - IP66, IP67 (NEMA4X)					
HB Aluminum DIN 43700 / IEC 61554 front panel.					
Power supply					
PL Input loop powered from sensor signal 4 - 20mA.					
Other options					
ZB Backlight.					
ZX No options.					

The bold marked text contains the standard configuration.