

# Melt Pressure Transmitter with digital signal output and CANopen-Bus communication Series MDT4X0CAN



## Description

All Dynisco melt pressure sensor models are available in CANopen versions. These models can easily be interfaced directly with sophisticated CAN-BUS control systems. The integrated "intelligent" CAN electronic works completely in digital functions behind the initial analog/digital conversion of the strain gage pressure element signal. The sensor functions and communication software is in accordance with the standard CANopen Device Profile

"CiA DSP 404". The digital pressure signal output has the high resolution of 12 bit. The bidirectional bus-communication combined with internal functions like transducer setup and calibration, pressure operating alarms and sensor watchdog control etc. give the advantage of more and versatile operating conditions and security functions than analog transmitters.

## Features

- Standard CiA DSP 404 CANopen protocol
- Digital pressure signal with 12 bit resolution
- Central control for sensor set-up and functions via bidirectional BUS communication
- Zero suppression and range extension within 12 bit accuracy
- Watch-dog alarms for sensor element and electronic
- Programmable alarm limits within pressure range
- Sensor CAN-BUS Nodes direct to address by hardware jumpers, easy field replacement



## Technical Data / Operating Data

|                |   |   |   |
|----------------|---|---|---|
| Pressure range | 0 - 17 bar to 0 - 2000 bar  | Maximum overload (without influencing operating data) | 2 x pressure range for range 1000 and 1400 bar max. 1750 bar and max. 2400 bar for range 2000 bar |
| Accuracy       | MDT420CAN ± 0.5 % f.s.v.<br>- up to 50 bar ± 1 % f.s.v.<br>MDT460CAN ± 1 % f.s.v.     | Burst pressure  | 6 x pressure range max. 3000 bar  |
| Repeatability  | MDT420CAN ± 0.1 % f.s.v.<br>- up to 50 bar ± 0,2 % f.s.v.<br>MDT460CAN ± 0.2 % f.s.v. | Material in contact with media                        | 15-5 Mat. No. 1.4545, DyMAX coated  |
| Resolution     | 12 Bit  |   |   |

## Electrical Characteristics

|                      |  |  |   |
|----------------------|--|--|---|
| Configuration        | 4-arm Wheatstone bridge strain gauge (DMS) | <b>Adjustment and monitoring functions via CAN-Bus communication</b> |   |
| Isolation resistance | 1000 MΩ @ 50 V DC                          | Alarm  | 1 integrated alarm. configuration over CAN-Bus                              |
| <b>MDT4X0CAN</b>     | <b>2-wire interface CAN-Bus</b>            | "Watch-Dog" alarm  | integrated function monitoring of the sensor element and CAN-Bus electronic |
| CAN-Communication    | CANopen according to CiA standard DSP404   | Zero adjustment  | „Auto-Zero“ function within 12 bit resolution                               |
| Output signal        | digital 12 bit resolution                  | Zero suppression   | within 12 bit resolution  |
| Sampling rate        | 20 ms                                      | Range extension  | within 12 bit resolution  |
| Supply voltage       | 24 V DC (18 - 32 V DC)                     |  |   |

**Temperature influence**

**Diaphragm**

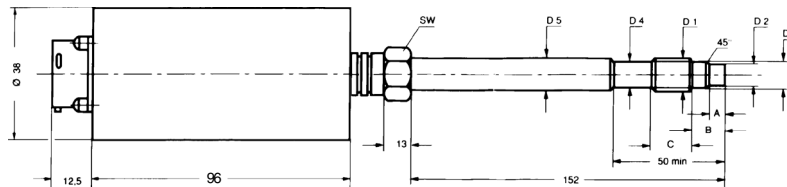
Max. Temperature 400 °C  
Zero shift due to temperature change MDT420CAN < 0.2 bar / 10 °C  
MDT460CAN < 0.4 bar / 10 °C

**Housing**

Max. Temperature 70 °C  
zero shift due to temperature change ± 0.2 % f.s.v. / 10 °C  
Sensitivity shift due to temperature change MDT420CAN ±0.1% f.s.v./10°C  
-up to 50 bar ±0.2% f.s.v./10°C  
MDT460CAN ±0.4% f.s.v./10°C

**Dimensions**

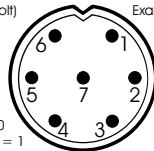
**MDT420CAN/MDT460CAN**



| D1                         | D2  | D3  | D4                                       | D5         | A  | B        | C        | SW       |
|----------------------------|---|---|--|------------|--|----------|----------|----------|
| 1/2"-20UNF-2A<br>M18 x 1,5 | 7,8 <sup>-0,05</sup><br>10 <sup>-0,05</sup> | 10,5 <sup>-0,05</sup><br>16 <sup>-0,1</sup> | 11 <sup>-0,5</sup><br>16 <sup>-0,5</sup> | 12,5<br>18 | 5,3 <sup>+0,25</sup><br>6 <sup>-0,25</sup> | 11<br>14 | 16<br>20 | 16<br>19 |

7-pol. DIN-connector (view pin contacts)

- 1 V CC (+17 ... +32 Volt)
  - 2 GND
  - 3 CAN high
  - 4 CAN low
  - 5 P00
  - 6 P01
  - 7 P02
- Pxx NOT connected = 0  
Pxx connected to GND = 1



Example: P00 = 0/P01 = 0/P02 = 1  
Then Object 2002  
Hardware\_ID\_Code  
= = 4 decimal

**Accessories**

Cleaning Tool Kit, Machining Tool Kit, Process Readout UPR700, Process Controller ATC770

**Order Specifications**

**MDT4X0CAN - XXX - XXX - XX - XXX**

|   |  |
|---|--|
| <p><b>Model</b></p> <p>MDT420CAN = digital CAN-Bus<br/>0,5 % accuracy</p> <p>MDT460CAN = digital CAN-Bus<br/>1,0 % accuracy</p>   | <p><b>Options</b></p>  |
| <p><b>Mounting Thread</b></p> <p>1/2 = Thread 1/2" 20 UNF 2A<br/>M18 = Thread M18 x 1,5</p>   | <p><b>Rigid stem</b></p> <p>15 = Stem length 152 mm<br/>(Standard)</p>   |
| <p><b>Pressure range</b></p> <p>17<sup>1)2)</sup> = 0 - 17 bar    2C = 0 - 200 bar    1M = 0 - 1000 bar<br/>35<sup>1)</sup> = 0 - 35 bar    3,5C = 0 - 350 bar    1,4M = 0 - 1400 bar<br/>50<sup>1)</sup> = 0 - 50 bar    5C = 0 - 500 bar    2M = 0 - 2000 bar<br/>1C = 0 - 100 bar    7C = 0 - 700 bar <sup>1)</sup> only MDT420CAN<sup>2)</sup> only M18</p> | <p><b>All other models of the MDT/TDT series are available in CAN-Bus version. Please call for specific delivery information.</b></p> <p>Conversion table psi/bar and inch/mm on page 141.</p> <p>Options on page 136.</p> |