

MEASUREMENT TECHNOLOGY



Measurement Technology for Polymer Applications
Made in Germany

gneuß

WELCOME TO GNEUSS

We look forward to meeting you

With more than 30 years of experience and over 60 international patents, the family-owned and operated company Gneuss has made a name for itself as a supplier of innovative solutions for the plastics processing industry. Gneuss develops and supplies reliable and accurate measurement technology, thereby ensuring an important prerequisite for the production of polymer products.



Based in Bad Oeynhausen, Germany, Gneuss is committed to the expectations of products "made in Germany" while serving its customers worldwide. With its subsidiary in the USA, offices in Brazil and China, a cooperation partner in Japan and together with representatives worldwide, Gneuss is present throughout the world.

The best possible technical support, excellent field service and spare parts availability is provided on all five continents. Support is available around the clock via a telephone service hotline. Pilot lines for trials, development, and prompt product shipment are available at several locations.

BUSINESS AREAS



Measurement Technology



Processing Technology



Filtration Technology

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Digital Indicator / Display Units

- TMV Temperature Measurement Display / Amplifier
- DMV Pressure Measurement Display / Amplifier

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Accessories

- | | | |
|---|---------------------------|------------------------|
| • Ready made-up cables | • Insert Bushing Adaptors | • Rupture Discs |
| • Connector Cables for Pressure and Temperature | • CAN-Modul | • Bushing Fitting Tool |
| | • Bore / Cleaning Kits | |

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MULTI-FACETED EXPERTISE

Gneuss at a glance

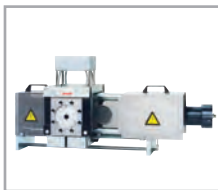
In addition to Measurement Technology, Gneuss offers a wide range of products and services to ensure permanent production consistency and product quality for the plastics manufacturing and processing industries.

Filtration Technology



Rotary Filtration Systems

The patented Gneuss Rotary Filtration Systems enable fully automatic, process and pressure constant filtration. The main characteristic of these Filtration Systems is the Rotary Disk with its ring of screen cavities, located between two solid steel blocks.



Screen changer

Gneuss has engineered solutions for simple applications. The robust hydraulic screen changers with Gneuss-typical characteristics are perfectly tailored to the customer's requirements with regard to ease of operation and technology level. They are also compact and offer excellent value for money.

Processing Technology



MRS Extrusion Technology

The Gneuss MRS Multi Rotation System offers new possibilities in the venting or devolatilization of polymer melts. It allows, for example, the processing of PET without pre-drying. Alternatively, this technology can also be used to introduce gases (for foamed products) or fillers/additives homogenously into the melt.



Process and Control Technology

The use of patented measurement and control technology allows Gneuss to simplify extrusion processes while at the same time increasing their reliability.



Viscosity Measurement

The Gneuss Online Viscometer VIS allows the permanent, real time monitoring of the polymer viscosity. Its rugged design and measurement accuracy are well proven. The viscosity takes place without material loss. The design permits easy cleaning, without influencing the process.

MEASUREMENT TECHNOLOGY

Transducers for Pressure and Temperature

The assurance of product quality and reliability is of great importance in the plastics extrusion industry. Superior performance is now defined by precise accuracy, extended life, and robust design for challenging environments.

Gneuss Measurement Technology products for polymer processing industries meet the highest requirements. Top quality raw materials, constant and stringent quality control and advanced manufacturing methods mean that our transducers are among the best products on the market.



We take pride in innovation and our philosophy is to exceed our customer's requirements for advanced, economical, and environmentally friendly technology. The standard Gneuss transducers are compatible – and therefore interchangeable – with standard types. Gneuss also offers a custom design service for special-made sensors for individual applications. Our products and services are certified to ISO 9001.



Our advantages

- Made in Germany
- Long life
- Quick delivery
- Permanent accuracy
- Non-mercury
- Custom-built sensors
- Online shop
- Worldwide distribution
- Repair program

MEASUREMENT TECHNOLOGY

Gneuss' Expertise: an Overview

Design Expertise

Gneuss has made a priority of listening to customer's needs and requirements. Our core businesses, the manufacture of Melt Filtration Systems, Extruders, and Measurement Technology instrumentation, have taught us how to react flexibly and quickly to critical applications. Our Measurement Technology Products are developed and manufactured at Gneuss in Bad Oeynhausen, and are subsequently tested in our test lab. The worldwide success of our products and many satisfied customers confirm this approach is effective.



Availability

We support our global distribution partners by providing quick product availability, prompt shipment, and responsive service. This is accomplished by our standard stock of numerous sensor model combinations, which is strictly monitored to ensure availability requirements of our quick-ship program. We also guarantee a short lead time for standard models.



Applications and Support

Repairing rather than replacing a pressure transducer can save up to 50%. Our Repair Center can evaluate your pressure transducers to identify reasons for failure and provide a detailed estimate. Should the sensor be beyond reasonable economic repair, we will offer you a new replacement sensor with exactly the same specification, at a reduced price.

Do you use Melt Pressure Transducers from another manufacturer?

Gneuss can offer you a 1:1 model interchangeable from other brands, with a competitive price and improved performance.



Leading Quality Standards

All Gneuss sensors have an individual 7-digit serial number, which is clearly legible and positioned permanently next to the connector in the metal housing. Even after years in operation, dirty or unclear instruments are easily recognizable. The requirements of ISO 9001 have been successfully fulfilled for several years.



Individual Design

Our flexible manufacturing program guarantees extremely short delivery times. Through our extensive knowledge and experience in the field of pressure and temperature measurement, we design and manufacture many individual models with customer specific requirements in the shortest period of time. Our extensive choices of mechanical and electrical options allow our clients to customize to their process.



The Diaphragm

The Gneuss diaphragm incorporates a proprietary membrane utilizing premium metals with a high grade of consistency. This configuration allows increased strength, while not effecting specified accuracy or response. This system and a variety of special materials allows a standard deviation of only 0.5% absolute. All Gneuss sensors are furthermore coated with protective G-Coating to counteract strong adhesive melts.

The benefit of extended life and increased dia-phragm cycles can reduce unexpected down times or loss of production.



Non-Mercury

Thanks to our NTX™-Technology, an environmentally-friendly Melt Pressure Transducer with superior performance is available from Gneuss. The pressure transducers with NTX™-Technology distinguish themselves by their low zero point drift.

They are suitable for a wide range of temperatures.

NTX™-series sensors are completely non-toxic, and discarded pressure transducers can therefore be simply disposed of.

DA SERIES PRESSURE TRANSDUCER

with standardized Output Signal - mV/V output

The DA Series melt pressure transducers are characterized by their high quality of workmanship and outstanding performance and are used in the plastic manufacturing and processing industries throughout the world. Their consistent reproducibility and stable measuring values contribute to our measurement accuracies.



| Technical specifications DA Series | |
|---|--|
| Pressure range | 0...50 to 0...2000 bar |
| Accuracy incl. linearity, hysteresis, and reproducibility in % to full scale | 0,25 % or 0,5 % |
| Reproducibility in % to full scale | ± 0,1 % |
| Membrane coating | G-Coating |
| Resolution | infinite |
| Max. pressure overload without influence on operating value | 2 x range up to 1000 bar (14,500 psi) 1,5 x pressure range over 1000 bar (14,500 psi) |
| Bridge resistance | 350 Ohm Wheatstone Bridge |
| Supply voltage | max. 10 V DC |
| Output signal | 2 mV/V, 3,33 mV/V |
| Transmission medium | NTX™ as standard |
| Process connection | 1/2"20 UNF or M18 x 1,5 |
| Calibration point | 80 % |
| Insulation resistance | >1000 MOhm at 50 V |
| Max. temperature at diaphragm | 400 °C (750 °F)* |
| Max. temperature at terminal head during operation | -40... +125 °C (40 °F...260 °F) |
| Zero point deviation against diaphragm temperature changes at the diaphragm % / ° C (% / 1 , 8 ° F) | ± 0,02 bar / °C (± 0,29 psi / °C) |
| Zero point deviation against temperature changes at terminal head in % / ° C (% / 1 , 8 ° F) | ± 0,003 % |
| Ingress protection housing | IP 65 |
| Ingress protection connector | IP 55 |
| Max torque | 1/2"20 UNF 30 Nm (22 lbf ft) M18 x 1,5 50 Nm (32 lbf ft) |

*depending on the filling medium

- Application areas up to 400 °C (750 °F)
- High temperature design for temperatures of up to 500 °C (932 °F)
- Pressure ranges from 0...50 to 0...2.000 bar (0...725 to 0...29,000 psi)
- Liquid filled measuring system
- 100% market compatible
- Non-Mercury NTX™ version available
- Maximum reliability through new membrane technology
- Standard G-coating to counteract adhesive materials

Product variations (examples)



Flexible capillary

G-Armor version with robust flexible component



Special types

For example space restrictive exposed capillary

DAI SERIES PRESSURE TRANSMITTER

with Integrated Amplifier - mA or V output

The DAI Series offers – in addition to maximum reliability – improved user friendliness in the form of an Auto-Zero Function for local or remote configuration. These models offer mA and V output signals for further processing. The popular and most commonly used 2-wire and 4...20mA configuration provide unequalled interference in critical environments.



Technical specifications DAI Series

| | |
|--|--|
| Pressure range | 0...50 to 0...2000 bar |
| Accuracy incl. linearity, hysteresis, and reproducibility in % to full scale | 0,15 %, 0,25% or 0,5 % |
| Reproducibility in % to full scale | ± 0,1% |
| Membrane coating | G-Coating |
| Resolution | 16 Bit |
| Max. pressure overload without influence on operating value | 2 x range up to 1000 bar (14,500 psi) 1,5 x pressure range over 1000 bar (14,500 psi) |
| Bridge resistance | 3500 Ohm Wheatstone Bridge |
| Supply voltage | 19-32 V DC |
| Output signal | V or mA |
| Transmission medium | NTX™ as standard |
| Process connection | 1/2"20 UNF or M18 x 1,5 |
| Calibration point | 80 % |
| Isolation resistance | >1000 MOhm at 50 V |
| Max. temperature at diaphragm | 400 °C (750 °F)* |
| Max. temperature at terminal head during operation | -40... +85 °C (40 °F...185 °F) |
| Zero point deviation against diaphragm temperature changes at the diaphragm % / ° C (% / 1, 8 ° F) | ± 0,02 bar / °C (± 0,29 psi / °C) |
| Zero point deviation against temperature changes at terminal head in % / ° C (% / 1, 8 ° F) | ± 0,003 % |
| Ingress protection housing | IP 65 |
| Ingress protection connector | IP 55 |
| Max torque | 1/2"20 UNF 30 Nm (22 lbf ft) M18 x 1,5 50 Nm (32 lbf ft) |

*depending on the filling medium

- Interference resistant signals over long distances
- 3- and 4- wire technology available
- Applications with process temps of up to 400 °C (750 °F) possible
- High temperature design for temperatures of up to 500 °C (932 °F)
- Maximum reliability through new membrane technology
- Standard G-coating to counteract adhesive materials

Product variations (examples)



Highly accurate pressure sensors

Optional with an accuracy of 0.5%, 0.25% or 0.15% of full scale



Auto-zero Function

As an option available with optical auto-zero release in the sensor head

DAP SERIES PRESSURE TRANSDUCER

with Heated Sensor Tip - mV/V output

The DAP Series incorporates a heated sensor tip, which limits the potential for sensor damage relating to the membrane, resulting from installation or removal of the pressure transmitter. The Gneuss patented heated sensor tip allows the sensor to be easily removed from a "frozen" melt without any problems. The diaphragm is not damaged when the polymer contracts. The DAP has revolutionized the handling of critical materials, for example PC, PMMA or ABS.



Technical specifications DAP Series

| | |
|--|--|
| Pressure range | 0...50 to 0...2000 bar |
| Accuracy incl. linearity, hysteresis, and reproducibility in % to full scale | 0,25 % or 0,5 % |
| Reproducibility in % to full scale | ± 0,1% |
| Membrane coating | G-Coating |
| Resolution | Infinite |
| Max. pressure overload without influence on operating value | 2 x range up to 1000 bar (14,500 psi) 1,5 x pressure range over 1000 bar (14,500 psi) |
| Bridge resistance | 350 Ohm Wheatstone Bridge |
| Supply voltage | max. 10 V DC |
| Output signal | mV/V |
| Transmission medium | NTX™ as standard |
| Process connection | 1/2"20 UNF or M18 x 1,5 |
| Calibration point | 80 % |
| Isolation resistance | >1000 MOhm at 50 V |
| Max. temperature at diaphragm | 400 °C (750 °F)* |
| Max. temperature at terminal head during operation | -40... +125 °C (40 °F...260 °F) |
| Zero point deviation against diaphragm temperature changes at the diaphragm % / ° C (% / 1, 8 ° F) | ± 0,02 bar / °C (± 0,29 psi / °C) |
| Zero point deviation against temperature changes at terminal head in % / ° C (% / 1, 8 ° F) | ± 0,003 % |
| Ingress protection housing | IP 65 |
| Ingress protection connector | IP 55 |
| Max torque | 1/2"20 UNF 30 Nm (22 lbf ft) M18 x 1,5 50 Nm (32 lbf ft) |

*depending on the filling medium

- Heater with 24 V
- Combined pressure and temperature measurement
- Robust design with G-Armor flexible components
- Patented technology
- G-coating to counteract adhesive materials
- Removal possible even when extrusion line is down or at ambient temperature
- Longlife Design

Product variations (examples)



Special diaphragm coating

Special coating options available



HCS Heater Controller System

Heater controller unit (DAP Series)

DAIP SERIES PRESSURE TRANSMITTER

with Heated Sensor Tip - mA; V output

The DAIP Melt Pressure Transducer combines an extremely high level of user-friendliness with the advantages of the heated diaphragm. Thanks to the Auto-Zero function, the sensor can be calibrated either directly on the unit itself or from the extruder control cabinet / DCS room. The sensor is available with mA or V signals. The patented, heated tip means that the sensor can be safely removed without the risk of damage even when the polymer is cold. The risk of damage from extremely sticky materials such as PC, PMMA or ABS can be reliably avoided.



Technical specifications DAIP Series

| | |
|--|--|
| Pressure range | 0...50 to 0...2000 bar |
| Accuracy incl. linearity, hysteresis, and reproducibility in % to full scale | 0,15 %, 0,25 % or 0,5 % |
| Reproducibility in % to full scale | ± 0,1 % |
| Membrane coating | G-Coating |
| Resolution | 16 Bit |
| Max. pressure overload without influence on operating value | 2 x range up to 1000 bar (14,500 psi) 1,5 x pressure range over 1000 bar (14,500 psi) |
| Bridge resistance | 3500 Ohm Wheatstone Bridge |
| Supply voltage | 15...32 V DC |
| Output signal | V or mA |
| Transmission medium | NTX™ |
| Process connection | 1/2"20 UNF or M18 x 1,5 |
| Calibration point | 80 % |
| Isolation resistance | >1000 MOhm at 50 V |
| Max. temperature at diaphragm | 400 °C |
| Max. temperature at terminal head during operation | -40... +85 °C (40 °F... 185 °F) |
| Zero point deviation against diaphragm temperature changes at the diaphragm % / ° C (% / 1, 8 ° F) | ± 0,02 bar / °C (± 0,29 psi / °C) |
| Zero point deviation against temperature changes at terminal head in % / ° C (% / 1, 8 ° F) | ± 0,003 % |
| Ingress protection housing | IP 65 |
| Ingress protection connector | IP 55 |
| Max torque | 1/2"20 UNF 30 Nm (22 lbf ft) M18 x 1,5 50 Nm (32 lbf ft) |

*depending on the filling medium

- Heater with 24 V
- Combined pressure and temperature measurement
- Robust design with G-Armor flexible components
- Patented technology
- G-coating to counteract adhesive materials
- Removal possible even when extrusion line is down or at ambient temperature
- Longlife Design

Product variations (examples)



Auto-zero Funktion

As an option available with optical auto-zero release in the sensor head



Special diaphragm coating

Special coating options available



HCS Heater Controller System

Heater controller unit (DAP Series)

DTA SERIES PRESSURE TRANSDUCER

with Standardized Output Signal and Integrated Temperature Measurement

The DTA defines the industry standard of a pressure measurement in combination with a temperature measurement. One process connection is enough to measure both values.

The unit excels in its high quality workmanship and cost efficiency. Its consistent reproducibility and stable measuring values contribute to our measurement accuracies.



Technical specifications DTA Series

| | |
|--|--|
| Pressure range | 0...50 to 0...2000 bar |
| Accuracy incl. linearity, hysteresis, and reproducibility in % to full scale | 0,25 % or 0,5 % |
| Reproducibility in % to full scale | ± 0,1% |
| Membrane coating | G-Coating |
| Resolution | Infinite |
| Max. pressure overload without influence on operating value | 2 x range up to 1000 bar (14,500 psi) 1,5 x pressure range over 1000 bar (14,500 psi) |
| Bridge resistance | 350 Ohm Wheatstone Bridge |
| Supply voltage | max. 10 V DC |
| Output signal | mV/V |
| Transmission medium | NTX™ as standard |
| Process connection | 1/2"20 UNF or M18 x 1,5 |
| Calibration point | 80 % |
| Isolation resistance | >1000 MOhm at 50 V |
| Max. temperature at diaphragm | 400 °C (750 °F)* |
| Max. temperature at terminal head during operation | -40... +125 °C (40 °F...260 °F) |
| Zero point deviation against diaphragm temperature changes at the diaphragm % / ° C (% / 1, 8 ° F) | ± 0,02 bar / °C (± 0,29 psi / °C) |
| Zero point deviation against temperature changes at terminal head in % / ° C (% / 1, 8 ° F) | ± 0,003 % |
| Ingress protection housing | IP 65 |
| Ingress protection connector | IP 55 |
| Max torque | 1/2"20 UNF 30 Nm (22 lbf ft) M18 x 1,5 50 Nm (32 lbf ft) |

*depending on the filling medium

- Liquid filled measuring system
- Maximum reliability through new membrane technology
- Standard G-coating to counteract adhesive materials
- Combined pressure and temperature measurement
- Robust design with G-Armor flexible components
- Applications with process temperatures of up to 400°C (750°F) possible
- Pressure ranges from 0...50 and 0...2.000 bar (0-725 to 29,000 psi) available

Product variations (examples)



Special shaft length



PT100 measuring element

DTAI SERIES PRESSURE TRANSMITTER

with Integrated Amplifier and Integrated Temperature Measurement

The DTAI first of all offers the user the comfort of operating a DAI in combination with a temperature measurement. One process connection is enough to measure both values.

These model offers mA and V output signals for further processing. The popular and most commonly used 2-wire and 4...20 mA configurations provide unequalled interference in critical environments.



Technical specifications DTAI Series

| | |
|--|--|
| Pressure range | 0...50 to 0...2000 bar |
| Accuracy incl. linearity, hysteresis, and reproducibility in % to full scale | 0,15 %, 0,25 % or 0,5 % |
| Reproducibility in % to full scale | ± 0,1 % |
| Membrane coating | G-Coating |
| Resolution | 16 Bit |
| Max. pressure overload without influence on operating value | 2 x range up to 1000 bar (14,500 psi) 1,5 x pressure range over 1000 bar (14,500 psi) |
| Bridge resistance | 3500 Ohm Wheatstone Bridge |
| Supply voltage | 15...32 V DC |
| Output signal | V or mA |
| Transmission medium | NTX™ |
| Process connection | 1/2"20 UNF or M18 x 1,5 |
| Calibration point | 80 % |
| Isolation resistance | >1000 MOhm at 50 V |
| Max. temperature at diaphragm | 400 °C |
| Max. temperature at terminal head during operation | -40... +85 °C (40 °F... 185 °F) |
| Zero point deviation against diaphragm temperature changes at the diaphragm % / ° C (% / 1, 8 ° F) | ± 0,02 bar / °C (± 0,29 psi / °C) |
| Zero point deviation against temperature changes at terminal head in % / ° C (% / 1, 8 ° F) | ± 0,003 % |
| Ingress protection housing | IP 65 |
| Ingress protection connector | IP 55 |
| Max torque | 1/2"20 UNF 30 Nm (22 lbf ft) M18 x 1,5 50 Nm (32 lbf ft) |

*depending on the filling medium

- Liquid filled measuring system
- Maximum reliability through new membrane technology
- Standard G-coating to counteract adhesive materials
- Combined pressure and temperature measurement
- Robust design with G-Armor flexible components
- Applications with process temperatures of up to 400°C (750°F) possible

Product variations (examples)



Special shaft length



PT100 measuring element

DAIX SERIES PRESSURE TRANSMITTER

Explosion-Proof - 4...20 mA output

With the DAIX Series, Gneuss now offers an explosion proof pressure transducer. This melt pressure transducer is intrinsically safe. No compromises were made when we developed this excellent choice for Ex-areas.



| Technical specifications DAIX Series | |
|--|--|
| Pressure range | 0...50 to 0...2000 bar |
| Accuracy incl. linearity, hysteresis, and reproducibility in % to full scale | 0,15 %, 0,25 % or 0,5 % |
| Reproducibility in % to full scale | ± 0,1 % |
| Membrane coating | G-Coating |
| Resolution | 16 Bit |
| Max. pressure overload without influence on operating value | 2 x range up to 1000 bar (14,500 psi) 1,5 x pressure range over 1000 bar (14,500 psi) |
| Bridge resistance | 3500 Wheatstone Bridge |
| Supply voltage | 19...30 V |
| Output signal | 4...20 mA |
| Transmission medium | NTX™ |
| Process connection | 1/2" 20 UNF or M18 x 1,5 |
| Calibration point | 80 % |
| Insulation resistance | >0,1 MOhm at 500 VAC |
| Max. temperature at diaphragm | 400 °C (750°F) |
| Max. temperature at terminal head during operation | -20... +60 °C (4 °F...140 °F) |
| Zero point deviation against diaphragm temperature changes at the diaphragm in % / °C (% / 1, 8 ° F) | ± 0,02 bar / °C (± 0,29 psi / °C) |
| Zero point deviation against temperature changes at terminal head in % / °C (% / 1, 8 ° F) | ± 0,003 % |
| Ingress protection housing | IP 65 |
| Ingress protection connector | IP 55 |
| Max torque | 1/2" 20 UNF 30 Nm (22 lbf ft) M18 x 1,5 50 Nm (32 lbf ft) |

*depending on the filling medium

- 0,5%, 0,25% or 0,15% of full scale
- Ex II 1G Ex ia IIC T4
- 2 wire technology with 4...20 mA output
- Applications with process temps of up to 400 °C (750 °F) possible
- Interference resistant signals over long distances
- Developed in accordance with requirements of the plastics and chemical industry
- G-coating to counteract adhesive materials

Product variations (examples)



Flexible capillary

G-Armor version with robust flexible component



Higher protection class

High protection class with cable outlet IP68



Special designs

For example shaft length according to customer specifications

SAFETY SYSTEM EPM

Protection against Over Pressure for Extrusion Lines

Throughout the world, the requirements on plastics and rubber machines with regard to safety protection against over pressure are increasing.

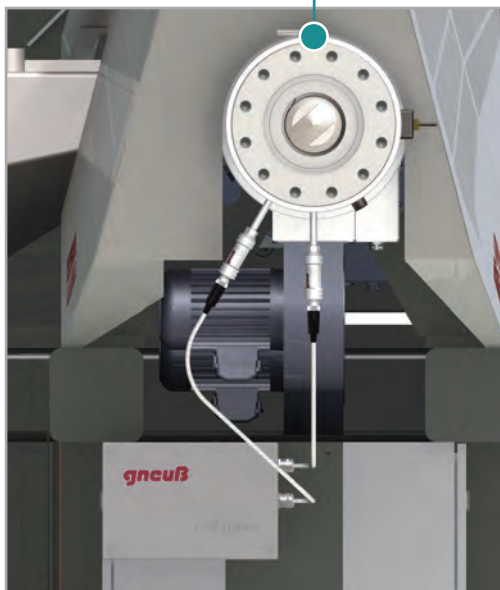
With the Gneuss safety system EPM, the use of stretch bolts, fail safe components, rupture discs or movement sensors can be avoided.

Extruders, melt pumps or components which are under pressure can be protected against excess

pressure by the EPM safety system, with a duplicated and monitored pressure measurement.

The safety-relevant components of the monitoring system conform to EN ISO 13849-1, with a performance level of "c".

In addition to the pressure monitoring / cut out function, the pressure monitoring system can be augmented with additional safety features such as emergency stop or protection monitoring.



Gneuss Solution: Safety System EPM

- Designed according to EN1114-1
- Two redundant sensors 4...20 mA, to which the same pressure is applied
- Two safety-related analogue inputs
- Self-monitoring
- Two safety-related relay outputs, the emergency stop of the unit
- 4...20 mA signal for pressure evaluation
- Optional Bus interface

TF-CX SERIES TEMPERATURE SENSOR

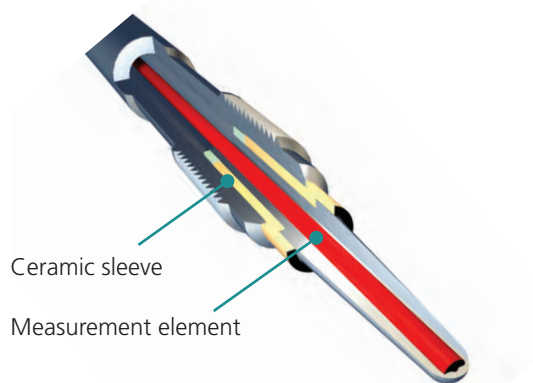
with Ceramic Isolation

The Gneuss CX Series Temperature Sensors are specially designed for precise temperature measurement of the melt stream. Their resulting high accuracy is due to the incorporation of the advanced G-Isolate ceramic insulation surrounding the entire measuring element. Commonly influenced by the barrel temperature, the CX series probes with G-Isolate guarantee an accurate reading, independent of the flange or tool location. The design of the CX exceeds the recommended guidelines of the Plastics and Rubber trade association according to EUROMAP 31.

- Measuring tip isolated with high-performance ceramic
- Highly precise temperature measurement
- Plug connections with goldplated contacts
- Extremely robust conical measuring element (ROC Rheologically Optimized Conical Tip)
- Applications up to 500 °C (932 °F) media temperature
- 100% market compatible

Ceramic insulated measurement tip

The melt temperature sensors with thermally insulated measurement tip provide the user with a precise and meaningful measurement. Distortion of the measurement value by external or internal heat influences is minimized. The sensor with ceramic insulated measurement tip is therefore particularly recommended for use with thermally sensitive materials due to the authentic measurements which it provides.



Configuration options

- Thermocouple Type J, L, K or RTD
- 1/2" 20 UNF or M 18 x 1,5 process connection
- Special materials for measuring tip (abrasive or corrosive materials)
- Available as transmitter with 0...10 V or 4...20 mA
- Amplifier for Ex-areas (4...20 mA) with BUZ head
- Measuring tip length available from 0 mm (0 inch) (flush) to 25 mm (1 inch)
- G-Isolate ceramic sleeve (illustration)

Product variations (examples)



EX-version

4...20 mA Transmitter BUZ head



Cable protection option

Flexible component with G-Armor



Special design TF

With fully ceramic sensor tip



Connector selection

Thermocouple or RTD

TF-MX SERIES TEMPERATURE SENSOR

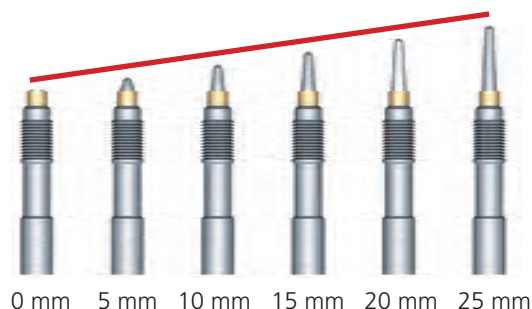
All-Metal Design

The Gneuss MX Series was developed to measure most melt temperature ranges for all types of plastics with high response. The TF-series temperature sensors are economical, of robust construction, and reliable. The rheological characteristics of most plastic materials were considered during the design process of the Gneuss ROC (Rheologically Optimized Conical) measuring tip, therefore highly viscous media are measured with maximum adhesion. Major advantages regarding the lifespan and reliability of this sensor type in comparison to sword sensors are ensured due to this installation configuration.

- Rheologically optimized conical tip (ROC)
- Robust metal construction
- Special materials for measuring tip
- Plug connections with goldplated contacts
- Applications up to 500°C (932°F) media temperature
- 100% market compatible
- Maximum melt pressure 2.000 bar (29,000 psi)

Measuring tip length

The measuring tip length is selected according to the polymer melt viscosity and melt channel diameter at the point where the instrument is located. The length can be selected in 5mm (0.2 inch) steps from 0 mm (0 inch) (flush) to 25 mm (1 inch). The standard design is suitable for melt temperatures of up to 400 °C (1,000 °F), the special Hastelloy design (see above) up to 500 °C (932 °F). All the tip lengths are available with thermocouples (Fe-CuNi type J or L, NiCr-Ni type K) or resistance sensors PT 100 (2-, 3- or 4- wire).



Configuration options

- Thermocouple Type J, L, K or RTD
- 1/2" 20 UNF or M 18 x 1,5 process connection
- Special materials for measuring tip (abrasive or corrosive materials)
- Available as transmitter with 0...10 V or 4...20 mA
- Amplifier for ex-areas (4...20 mA) with BUZ head
- Measuring tip length available from 0 mm (0 inch) (flush) to 25 mm (1 inch)

Product variations (examples)



Special design

AlloyC4 measuring tip



Cable protection option

Flexible component with G-Armor



Connector selection

With cable exit and thermocouple plug

CUSTOM-MADE DESIGNS

Sensors play a central role in the plastics processing industry to guarantee a high product quality. In difficult applications, operator-friendly, robust and exact measuring sensors are a prerequisite.

Food processing

Sensors for the food industry and the animal food industry must fulfil strict requirements. The equipment is regularly washed and therefore the sensors must be protected against the ingress of water. Standard sensors are prone to failure due to wet electronic components.



Gneuss has developed a new, special design of sensor in response to these challenges.

Thanks to special manufacturing techniques, these new sensors are perfectly suited for these applications.

Custom-made sensors are characterised by the typical Gneuss advantages:

- Short delivery lead times, even for made-to-order designs.
- Accuracy: < 0,5 % from max. scale value (standard)
- Compatible with practically all conventional sensors
- NTX™ Technology – all sensors are mercury free (standard)
- Excellent value for money
- Lower temperature drift than conventional, mercury based systems
- One- piece shaft, made in Germany
- Special diaphragm design for high temperatures and aggressive media
- Pre-calibrated prior to despatch (200° C)
- Safety system EPM for continuous pressure self-monitoring (maximum pressure safety cut out) according to EN1114-1

Wood Plastic Composite Processing

The processing of WPC (Wood Plastic Composites) in the extrusion process necessitates a high resistance of the pressure transducers. The mixture of wood (natural or recycled) and polymers such as PE, PP or PVC leads to a high viscosity and abrasiveness, factors which in turn often result in mechanical defects of the sensor membrane after a short time. In many cases, the membrane is more or less ground off by the abrasive melt, so that the sensor does not function any more.

Gneuss has developed a special technology for the transducer diaphragm, which offers far longer service life than conventional sensors.



HART Communication

The explosion-proof pressure transducers type DAIX and the temperature sensors are also available with the HART communication system and 4...20 mA standard, to meet the requirements of the plastics and chemical industries

Custom-made design

If requested by our customers, we provide individual solutions, which are tailored to specific applications, special process conditions or difficult places of installation.

We offer pressure transducers with high-resistance Heavy-Duty Design to cope with very difficult process conditions with short excess pressures and pressure peaks or not molten components in the material.



DIGITAL INDICATOR / DISPLAY UNITS

The latest generation of Gneuss displays and signal amplifiers register the actual melt pressure and or temperature measurements. The DMV and TMV ranges are characterized by their ruggedness and longevity. The configuration and operation of the sensors is achieved by use of only 5 keys, making the units extremely user-friendly. A password protects the instrument from unintentional operation or adjustment.

A standardized output signal for serial communication by means of an RSF 485 interface is available (option). The instruments are provided with up to 3 freely configurable limit values and can display different values (for example bar, PSI and kg/cm² or °C, °F and °K).

Series DMV

- 1 mV/V...4 mV/V input sensitivity
- Automatic measuring value calibration
- Limit value contacts
- Analogue output



Series TMV

- All common thermocouples and PT100 resistance temperature sensor
- Limit value contacts
- Analogue output

Technical Data

- 96.0 x 48.0 (1/8 DIN) cabinet cut out
- Power supply 100...230 VAC
- Up to 3 limit values
- Sensor / cable failure monitoring
- 5 digit display green or red (configurable)
- Serial interface RS 485 Modbus
- Peak value memory
- Operator panel IP 65
- Operating (ambient) temperature 0...50 °C
- 0...20 mA, 4...20 mA or 0...10 V
- Decimal point

ACCESSORIES



Ready made-up cables

The standard version of Gneuss connecting cables includes a cable socket on one side for connection to the sensor. The length of the cables is freely selectable. Special cable designs are made available according to the customer's wishes and for special requirements, e.g. high-temperature design.



Connector Cables for Pressure and Temperature

Gneuss connector cables are high quality, robust, and incorporate reliable plug construction. Standard features are high performance cable grade, gold contacts, electromagnetic compatibility (EMC), and secure locking technology. 6 pin, 8 pin and conduit connections are available.



Insert Bushing Adaptors

Insert bushing adaptors allow the installation of a 1/2 20" UNF sensor in existing M 18 hole locations. These adaptors allow flexibility and increased availability of sensors necessary for your installation. There is no need for special tools, where a standard threadcutting tool M 24 or M 16 is sufficient to make the drillings.



G-Kits

The Gneuss G-Kits offer a measurement solution to include everything required in a simple package complete and more economical. Each G-Kit includes a melt pressure transducer, connecting cable, and Gneuss DMV 4000 pressure indicator. Available kit variations are G-Ready, G-Starter, and GTP kits, offering you a solution whether you are replacing an existing or beginning with a new installation.

Bore/Cleaning Kits, Bushing Fitting Tool, Rupture Discs, Thread Lubricant



ALWAYS SOMEWHERE NEAR YOU

Our Locations

Based in Bad Oeynhausen, Germany, Gneuss is committed to the expectations of products "made in Germany" while serving our customers world-wide. A technology center for processing technical trials and development work is available at Gneuss'

headquarters in Bad Oeynhausen. Further pilot lines are also available for trials at our subsidiary, Gneuss Inc. in the USA and at our cooperation partner, SysTech in Japan.



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