

# Railway technology

Pressure switches - Pressure transmitters - Thermostats



### Lubrication systems

Pressure monitoring for automatic lubrication systems.

### Control and safety systems

Overload control, door-closing systems, fire extinguishing systems.

### Pantographs

Control and monitoring of pneumatically operated pantographs.

### Galley systems

Cooling machine, control of the inlet and outlet pressure of the cooling system, level monitoring of the cooling liquid.

### Sanitary facilities

Pressure monitoring of water and air supply, vacuum monitoring of toilet, level monitoring of black water, grey water and fresh water.

### Bogie suspensions

Air pressure control for level regulation.

### Brake systems

Pneumatic and hydraulic brake systems, emergency brake systems.

Global market leaders in railway technology put their trust in Trafag

Alstom

Bombardier

CRRC

DB Deutsche Bahn

SNCF

Siemens

Faiveley Transportation

Sigma Coachair Group

Wabtec Corporation

### Diagnostic systems

Mobile units for testing pressures on rail cars. Hydraulic monitoring systems on railway switches.

### Diesel engines

Pressure and temperature monitoring of lubrication, fuel, intake and charge air or cooling water.

### Air-conditioning systems

Pressure monitoring of cooling compressors, monitoring of room temperature.

### Windscreen washer systems

Level monitoring in windscreen washer water tanks.

### Sanding systems

Monitoring of the pressure in sanding systems.

### Propulsion

Monitoring of pressure and temperature in water or oil circuits of motors, gearboxes and in cooling circuits of current converters.

### Maintenance systems

Track tamping machines, rail milling machines for reprofiling the rail head.



# Overview railway products

## Pressure transmitters



### NAR 8258

Very compact and robust.  
1<sup>st</sup> choice for all applications  
with electrical connector M12x1  
or Industrial standard.

6



### ECR 8478

1<sup>st</sup> choice for absolute versions,  
low measuring ranges and  
corrosive or clogging media.  
Frontal membrane and corrosion  
resistant materials available.

8



### NAH 8253

Very compact and robust. For  
applications where accuracy of  
0.15 % is required (e.g. braking  
systems).

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### EPR 8293

For applications with  
electrical connection  
DIN EN 175301-803-A.

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### EPR 8283

Very robust, wide range of  
process connections. 1<sup>st</sup> choice  
for all applications with  
electrical connector  
DIN EN 175301-803-A.

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### CMP 8270

With CANopen output signal  
for pressure and temperature.  
Accuracy up to 0.1 %.

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## Pressure switches



### NAR 8258

Very compact and robust electronic  
pressure switch with 1 or 2  
configurable switching outputs.

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### 9R5

Electromechanical pressure switch  
with one microswitch in stainless  
steel housing.

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### EPN-S 8320

Robust electronic pressure switch  
for applications with electrical  
connector DIN EN 175301-803-A  
or cable. 1 switching output,  
configurable with SC.

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## Temperature monitoring



### I/IS 404/414

Capillary tube thermostat with extra robust housing for applications in rough environment.

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### M/MS 624/634

Thermostat with a wide range of options and versions. 1<sup>st</sup> choice as it covers most applications.

15



### IA/IAS 409/419

Ambient temperature thermostat with robust housing for applications in rough environment.

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### MS...R 630/632

Thermostat with limiter functionality. Used in applications where manual reset to original status is required.

15

## General accessories



### SMI

For parameterising the electronic pressure switch NAR 8258.

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### THP...

Hand pump with precision manometer.

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### SC

Handheld for parameterisation of pressure transmitters and electronic pressure switches.

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### V6/V7

Stop valve for exchanging pressure transmitter without interrupting the process.

13



### A.../D...

Adapters with manometer pressure ports.

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## NAR 8258

### Railway Pressure Transmitter



- Measuring accuracy 0.3 %
- Compact design
- Dielectrical strength: 710 VDC, meets EN 50155 (Railways)

#### Technical Data

|                      |                                                          |
|----------------------|----------------------------------------------------------|
| Measuring principle  | Thin-film-on-steel                                       |
| Measuring range      | 0 ... 6 to 0 ... 700 bar<br>0 ... 100 to 0 ... 10000 psi |
| Output signal        | 4 ... 20 mA                                              |
| Accuracy @ 25°C typ. | ± 0.3 % FS typ.                                          |
| Media temperature    | -40°C ... +85°C                                          |
| Ambient temperature  | EN 50155:<br>OT6 (-40°C ... +85°C)                       |

Data sheet [www.trafag.com/H72307](http://www.trafag.com/H72307)

## NAH 8253

### Precision pressure transmitter



- Optional: Switching output 1 or 2 PNP transistors
- Accuracy classes 0.1 %, 0.15 %, 0.3 %
- Excellent temperature resistance
- Relative and absolute pressure measurement
- Dielectrical strength 500 VAC, meets EN 50155 (Railways)

#### Technical Data

|                      |                                                          |
|----------------------|----------------------------------------------------------|
| Measuring principle  | Thin-film-on-steel                                       |
| Measuring range      | 0 ... 2.5 to 0 ... 600 bar<br>0 ... 30 to 0 ... 7500 psi |
| Output signal        | 4 ... 20 mA                                              |
| Accuracy @ 25°C typ. | ± 0.3 % FS typ.<br>± 0.15 % FS typ.<br>± 0.1 % FS typ.   |
| Media temperature    | -40°C ... +125°C                                         |
| Ambient temperature  | -40°C ... +125°C                                         |

Data sheet [www.trafag.com/H72300](http://www.trafag.com/H72300)

# EPR 8283

## Railway Pressure Transmitter



- Accuracy classes 0.3 %, 0.5 %
- Completely welded steel sensor system without additional seals
- Dielectrical strength: 710 VDC, meets EN 50155 (Railways)

### Technical Data

|                      |                                                          |
|----------------------|----------------------------------------------------------|
| Measuring principle  | Thin-film-on-steel                                       |
| Measuring range      | 0 ... 2.5 to 0 ... 600 bar<br>0 ... 30 to 0 ... 7500 psi |
| Output signal        | 4 ... 20 mA                                              |
| Accuracy @ 25°C typ. | ± 0.5 % FS typ.<br>± 0.3 % FS typ.                       |
| Media temperature    | -40°C ... +125°C                                         |
| Ambient temperature  | -40°C ... +125°C                                         |

Data sheet

[www.trafag.com/H72319](http://www.trafag.com/H72319)



## ECR 8478

### Railway Pressure Transmitter with ceramic sensor



- Measuring ranges from 100 mbar
- Relative or absolute pressure measurement
- Frontal membrane optional
- Dielectrical strength: 600 VAC / 710 VDC, meets EN 50155 (Railways)

#### Technical Data

|                      |                                                          |
|----------------------|----------------------------------------------------------|
| Measuring principle  | Thick-film-on-ceramic                                    |
| Measuring range      | 0 ... 0.1 to 0 ... 60 bar<br>0 ... 1.5 to 0 ... 1000 psi |
| Output signal        | 4 ... 20 mA                                              |
| Accuracy @ 25°C typ. | ± 0.3 % FS typ.<br>(± 0.5 % FS typ., ± 1 % FS typ.)      |
| Media temperature    | -25°C ... +125°C                                         |
| Ambient temperature  | -25°C ... +125°C                                         |

Data sheet

[www.trafag.com/H72337](http://www.trafag.com/H72337)

## EPR 8293

### Railway Pressure Transmitter



- Accuracy classes 0.3 %, 0.5 %
- Completely welded steel sensor system without additional seals
- Dielectrical strength: 500 VAC, 50 Hz, meets EN 50155 (Railways)

#### Technical Data

|                      |                                    |
|----------------------|------------------------------------|
| Measuring principle  | Thin-film-on-steel                 |
| Measuring range      | 0 ... 2.5 to 0 ... 600 bar         |
| Output signal        | 4 ... 20 mA                        |
| Accuracy @ 25°C typ. | ± 0.5 % FS typ.<br>± 0.3 % FS typ. |
| Media temperature    | -40°C ... +125°C                   |
| Ambient temperature  | -40°C ... +125°C                   |

Data sheet

[www.trafag.com/H72311](http://www.trafag.com/H72311)

# CMP 8270

## CANopen Miniature Pressure Transmitter

CANopen



- Accuracy classes 0.1 %, 0.15 %, 0.3 %, 0.5 %
- Measurement of pressure and temperature
- CANopen bus protocol DS301/DS404 supports CAN 2.0A/B

### Technical Data

|                      |                                                                           |
|----------------------|---------------------------------------------------------------------------|
| Measuring principle  | Thin-film-on-steel, piezoresistive                                        |
| Measuring range      | 0 ... 0.2 to 0 ... 600 bar<br>0 ... 3 to 0 ... 7500 psi                   |
| Output signal        | Bus protocol CANopen DS404                                                |
| Accuracy @ 25°C typ. | ± 0.5 % FS typ.<br>± 0.3 % FS typ.<br>± 0.15 % FS typ.<br>± 0.1 % FS typ. |
| Media temperature    | -50°C ... +135°C                                                          |
| Ambient temperature  | -40°C ... +125°C                                                          |

Data sheet

[www.trafag.com/H72614](http://www.trafag.com/H72614)



# NAR 8258

## Electronic pressure switch



- Measuring accuracy 0.3 %
- 1 or 2 PNP transistors
- Parameterization via smartphone App (Android)
- Switching current up to 400 mA
- Dielectrical strength: 710 VDC, meets EN 50155 (Railways)

### Technical Data

|                      |                                                          |
|----------------------|----------------------------------------------------------|
| Measuring principle  | Thin-film-on-steel                                       |
| Measuring range      | 0 ... 6 to 0 ... 700 bar<br>0 ... 100 to 0 ... 10000 psi |
| Output signal        | Switching output:<br>1 or 2 PNP transistors              |
| Accuracy @ 25°C typ. | ± 0.3 % FS typ.                                          |
| Media temperature    | -40°C ... +85°C                                          |
| Ambient temperature  | EN 50155:<br>OT6 (-40°C ... +85°C)                       |

Data sheet [www.trafag.com/H72307](http://www.trafag.com/H72307)

# SMI

## Sensor Master Interface



- Read out of sensor data
- Parameterization of switching points on NAX pressure switches
- Fast and easy operation via Windows or Android App "Sensor Master Communicator SMC"
- Reset pressure measurement instruments to factory settings

### Technical Data

|                       |                                                                |
|-----------------------|----------------------------------------------------------------|
| Ambient temperature   | 0°C ... +40°C                                                  |
| Supply voltage        | 5 VDC, ±0.25, 1 A<br>(Supply via USB interface)                |
| Protection            | IP20                                                           |
| Storage temperature   | -10°C ... +50°C                                                |
| Dimensions            | LxWxH: 120x76x27 mm                                            |
| Operation Interface   | Via Windows or Android App<br>"Sensor Master Communicator SMC" |
| Communication SMC/SMI | Via Bluetooth LE (Android) or<br>LAN/RJ45 (Windows)            |

Data sheet [www.trafag.com/H72618](http://www.trafag.com/H72618)

# EPN-S 8320

## Electronic Pressure Switch



- Rugged design for harsh environments
- 1 PNP transistor
- Wide temperature range
- Switchpoint factory set or programmable on site with Trafag Sensor Communicator SC

### Technical Data

|                      |                                                                       |
|----------------------|-----------------------------------------------------------------------|
| Measuring principle  | Thin-film-on-steel                                                    |
| Measuring range      | 0 ... 2.5 to 0 ... 600 bar<br>0 ... 30 to 0 ... 7500 psi              |
| Output signal        | Switching output: 1 transistor                                        |
| Accuracy @ 25°C typ. | ± 0.5 % FS typ. (Switchpoint)                                         |
| Media temperature    | -40°C ... +125°C                                                      |
| Ambient temperature  | Standard: -25°C ... +85°C<br>Option accessory 67:<br>-40°C ... +125°C |

Data sheet

[www.trafag.com/H72333](http://www.trafag.com/H72333)

# SC

## Sensor Communicator



- Read out of sensor data
- Adjustment of zero point and span
- Real time pressure measuring
- Software update and battery charge with USB-interface

### Technical Data

- Identification of device data: Model, signal output, type plate, manufacturing date
- Setting of switchpoint (8320 EPN-S)
- CANopen: Setting of Node-ID and baudrate
- Reset to factory settings

Flyer

[www.trafag.com/H70654](http://www.trafag.com/H70654)

# 9R5

## Mechanical pressure switch Picostat



- Stainless steel housing
- Stainless steel bellow sensor, welded
- Compact design

### Technical Data

|                     |                                                             |
|---------------------|-------------------------------------------------------------|
| Measuring principle | Steel bellow welded                                         |
| Setting range       | -0.8 ... 2 to 7 ... 12 bar<br>-11 ... 29 to 102 ... 174 psi |
| Output signal       | 1 Floating change-over contact (SPDT)                       |
| Media temperature   | -40°C ... +85°C                                             |
| Ambient temperature | -40°C ... +85°C<br>(EN 50155: OT6)                          |

Data sheet

[www.trafag.com/H72370](http://www.trafag.com/H72370)



## THP...

### Hand pump



- For testing of pressure transmitters and pressure switches

#### Technical Data

|            |              |
|------------|--------------|
| Connection | G1/4" female |
|------------|--------------|

| Product No. | Range [bar] |
|-------------|-------------|
|-------------|-------------|

|       |               |
|-------|---------------|
| THP30 | -0.85 ... +25 |
|-------|---------------|

|        |           |                    |
|--------|-----------|--------------------|
| THP700 | 0 ... 700 | Resolution 0.2 bar |
|--------|-----------|--------------------|

## V6/V7

### Stop valve



- Allows replacement of instruments without interruption of process (max. 40 bar)

#### Technical Data

|          |              |
|----------|--------------|
| Material | 1.4305 / FKM |
|----------|--------------|

|          |              |
|----------|--------------|
| Pressure | max. 600 bar |
|----------|--------------|

|                   |                   |
|-------------------|-------------------|
| Media temperature | -25°C ... +125 °C |
|-------------------|-------------------|

|            |                                                                  |
|------------|------------------------------------------------------------------|
| Data sheet | <a href="http://www.trafag.com/H72258">www.trafag.com/H72258</a> |
|------------|------------------------------------------------------------------|

## A.../D...

### Adapters with manometer pressure ports



- Pressure adapters with different thread combinations and materials for individual applications

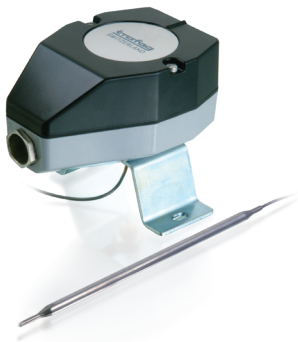
#### Technical Data

|          |                           |
|----------|---------------------------|
| Material | 1.4435 (AISI316L) / Brass |
|----------|---------------------------|

|            |                                                                  |
|------------|------------------------------------------------------------------|
| Data sheet | <a href="http://www.trafag.com/H72258">www.trafag.com/H72258</a> |
|------------|------------------------------------------------------------------|

# I/IS 404/414

Industat



- Rugged housing
- Protection IP65

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## Technical Data

|                   |                                        |
|-------------------|----------------------------------------|
| Measuring range   | -30°C ... +40°C to<br>+70°C ... +350°C |
| Output signal     | Floating change-over contact           |
| Media temperature | -30°C ... +350°C                       |

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Data sheet [www.trafag.com/H72110](http://www.trafag.com/H72110)

# IA/IAS 409/419

Industat



- Rugged housing
- Protection IP65

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## Technical Data

|                   |                                     |
|-------------------|-------------------------------------|
| Measuring range   | -30°C ... +30°C to<br>0°C ... +60°C |
| Output signal     | Floating change-over contact        |
| Media temperature | -30°C ... +60°C                     |

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Data sheet [www.trafag.com/H72116](http://www.trafag.com/H72116)

# MST 624/634

## Ministat



- Protection IP54
- Electrical connection on terminal screw

### Technical Data

|                   |                                        |
|-------------------|----------------------------------------|
| Measuring range   | -30°C ... +40°C to<br>+70°C ... +350°C |
| Output signal     | Floating change-over contact           |
| Media temperature | -30°C ... +350°C                       |

Data sheet [www.trafag.com/H72174](http://www.trafag.com/H72174)

# MS...R 630/632

## Mini Limistat



- External or internal resetting
- Protection IP54
- Electrical connection on terminal screw

### Technical Data

|                   |                                        |
|-------------------|----------------------------------------|
| Measuring range   | -30°C ... +40°C to<br>+70°C ... +350°C |
| Output signal     | Floating change-over contact           |
| Media temperature | -30°C ... +350°C                       |

Data sheet [www.trafag.com/H72173](http://www.trafag.com/H72173)

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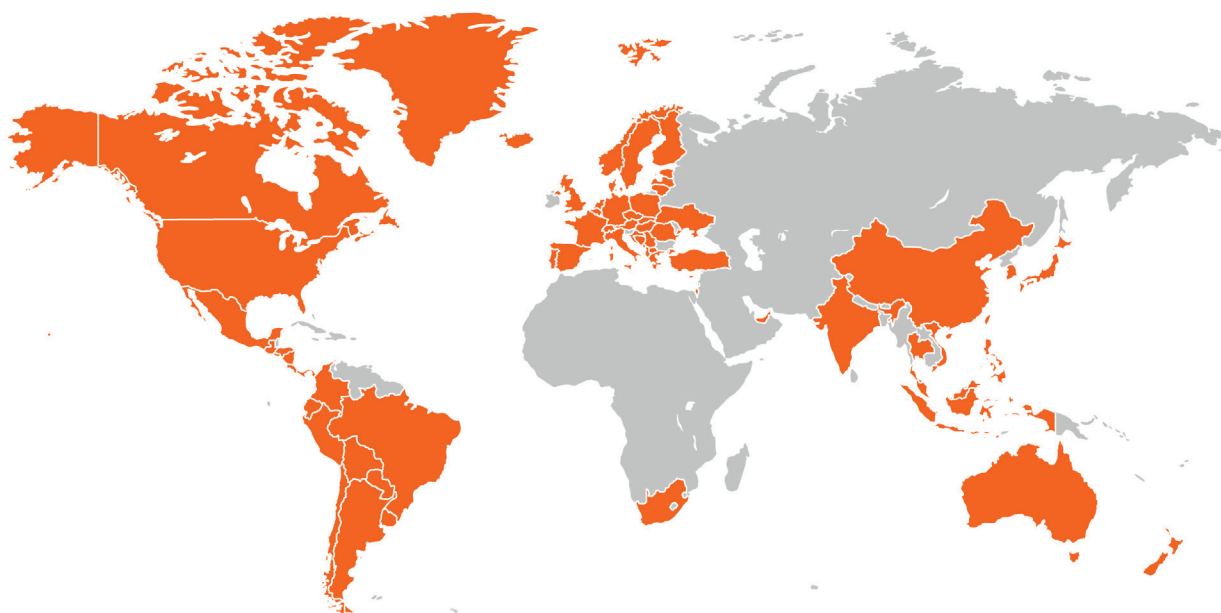
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|                   |         |         |
|-------------------|---------|---------|
| Subject to change | 02/2024 | H70555d |
|-------------------|---------|---------|



Coordinates of representatives can be found at [www.trafaq.com/trafaq-worldwide](http://www.trafaq.com/trafaq-worldwide)



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Trafag sensors & controls  
Switzerland

Industriestrasse 11  
8608 Bubikon

+41 44 922 32 32  
www.trafag.com

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