

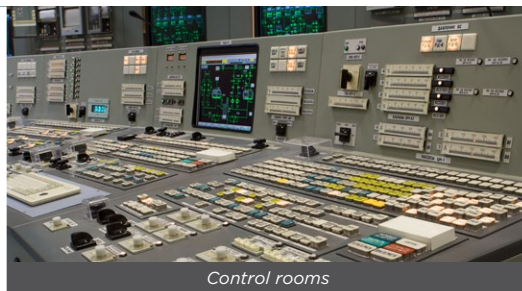
Your success counts

## Pressure Monitor

with one high / low alarm output.



Application examples: Marine applications



Control rooms



Red flashing LED backlight in case of a pressure alarm.

The D-Series is a front panel mount indicator, controller and monitoring system for measurement applications in industrial environments. It is the robust alternative for your existing, not waterproof, panel meters.

### Advantages

- Unique, robust IP66, IP67 (NEMA Type4X) panel mount front enclosure made of die cast aluminum, allowing even big jets of water and total immersion.
- Intuitive "Know one, know them all!" configuration menu, saving time, cost and aggravation.
- Resistant to harsh weather conditions: rain, snow, salty atmospheres.
- Only a few inches depth clearance for smaller, low cost panels and panel doors.

### Features

- Displays actual pressure and alarm values.
- Two alarm values can be entered: low and high pressure alarm.
- Large 17mm (0.67") digits.
- Red flashing LED backlight in case of a pressure alarm.
- LED backlight option.
- Selectable on-screen engineering units: mBar - Bar - PSI.
- Ability to process (0)4-20mA or 0-10V DC signals.
- One free configurable alarm output, available as passive signal, active signal or a robust, highly isolated (NO/NC) relay.
- Power requirements: Input loop powered, battery powered or 8 - 30V DC, 24V AC and 115 - 230V AC.
- Sensor supply: 8.2 / 12 / 24V DC.
- Auto backup of all settings.
- Ambient temperature -40°C up to +80°C (-40°F up to 176°F).

## Introduction

The D053 is a versatile, panel mount pressure indicator with continuous pressure monitoring feature. It offers the facility to set one low pressure and one high pressure alarm value. If desired, an ignore function can be set up to allow for an incorrect pressure for a certain period of time.

## Configuration

All configuration settings are accessed via a simple operator menu which can be password protected. Each setting is clearly indicated with an alphanumerical description, which avoids confusing abbreviations. 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.

## Display

The display has large 17mm (0.67") and 8mm (0.31") digits which displays the pressure, measuring unit and alarm values. The display is a transfective type, which means that a high contrast reading is guaranteed, even in full sunlight. The D053 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.

## Alarm output

One alarm output is available to transmit the pressure alarm. It can be set to switch for a low, high or both alarms! The output signal can be a passive NPN, active PNP or a robust, highly isolated electro-mechanical relay (NO/NC).



## Backlight

The white backlight in combination with the D053 offers a unique feature: in case of a pressure alarm, the backlight can be set to be red or flashing red. The intensity can be adjusted in the configuration menu.



All info at a glance



Easy to install



Easy to program



Know one know them all!



Reliable



User-friendly

## Overview application D053

The D-Series is a DIN-sized display and the better alternative for your existing, not waterproof, front 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 D053 fits in applications where continuous pressure measurement and monitoring is important.

Alternative basic model: D050 or the F-Series pressure indicators.



## Signal input

The D053 does accept (0)4 - 20mA and 0 - 10V input signals from any type of pressure measurement device. The input signal type can be selected by the user in the configuration menu without having to adjust any sensitive mechanical dip-switches, jumpers or trimmers. Also a 4 - 20mA input loop powered model is available.

## Power requirements

The basic power supply for the D053 is 8 - 30V DC. Several other power supplies are possible: With the 24V AC/DC and 115 - 230V AC power supplies, an 8.2 / 12 / 24V DC sensor supply is offered. For analog sensors, a 4 - 20mA input loop powered version is available. Finally we offer a long life lithium battery with a life expectancy that will last up to five years.



Waterproof IP66 / 67 (Type4X)

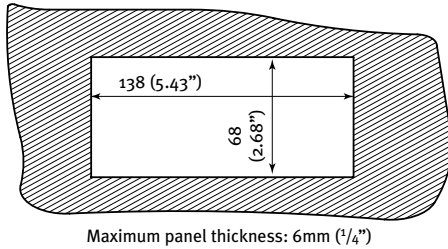


Only a few inches depth clearance

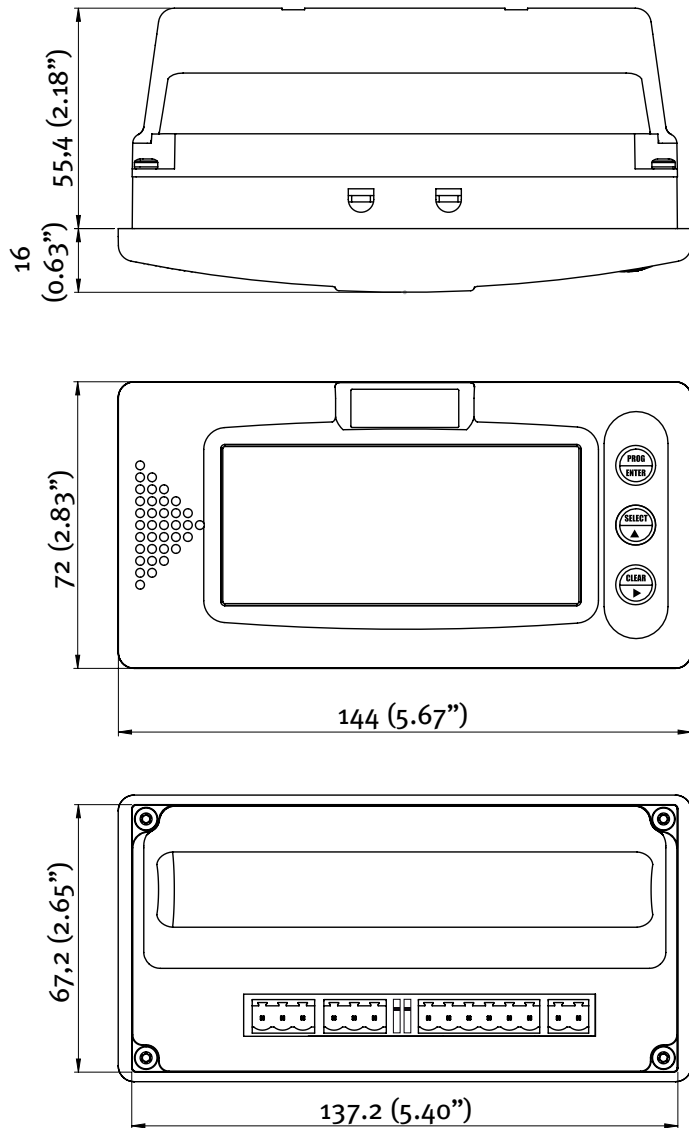
## Enclosures

The D053 is supplied in a unique, robust IP66, IP67 (NEMA Type4X) class panel mount front enclosure made of die cast aluminum, based on a popular DIN sized enclosure of 144 x 72mm. The front 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, front panel mounted indicators.

## Panel cut out

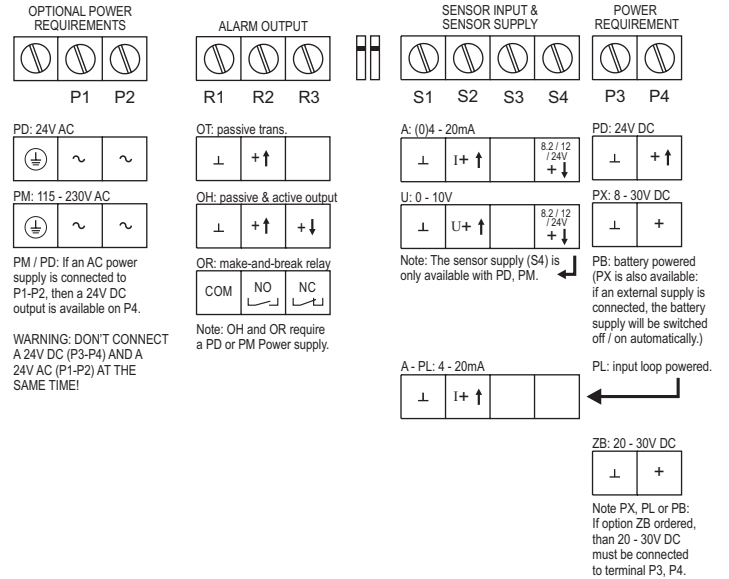


## Dimensions enclosure



Dimensions according DIN 43700 / IEC 61554

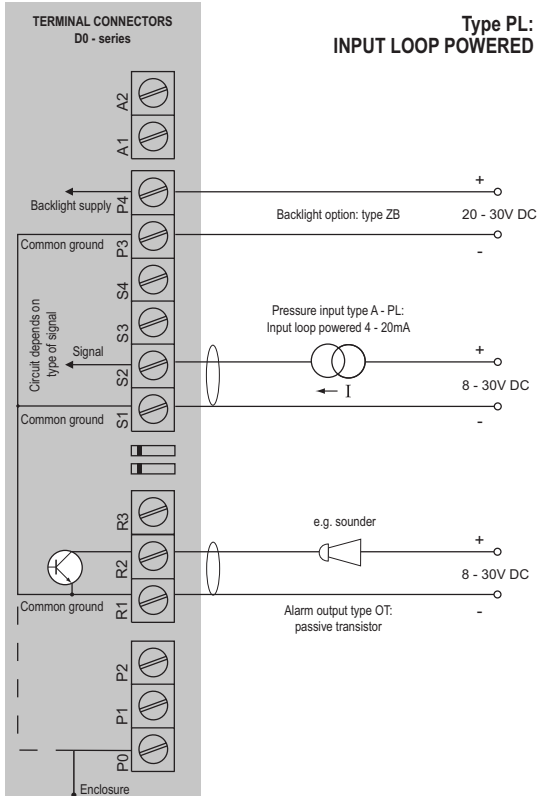
## Terminal connections D053



## Display example - 90 x 40mm (3.5" x 1.6")

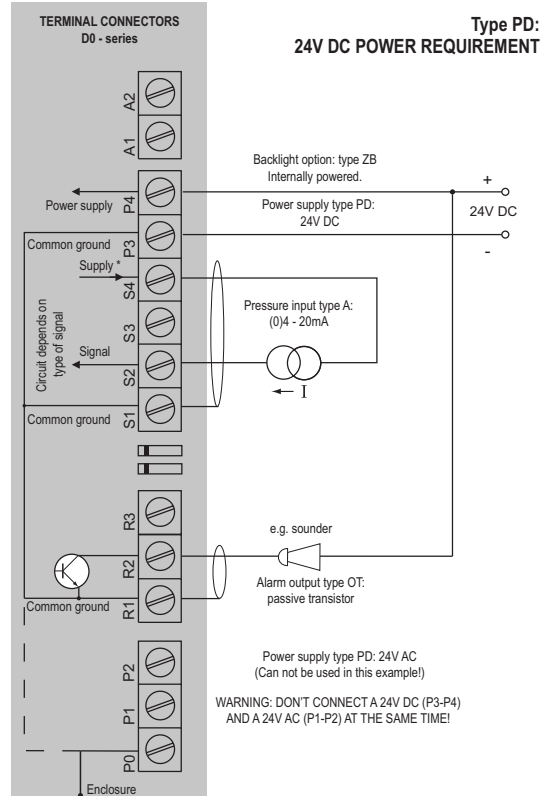


Configuration example D053-A-OT-PL-XX-ZB



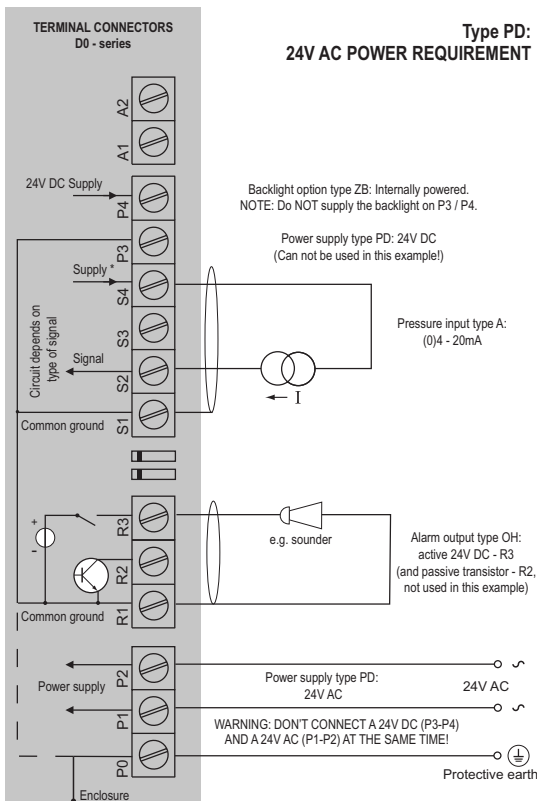
Sensor supply: sensor is externally powered.

Configuration example D053-A-OT-PD-XX-ZB



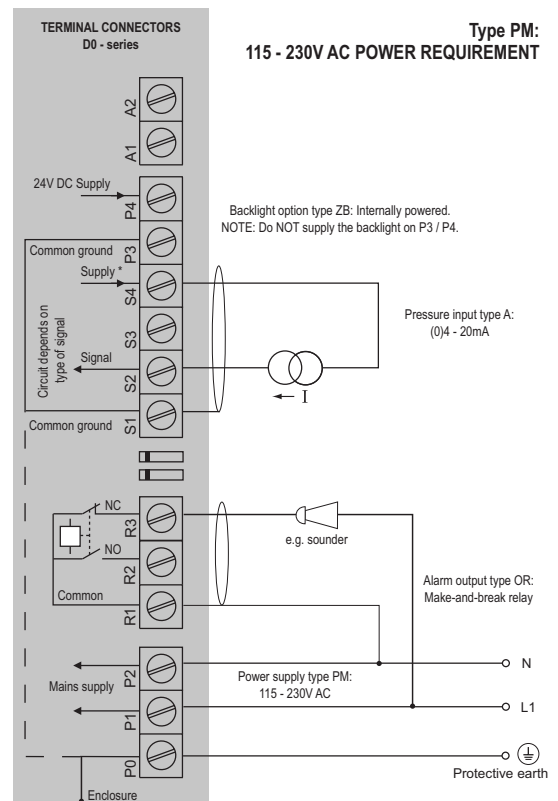
\* Sensor supply voltage for analog sensor type A / U:  
Terminal S4: 8.2 / 12 / 24V DC.

Configuration example D053-A-OH-PD-XX-ZB



\* Sensor supply voltage for analog sensor type A / U:  
Terminal S4: 8.2 / 12 / 24V DC.

Configuration example D053-A-OR-PM-XX-ZB



\* Sensor supply voltage for analog sensor type A / U:  
Terminal S4: 8.2 / 12 / 24V DC.

## Display

|                     |   |
|---------------------|---|
| <b>Type</b>         | High intensity reflective numeric and alphanumeric LCD, UV-resistant.   |
| <b>Dimensions</b>   | 90 x 40mm (3.5" x 1.6").  |
| <b>Digits</b>       | Seven 17mm (0.67") and eleven 8mm (0.31") digits. Various symbols and measuring units.  |
| <b>Refresh rate</b> | User definable: fast, 1sec, 3sec, 15sec, 30sec, off.  |
| <b>Option ZB</b>    | Transflective LCD with white LED-backlight. Red (flashing) backlight during alarm conditions. Intensity and alarm response can be adjusted in the configuration menu. |

## Ambient temperature

|                   |                                   |
|-------------------|-----------------------------------|
| <b>Safe areas</b> | -40°C to +80°C (-40°F to +176°F). |
|-------------------|-----------------------------------|

## Power requirements

|                |  |
|----------------|--|
| <b>Type PB</b> | Long life Lithium battery - life-time depends upon settings and configuration - up to 5 years. (requires PL or PX) |
| <b>Type PD</b> | 24V AC/DC ± 10%. Power consumption max. 10W.   |
| <b>Type PL</b> | Input loop powered from sensor signal 4 - 20mA (requires type A)   |
| <b>Type PM</b> | 115 - 230V AC ± 10%. Power consumption max. 15W.   |
| <b>Type PX</b> | 8 - 30V DC. Power consumption max. 0.3W.   |
| <b>Type ZB</b> | 20 - 30V DC. Power consumption max. 1W. With type PD / PM: internally powered.                                     |

## Sensor excitation

|                     |  |
|---------------------|--|
| <b>Type PB / PX</b> | Not available.   |
| <b>Type PD / PM</b> | Dipswitch adjustable sensor supply:<br>8.2V DC, $I_{out}$ max. 35mA @ 20°C.<br>12V DC, $I_{out}$ max. 50mA @ 20°C.<br>24V DC, $I_{out}$ max. 75mA @ 20°C.<br>(this voltage can vary depending on the input supply voltage) |
| <b>Note PD / PM</b> | Total consumption of sensor, active output OH and backlight may not exceed 75mA @ 24V DC @ 20°C.   |

## Directives & Standards

|                      |   |
|----------------------|---|
| <b>EMC</b>           | Directive 2014/30/EU, FCC 47 CFR part 15. |
| <b>Low voltage</b>   | Directive 2014/35/EU                      |
| <b>RoHS</b>          | Directive 2011/65/EU                      |
| <b>IP &amp; NEMA</b> | EN 60529 & NEMA 250.                      |

## Data protection

|                 |  |
|-----------------|--|
| <b>Type</b>     | EEPROM backup of all settings. Data retention at least 10 years. |
| <b>Password</b> | Configuration settings can be password protected.                |

## Enclosure

|                     |   |
|---------------------|---|
| <b>Window</b>       | Polycarbonate window.   |
| <b>Sealing</b>      | Silicone.   |
| <b>Control keys</b> | Three industrial micro-switch keys. UV-resistant silicone keypad. |

## Panel mount enclosure

|                        |  |
|------------------------|--|
| <b>Dimensions</b>      | 144 x 72 x 71.4mm (5.67" x 2.83" x 2.81") - W x H x D according DIN 43700 / IEC 61554. |
| <b>Panel cut-out</b>   | 138 x 68mm (5.43" x 2.68") L x H.  |
| <b>Material</b>        | Die-cast aluminum front panel + GRP back enclosure.                                    |
| <b>Protection</b>      | IP66, IP67 (NEMA Type4X) at the front-side.  |
| <b>Weight</b>          | 325 gr.  |
| <b>Panel thickness</b> | Max. 6mm (1/4").   |

## Signal inputs - Pressure sensor

|                       |   |
|-----------------------|---|
| <b>Type A</b>         | (0)4 - 20mA. Analog input signal can be scaled to any desired range within 0 - 20mA.  |
| <b>Type U</b>         | 0 - 10V DC. Analog input signal can be scaled to any desired range within 0 - 10V DC. |
| <b>Accuracy</b>       | Resolution: 16 bit. Error < 0.01mA / ± 0.05% FS. Low level cut-off programmable.      |
| <b>Span</b>           | 0.001 - 999,999 with variable decimal position.                                       |
| <b>Offset</b>         | -999,999 / +999,999 units.  |
| <b>Update time</b>    | Four times per second.  |
| <b>Voltage drop</b>   | Type A: max. 1V DC @ 20mA.  |
| <b>Voltage drop</b>   | Type A - PL (loop powered): max. 2.6V DC @ 20mA.                                      |
| <b>Load impedance</b> | Type U: 3kΩ.  |
| <b>Relationship</b>   | Linear and square root calculation.   |
| <b>Note A / U</b>     | For signal type A and U: external power to sensor is required; e.g. type PD / PM.     |

## Signal output - Digital output

|                 |  |
|-----------------|--|
| <b>Function</b> | User defined: low, high or both alarms output.   |
| <b>Type OH</b>  | <ul style="list-style-type: none"> <li>Active 24V DC transistor output (PNP); Load max. 75mA. Requires PD/PM.</li> <li>Passive transistor output (NPN) - not isolated; Max. 24V DC - 300mA per output. Requires PD/PM</li> </ul> |
| <b>Type OR</b>  | Isolated electro-mechanical relay (NO/NC). Requires PD/PM. Maximum resistive load: 2A @ 250V AC / 30V DC. Maximum inductive load: 0.5A (pilot duty applications)   |
| <b>Note OR</b>  | In case of inductive load, use RC snubbers.  |
| <b>Type OT</b>  | Passive transistor output (NPN) - not isolated. Max. 50V DC - 300mA per output.  |

## Operator functions

|                       |  |
|-----------------------|--|
| <b>Displayed info</b> | <ul style="list-style-type: none"> <li>Actual pressure.</li> <li>Low alarm value.</li> <li>High alarm value.</li> <li>Alarm values can be set as % (or only displayed).</li> </ul> |
|-----------------------|--|

## Temperature

|                 |                          |
|-----------------|--------------------------|
| <b>Digits</b>   | 7 digits.                |
| <b>Units</b>    | mbar, bar, PSI, no-unit. |
| <b>Decimals</b> | 0 - 1 - 2 or 3.          |

## Alarm values

|                      |   |
|----------------------|---|
| <b>Digits</b>        | 7 digits.   |
| <b>Units</b>         | According to the settings for pressure.   |
| <b>Decimals</b>      | According to the settings for pressure.   |
| <b>Time units</b>    | According to the settings for pressure.   |
| <b>Type of alarm</b> | Low and high pressure alarm. Includes alarm delay time and configurable alarm output. |

|                |             | Description   |
|----------------|-------------|---|
| Model          | <b>D053</b> | <b>Pressure monitor with one high / low alarm output.</b>         |
| Input          | <b>A</b>    | <b>(0)4 - 20mA input.</b>   |
|                | U           | 0 - 10V DC input.   |
| Enclosure      | <b>HB</b>   | <b>Aluminum panel mount front enclosure.</b>                      |
| Digital output | OH          | Active and passive transistor output - requires PD / PM.          |
|                | OR          | Highly isolated mechanical relay output - requires PD / PM.       |
|                | <b>OT</b>   | <b>Passive transistor output.</b>                                 |
| Power          | PD          | 24V AC / DC + sensor supply.                                      |
|                | PL          | Input loop powered from sensor signal 4 - 20mA - requires type A. |
|                | PM          | 115 - 230V AC + sensor supply.                                    |
|                | <b>PX</b>   | <b>Basic power supply 8 - 30V DC (no real sensor supply).</b>     |
| Battery        | PB          | Additional lithium battery (optional) - requires PL or PX.        |
| Hazardous      | <b>XX</b>   | <b>Safe area only, according CE and UKCA.</b>                     |
| Options        | ZB          | Backlight.  |
|                | <b>ZX</b>   | <b>No options.</b>  |

The **bold** marked text contains the standard configuration: D053-A-HB-OT-PX-XX-ZX.