

The background features a collage of industrial components. At the top, there are several pressure gauges with white faces and black markings, some showing numbers like 30 and 40. A prominent feature is a cylindrical transmitter with a blue and white label that includes the text 'TRANSMITTER ST MA', '+VIN = POUT', and 'GND = POUT'. The transmitter has a serial number '11253200' and a website 'www.dionavima.com'. The overall color palette is a mix of warm oranges and reds, and cool blues and greens.

NUOVA FINMA

Measuring instruments

production program



production program

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electronic pressure transmitters

Digital Multifunctional Instruments

A piezoresistive sensor supplies a stable pressure signal which is processed through a micro-processor with high accuracy. The high graphic resolution display shows many functions such as the range adjustment up to 1:5, the peak values and temperature measurements, the choice for the unit of measurement and the language choice. Moreover two alarm signals are available through the configurable thresholds. In this way one single instrument is able to perform as a pressure gauge, as a pressure electronic transmitter and as a pressure switch.



SDM 18

INTRINSIC SAFETY

During regular working and in case of failures, any spark or temperature increase could occur and cause any explosive atmosphere blast.

In order to reach this security level, the Nuova Fima intrinsically safe transmitters are built in conformity with the directive Atex 94/9/CE and normatives EN 50014, EN 50020, EN 50284, IEC 61241-0 and IEC 61241-11.

The Official Body CESI of Milan certified the homologation, EEx ia IIC T6 and Ex iaD 20 T85°C.

Due to its exceptional properties, Sulphur Hexafluoride (SF6) is used mainly as an electrical insulator for sectioning devices, switched, and high voltage transformers. However, the operating safety of these devices depends on the density of the gas, which normal pressure and temperature measuring instruments are not able to monitor. Nuova Fima has designed specific electronic instruments fitted with microprocessors that use suitable software in order to accurately monitor the density of the SF6 gas.



ST SF6



**ST 18
SX 18**



**MT 18 DS100
MX 18 DS100**



**ST LV
SX LV**






**ST 09
SX 09**








**ST MA
SX MA**

technical Specifications

Models	SDM 18	ST BRAVO	STSF6
Measuring principle	piezoresistive sensor	ceramic sensor	ceramic sensor
Ranges	0...0,4/0...1600 bar	0/1...0/400 bar r	0...10/0...80 gr/litre
Accuracy	≥0,1% of range	≥0,5% of range	± 3% of range
Protection degree	IP 65	IP65	IP 67
Power supply	10...30 Vdc	up to: 8...30 Vdc	10...30 Vdc
Output signal	4...20 mA (3 wires)	4...20 mA 0...5/0...10 V	4...20 mA
Mounting			
Main features	<ul style="list-style-type: none"> • Pressure gauge • Pressure transmitter • Pressure switch 	<ul style="list-style-type: none"> • General use 	<ul style="list-style-type: none"> • SF6 gas density transmitter



Models (1)	MX18 DS100	SX 18	SX 09	SX LV	SX MA
ATEX category	1/2GD	1GD, 1/2GD	1GD, 1/2GD	1G	1GD, 1/2GD
Measuring principle	Bourdon tube and ceramic or AISI316 st. thin film sensor	ceramic sensor	piezoresistive sensor	ceramic or piezoresistive sensor	ceramic or piezoresistive sensor
Ranges	0...0,6/0...1600 bar r	0...1/0...600 bar r	0...0,1/0...60 bar r	0...0,1/0...25 bar r	0...1/0...600 bar r
Accuracy	0,5% of FSV	≥0,25% of range	≥0,25% of range	≥0,25% of range	≥0,5% of range
Protection degree	IP 55...65	IP 65...68	IP 65	can be immersed	IP 65...68
Power supply	8...30 Vdc	8...30 Vdc	8...30 Vdc	8...30 Vdc	8...30 Vdc
Output signals	4...20 mA	4...20 mA	4...20 mA	4...20 mA	4...20 mA
Mounting					
Main features	<ul style="list-style-type: none"> • Intrinsic safety Ex ia IIC T6 - Ex iaD 20 T85°C • Independent sensor and elastomer 	<ul style="list-style-type: none"> • Intrinsic safety Ex ia IIC T6 - Ex iaD 20 T85°C 	<ul style="list-style-type: none"> • Intrinsic safety Ex ia IIC T6 - Ex iaD 20 T85°C 	<ul style="list-style-type: none"> • Intrinsic safety Ex ia IIC T6 - Ex iaD 20 T85°C • Level sensor 	<ul style="list-style-type: none"> • Intrinsic safety Ex ia IIC T6 - Ex iaD 20 T85°C • Faced diaphragm sensor

(1) the output signals in the instruments which are not ATEX certificated, include 0...5 V and 0...10 V as well.

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NUOVA FIMA

Pressure gauges

AISI 316 L wetted parts

Pressure gauges for high overpressures

From now on, there is no need to mount expensive and bulky accessories on pressure gauges in order to be able to use them in the presence of high pressure peaks. Nuova Fima has developed the instruments of the Heavy Work series: 01.19 and 01.21, which feature a special technology of construction enabling them to meet the heaviest working conditions.



MGS21 DS100

- They can be submitted to temporary overpressures four times the full scale value, without changes in precision and linearity.
- They can work at 100% of the full scale value with static pressures and at 90% with pulsating pressures.
- They fully comply with the safety normatives of the EN837.1 standards.
- They are both available in DS100 and 150.
- They can be filled with liquid, glycerine or other products, to improve the reading stability when they are used in presence of vibrations.



RELIABILITY

Rugged construction to guarantee reliability even under extreme operating conditions. Excellent vibration resistance enhanced with the shape of the Bourdon tube inserted and welded in the socket. Excellent traceability assisted by the identification of each elastic element with the corresponding range, the Nuova Fima logo and the production batch number.



SAFETY

The Solid-Front execution, in compliance with the "S3" safety methods of the EN837.1/2 standards, is provided with a solid wall placed in front of the pressure gauge and a blow out device in the back, which, in case of accidental leaks or rupture of the elastic element, protect the operator in the immediate surroundings.



MGS18 DS40



MGS18 DS50



MGS18 DS63



MGS18 DS100-150



MGS44 DS100



MGS19 DS150



MGS20 DS63



MGS20 DS100



MGS20 DS150



MGS30 DS125

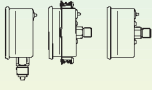
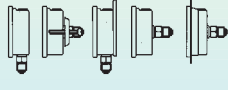
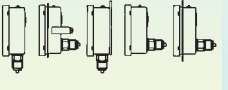
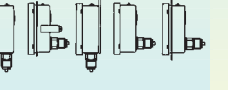
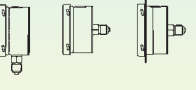


MGS30 EXTRA DS125

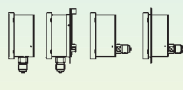
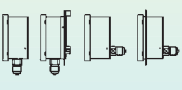
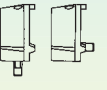
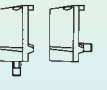
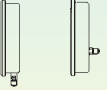
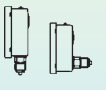


MGS8 DS250

technical Specifications

Models	MGS18 DS40-50	MGS18 DS63	MGS18 DS100-150	MGS19 DS100-150	MGS20 DS63
Atex Category			2GD	2GD	
Ranges	0/2,5...0/40 bar	0/1...0/1000 bar ... and vacuum	0/0,6...0/1600 bar ... and vacuum	0/1...0/1000 bar ... and vacuum	0/1...0/1000 bar ... and vacuum
Working pressure (referred to f.s.v.)	max 75%	max 75%	max 100%	max 100%	max 75%
Accuracy (as per EN 837-1)	1,6	1,6	1,0...1,6	1,0	1,6
Protection degree	IP 55...67	IP 55...67	IP 55...67	IP 55...67	IP 55...67
Mounting					
Main features	<ul style="list-style-type: none"> • Can be filled with dampening liquid 	<ul style="list-style-type: none"> • Can be filled with dampening liquid 	<ul style="list-style-type: none"> • Can be filled with dampening liquid; • Complies with EN837-1; • ATEX constructional safety type "C" 	<ul style="list-style-type: none"> • Overpressure up to 4 times the full scale value • Complies with EN837-1; • ATEX constructional safety type "C" 	<ul style="list-style-type: none"> • Can be filled with dampening liquid • Complies with the EN837-1 standard • Solid-Front execution



Models	MGS20 DS100-150	MGS21 DS100-150	MGS30 DS125	MGS30 EXTRA DS125	MGS8 DS250	MGS44 DS100
Atex Category	2GD	2GD				2GD IIB
Ranges	0/0,6...0/1600 bar ... and vacuum	0/1...0/1000 bar ... and vacuum	0/15...0/30000 psi ... and vacuum	0/30...0/15000 psi ... and vacuum	0/1...0/1000 bar	0/1 ... 0/400 bar
Working pressure (referred to f.s.v.)	max 100%	max 100%	max 100%	max 75%	max 100%	max 75%
Accuracy	Up to 0,6 as per EN837-1	1,0 as per EN837-1	Up to 2A grade as per ASME B40.1	2A grade as per ASME B40.1	Up to 0,6 as per EN837-1	1,6 as per EN837-1
Protection degree	IP 55...67	IP 55...67	IP 55...67	IP 55	IP 55	IP 67
Mounting						
Main features	<ul style="list-style-type: none"> • Solid-front execution • Can be filled with dampening liquid; • Complies with EN837-1; • ATEX constructional safety type "C" 	<ul style="list-style-type: none"> • Overpressure up to 4 times the full scale value • Solid-front execution • Can be filled with dampening liquid; • Complies with EN837-1; • ATEX constructional safety type "C" 	<ul style="list-style-type: none"> • Solid-front execution plastic turret case • Can be filled with dampening liquid; • Complies with ASME B40.1 standard 	<ul style="list-style-type: none"> • Solid-front execution plastic turret case • Dampened movement 	<ul style="list-style-type: none"> • Aluminium case • St.St. movement • AISI316L wetted parts 	<ul style="list-style-type: none"> • Compact and economic model

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NUOVA FIMA

Pressure gauges

phosphor bronze/brass wetted parts

They are designed for measuring pressures ranges from 0/1 to 0/1000 bar as well as negative pressures. They can be used with liquids or gases that do not corrode the copper alloys, do not have a high viscosity and do not crystallise. The filling of the case with dampening liquid allows to use it also in the presence of vibrations or pulsating pressures.



MGS10 DS63



MS1 DS40



MS1 DS50



MS1 DS150



MS2 DS40-50-63



MS3 DS40-50-63



MS7 DS40-50-63



MS4 DS100


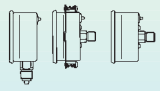
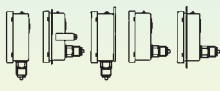
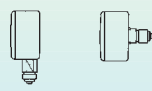
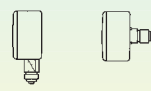


MGS10 DS50

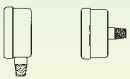
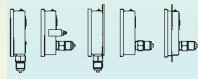
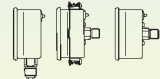
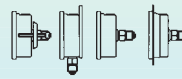
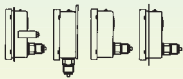


MGS10 DS100

technical Specifications

Models	MS1 DS40	MS1 DS50	MS1 DS150	MS2 DS40-50-63	MS3 DS40-50-63
Ranges	0/2,5...0/40 bar	0/2,5...0/400 bar	0/1...0/1000 bar ... and vacuum	-1/0...0/250 bar	-1/0...0/250 bar
Working pressure (referring to f.s.v.)	max 75%	max 75%	max 75%	max 75%	max 75%
Accuracy (as per EN 837-1)	1,6	1,6	1,6	2,5	2,5
Protection degree	IP 40	IP 40	IP 44		
Mounting					
Main features	• St. st. case	• St. st. case	• Complies with the EN837-1 standard	• ABS case	• Painted steel case



Models	MS7 DS40-50-63	MS4 DS100	MGS10 DS50	MGS10 DS63	MGS10 DS100
Ranges	-1/0...0/250 bar	0/1...0/1000 bar ... and vacuum	0/2,5...0/40 bar	0/1...0/600 bar ... and vacuum	0/1...0/1000 bar ... and vacuum
Working pressure (referring to f.s.v.)	max 75%	max 75%	max 75%	max 75%	max 100%
Accuracy (as per EN 837-1)	2,5	1,6	1,6	1,6	1,0
Protection degree		IP 67	IP 67	IP 67	IP 55...IP 67
Mounting					
Main features	• Painted steel case and ring	• Compact and economic model • Complies with the EN837-1 standard	• Can be filled with dampening liquid	• Can be filled with dampening liquid	• Can be filled with dampening liquid • Complies with the EN837-1 standard

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NUOVA FIMA

instruments

with electric and electronic contacts

They are used to control the electrical operations on compressors, pumps, presses, hydraulic and pneumatic circuits, air-pressured circuits, chemical and petrochemical plants. The contacts open and close the circuit according to the position of the indicating pointer. They are available: with SPDT microswitch; with single or double electric contacts; with single or double inductive contacts, intrinsically safe.



MCE20 DS150



TCE DS100



MCE18 DS100



MGS72-74 DS100



MN14/10-18 DS100-150



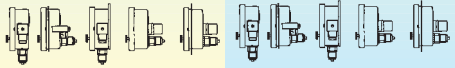
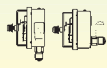
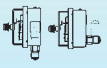
TM8 DS100-150



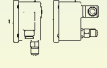
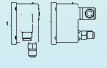
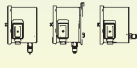
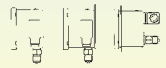
MCE10-18/SF6 DS100

Due to its exceptional properties, Sulphur Hexafluoride (SF6) is used mainly as an electrical insulator for sectioning devices, switched, and high voltage transformers. However, the operating safety of these devices depends on the density of the gas, which normal pressure and temperature measuring instruments are not able to monitor. Nuova Fima has designed specific mechanical instruments that have electrical contacts that are able to activate an alarm signal, as soon as the density of the gas reduces their insulating capacity.

technical Specifications

Models	MG572 DS100	MG574 DS100	MN14/10 DS100-150	MN14/18 DS100-150
Wetted parts	brass/phosphor bronze or brass/AISI316L	AISI316L	copper alloy / AISI316L	AISI316L
Ranges	0/1...0/600 bar and vacuum	0/1...0/600 bar and vacuum	0...1,6/0...100 bar	0...1/0...1600 bar and vacuum
Electric intervention	SPDT microswitch	SPDT microswitch	sliding electrical contacts	sliding electrical contacts
Accuracy (as per EN 837-1)	2,5	2,5	1,0	1,0
Protection degree	IP 44	IP 44	IP 44...55	IP 44...55
Mounting				

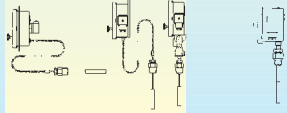


Models	MCE10 DS100	MCE18 DS100	MCE20 DS150	MCE10/SF6 DS100	MCE18/SF6 DS100
Wetted parts	brass/phosphor bronze AISI316L	AISI316L	AISI316L	brass/phosphor bronze AISI316L st.st.	AISI316L
Ranges	0/1...0/1000 bar	0/1...0/1600 bar	0/1...0/1600 bar	-1...+0,6/-1...+24 bar	-1...+0,6/-1...+24 bar
Electric intervention	built-in sliding electrical contacts	built-in electrical contacts, sliding or inductives	built-in sliding electrical contacts	built-in sliding electrical contacts	built-in electrical contacts, sliding or inductives
Accuracy	1,6	1,6...1,0	1,6...1,0	1,0...2,5	1,0...2,5
Protection degree	IP 55...67	IP 55...67	IP 55...67	IP 54...65	IP 54...65
Mounting				- SF6 gas density monitoring	- SF6 gas density monitoring
Main features	 <ul style="list-style-type: none"> • Can be filled with dampening liquid 	 <ul style="list-style-type: none"> • Can be filled with dampening liquid 	 <ul style="list-style-type: none"> • Can be filled with dampening liquid • Solid-Front execution 		

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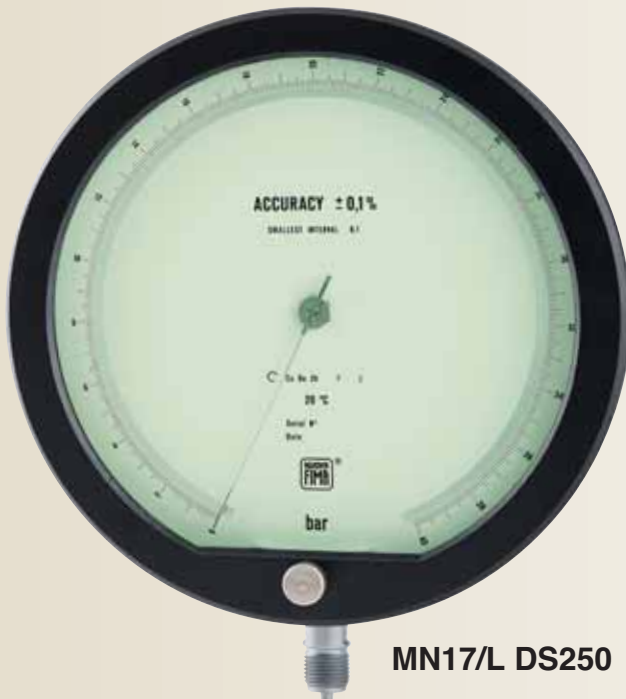
Models	TM8 DS100-150	TCE DS100
Wetted parts	AISI316L st.st.	AISI316L st.st.
Ranges	-200...+100/100...500 °C	-200...+100/100...500 °C
Electric intervention	SPDT microswitch	built-in electrical contacts, sliding or inductives
Accuracy	2,5 as per EN13190-DIN16085	1,0 as per EN13190-DIN16085
Protection degree	IP 44	IP 55
Mounting		
Main features		

NUOVA FIMA

Laboratory Pressure gauges

NUOVA FIMA

These instruments are designed to be used as test gauges and in other applications where precision and repeatability are very important features. They may be provided with a Nuova Fima calibration certificate as well as a calibration certificate issued by an authorised laboratory from S.I.T. (Servizio Italiano Taratura, Italian Calibration Service).



MN17/L DS250



MN15 DS150



MN16 DS150



MN17 DS150



MN25 DS150

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CE

Models	MN15 DS150	MN16 DS150	MN17 DS150	MN25 DS150	MN17/L DS250
Wetted parts	AISI316L	AISI316L	AISI316L/ beryllium copper	AISI316L	AISI316L/ beryllium copper
Ranges	0...0,6/0...600 bar and vacuum	0...0,6/0...1000 bar and vacuum	0...0,6/0...600 bar and vacuum	0...1/0...160 bar	0...1/0...1600 bar
Accuracy (as per EN 837-1)	0,6	0,6	0,25	0,25	0,1
Protection degree	IP 55	IP 55	IP 55	IP 55	IP 44
Mounting					
Main features	<ul style="list-style-type: none"> Complies with the EN837-1 standard Anti-parallax mirror dial 	<ul style="list-style-type: none"> Complies with the EN837-1 standard Solid-Front execution Anti-parallax mirror dial 	<ul style="list-style-type: none"> Complies with the EN837-1 standard Solid-Front execution Anti-parallax mirror dial 	<ul style="list-style-type: none"> Complies with the EN837-1 standard Solid front execution Anti-parallax mirror dial 	<ul style="list-style-type: none"> Aluminium case Anti-parallax mirror dial

instruments

for chemical and petrochemical industry

NUOVA FIMA



**MGS40 DS
100-150**



**MGS36
DS100**



**MGS60
DS125**

PRESSURE GAUGES FOR OIL REFINING AND EXTRACTION

These instruments are built to resist to the most severe working conditions in the atmosphere with H₂S. They perform wetted parts in Monel 400, so they are in conformity with the two following Nace directives:

- NACE MR 01.03 issued for the refining sector and the process concerned connections;
- NACE MR 01.75 (ISO 15156) issued for the Sour Oilfield Environments sector with H₂S which is oil extraction, oil transportation and oil stocking.

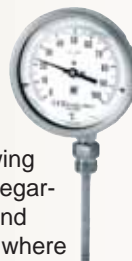
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ATEX VERSIONS

Nuova Fima is engaged in optimising a complete range of products built in conformity with the Health and Security features following the directive Atex 94/9/CE regarding their use in chemical and petrochemical industry and where safe installations are a must against explosion risk even in case of malfunctioning.



Bourdon tube pressure gauge mod. MGS 18-19-20-21-36-40, intrinsically safe inductive contacts

pressure gauges mod.MCE, differential pressure gauge with double diaphragm mod. MD13-15-17, diaphragm pressure gauge mod. MN12, explosion-proof pressure switches 3.4 serie, bi-metal thermometers mod. TB8, inert gaz thermometers mod. TG8, intrinsically safe sensors SX-MX series. These instruments concern the chemical and petrochemical industry.

DIAPHRAGM SEALS

The fluid diaphragm seals MGS/5 and MGS9/3B built with special materials are especially designed for the chemical and petrochemical industry satisfying any pressure, temperature and process connections dimensions demand.



As for the Urea contact versions the MGS9/SA459-460 pressure switches are available. They are built strictly following the

anticorrosion criteria and they become well-known all over the world for their reliability and high level performance developed during the years.



Models	MGS36 DS100-150	MGS40 DS 100-150	MGS60 DS125
ATEX category	2GD	2GD	
Wetted parts	Monel 400	Monel 400	Monel 400
Ranges	0...1/0...600 bar and vacuum	0...1/0...600 bar and vacuum	0...1/0...600 bar and vacuum
Accuracy	1A grade as per ASME B40.1	1A grade as per ASME B40.1	1,0 as per EN837-1
Protection degree	IP 55...67	IP 55...67	IP 55...67
Mounting			
Main features	<ul style="list-style-type: none"> • ATEX constructional safety type "C" 	<ul style="list-style-type: none"> • ATEX constructional safety type "C" • Solid front execution 	<ul style="list-style-type: none"> • Solid-Front execution plastic turret case

Instruments

for the food industry

They are designed to be used in sanitary applications, food and pharmaceutical industries in compliance with 74-03 standards of the 3A association (Sanitary Standards Symbol Administrative Council). The absence of interstices and the mirror finishing of the components ensure the best hygiene. The process connection consists in a diaphragm seal, integrally mounted on the pressure gauge.



SP DS100



74-03

Autorizzazione NO. 597



OM DS100



SP DS63



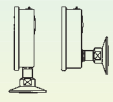


**MT OM DS100
MX OM DS100**

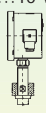

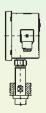



**ST SA
SX SA**

technical Specifications

Models	OM DS100	SP DS63	SP DS100
ATEX category	2GD		
Wetted parts	AISI316L	AISI316L	AISI316L
Ranges	0...160/0...1600 bar	0...15/0...600 psi	0...15/0...600 psi
Accuracy	1,6	1,6	1,6
Protection degree	IP 65	IP 65	IP 65
Mounting			
Main features	<ul style="list-style-type: none"> • ATEX constructional safety type "C" • Used on homogenizers 	<ul style="list-style-type: none"> • ISO 2852 process connections: 1"1/2; 2" 	<ul style="list-style-type: none"> • ISO 2852 process connections: 1"1/2; 2"



Models	MT OM DS100	ST SA	MT OM DS100	SX SA
ATEX category			1GD, 1/2GD	1GD, 1/2GD
Measuring principle	Bourdon tube and ceramic or AISI 316 st. thin film sensor	ceramic or piezoresistive sensor	Bourdon tube and ceramic or AISI 316 st. thin film sensor	ceramic or piezoresistive sensor
Ranges	0...160/0...1600 bar r	0...0,6/0...40 bar r	0...160/0...1600 bar r	0...0,6/0...40 bar r
Accuracy	1,0% of FSV	≥0,5% of range	1,0% of FSV	≥0,5% of range
Protection degree	IP 65	IP 65...68	IP 65	IP 65...68
Power supply	Up to : 8...30 Vdc	Up to : 8...30 Vdc	8...30 Vdc	8...30 Vdc
Output signal	4...20 mA 0...5/0...10 V	4...20 mA 0...5/0...10 V	4...20 mA	4...20 mA
Mounting				
Main features	<ul style="list-style-type: none"> • Independent sensor and elastic element • Can be filled with dampening liquid 	<ul style="list-style-type: none"> • Process connections as per DIN 11851, SMS and ISO 2852 	<ul style="list-style-type: none"> • Intrinsic safety Ex ia IIC T6 - Ex iaD 20 T85°C • Independent sensor and elastic element • Can be filled with dampening liquid 	<ul style="list-style-type: none"> • Intrinsic safety Ex ia IIC T6 - Ex iaD 20 T85°C • Process connections as per DIN 11851, SMS and ISO 2852

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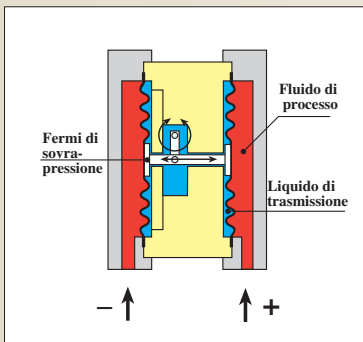
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Differential Pressure gauges

These instruments are used to check differential pressures of gaseous liquids which do not have high viscosity and do not crystallize. In presence of high temperature, high viscosity and corrosive process fluid or which can crystallize these instruments can be fitted with remote mounting diaphragm seals. They are mainly used to measure liquids level contained in pressurized tanks, big filters obstructions and fluids velocity inside pipes.



MD15 DS100-150



DIFFERENTIAL PRESSURE GAUGES

The double diaphragm measuring cell is characterised by a system of limitstops that closes and blocks the passage obtaining in this way a liquid bed on which stop the measuring element in case of one-side overpressure.



MD14 DS100-150



MD16 DS100-150

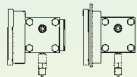
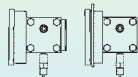
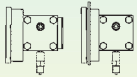
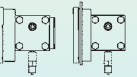
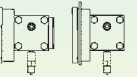



MD17 DS100-150



MD18 DS100

technical Specifications

Models	MD13 DS150	MD14 DS100-150	MD15 DS100-150	MD16 DS100-150	MD17 DS150	MD18 DS100
ATEX category	2DG		2DG	2GD	2DG	
Measuring element	diaphragm	Bellows	Double diaphragm	Double diaphragm	Double diaphragm	Double bourdon tube
Wetted parts	AISI316L	AISI316L	AISI316L or Monel400	AISI316L or Monel400	AISI316L or Monel400	AISI316L
Ranges	0...0,6/0...25 bar	0...10/0...160 mbar	0...0,1/0...25 bar	0...0,6/0...10 bar	0...1/0...10 bar	0...0,4/0...10 bar
Accuracy	1,6	1,6	1,6	2,5	1,6	1,6
Protection degree	IP 55...IP 67	IP 55...67	IP 55...67	IP 55...67	IP 55...67	IP 55...67
Mounting						
Main features	<ul style="list-style-type: none"> • High static pressure 100 bar • ATEX constructional safety type "C" • Scale amplitude 180° 	<ul style="list-style-type: none"> • Static pressure 25 bar • Scale amplitude 180° • Can be filled with dampening liquid • Electric contacts 	<ul style="list-style-type: none"> • ATEX constructional safety type "C" • Static pressure 200 bar • Can be filled with dampening liquid • Electric contacts 	<ul style="list-style-type: none"> • Static pressure 100 bar • Can be filled with dampening liquid • Electric contacts 	<ul style="list-style-type: none"> • ATEX constructional safety type "C" • Static pressure 400 bar • Can be filled with dampening liquid • Electric contacts 	<ul style="list-style-type: none"> • Available with AISI316 case and ring • Can be filled with dampening liquid



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Low Pressure gauges

Pressure gauges for absolute pressure

The pressure gauges for absolute pressure are used when the pressure to be measured must not be influenced by the variation of the atmospheric pressure. The fluid pressure to be measured is compared to a reference pressure that must be equal to absolute zero (absolute vacuum). In order to do this, the measuring element is isolated in a reference chamber, which is sealed and where absolute vacuum is created. According to the type of application, they are available with threaded or flanged connections and within the ranges from 0...60 mbar to 0...1 bar absolute. They are available in DS 100 and DS 150 and can be supplied with electric contacts.



MN12/18/ABS DS100 -150



MN9/N DS63



MN9/N DS100



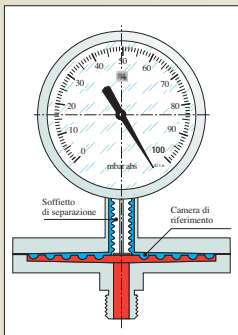
MN9/18 DS100-150



MN12 DS100-150

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Operating diaphragm of the pressure gauge for absolute pressures MN12/18 ABS

Models	MN9/N DS63	MN9/N DS100	MN9/18 DS100-150	MN12 DS100-150	MN12/18/ABS DS100
ATEX category				2GD	
Measuring element	capsule	capsule	capsule	diaphragm	diaphragm
Wetted parts	brass/phosphor bronze	st.st./phosphor bronze	AISI316	AISI316L	AISI316L
Ranges	0/60...0/600 mbar ... and vacuum	0/25...0/600 mbar ... and vacuum	0...2,5/0...600 mbar	0/25 mbar...0/25 bar ... and vacuum	0/60...0/1000 mbar Abs
Accuracy (as per EN 837-1)	1,6	1,6	1,6...1,0	1,6	1,6...1,0
Protection degree	IP 55	IP 55	IP 55	IP 55...IP 67	IP 65
Mounting					
Main features				<ul style="list-style-type: none"> • Can be filled with dampening liquid for ranges 0.6 bar • Available with wetted parts in special material as: Hastelloy C, Hastelloy B, Monel 400, PTFE, etc. • Threaded and flanged process connections • ATEX constructional safety type "C" 	

High Pressure gauges

They are mainly used on high pressure water jet technology like water cutting machines, hydro blasting pumps and turbines, hydrodemolition. In case of leaks or break of the elastic element, the operator is protected by a solid separating wall placed on the front of the instrument and by the blow out back.



MGS22 DS150



MGS32 DS125





MGS22 DS100

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Modello	MGS22 DS100-150	MGS32 DS125
Materiale parti bagnate	duplex	duplex
Campi scala	0...2500, 0...3000, 0...4000 bar	0...2500, 0...3000, 0...4000 bar
Classe di precisione	1 secondo EN 837	grado 1A secondo ASME B40.1
Grado di protezione	IP 55...67	IP 55...67
Tipi di montaggio		



SAFETY.

The Solid-Front execution, in compliance with the "S3" safety methods of the EN837.1/2 standards, is provided with a solid wall placed in front of the pressure gauge and a blow out device in the back, which, in case of accidental leaks or rupture of the elastic element, protect the operator in the immediate surroundings.

Pressure switches

Flame-proof pressure switches

Should the dangerous air-gas mixture come in contact with the source of energy, the explosion produced would be "confined" inside the case, designed in such a way as to resist to the internal pressure, preventing in this way its propagation in the atmosphere surrounding the case.

The Nuova Fima flame-proof pressure switches are produced in compliance with the EN 60079-0, EN 60079-1, EN 61241-0, EN 61241-1 standards, obtaining the Ex d IIC T6 Ex tD A21 IP65 T85°C homologation issued by the CESI authorised laboratory of Milan.



3.40



3.10



3.25



3.20



3.27



3.30



3.28



3.48

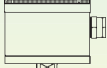
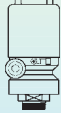
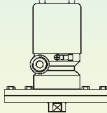
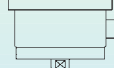


Compliance with the EN 60079-0, EN 60079-1, EN 61241-0, EN 61241-1 standards. Ex d IIC T6 Ex tD A21 IP65 T85°C homologation issued by the CESI authorised laboratory of Milan.


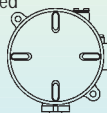
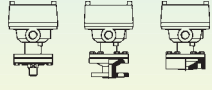



Declaration of conformity to the requirements of the Low Tension 73/23/EEC directive and further amendment 93/68/EEC.

technical Specifications

Models	3.10	3.20	3.25	3.27
Measuring element	diaphragm	diaphragm	diaphragm	diaphragm
Ranges	0/1...0/25 bar ... and vacuum	0/1...0/25 bar	0/40...0/600 mbar	0/6 mbar...0/160 bar ... and vacuum
Protection degree	IP 55	IP 55	IP 55	IP 65
Electrical specifications	N.1 microswitch (SPDT)	N.1 microswitch (SPDT)	N.1 microswitch (SPDT)	N.1 o 2 microswitches (SPDT)
Process connection	threaded	threaded	threaded	threaded
Mounting				
Main features	<ul style="list-style-type: none"> • Low cost 	<ul style="list-style-type: none"> • With fixed or adjustable differential microswitch 		<ul style="list-style-type: none"> • With fixed or adjustable differential microswitch • Available with flanged process connections • Stainless steel case



Models	3.28 - 3.29	3.30	3.40 - 3.45	3.48 - 3.49
ATEX category			2GD	2GD
Measuring element	diaphragm	Bourdon tube	diaphragm	diaphragm
Ranges	0/250 mbar...0/10 bar	0/10...0/600 bar	0/40 mbar...0/160 bar ... and vacuum	0/250 mbar...0/10 bar ... and vacuum
Protection degree	IP 65	IP 55	IP 65	IP 65
Electrical specifications	N.1 o 2 microswitches (SPDT)	N.1 o 2 microswitches (SPDT)	N.1 o 2 microswitches (SPDT)	N.1 o 2 microswitches (SPDT)
Process connection	threaded	threaded	threaded or flanged	threaded
Mounting				
Main features	<ul style="list-style-type: none"> • Differential pressure switch • With fixed or adjustable differential microswitch • Stainless steel case 	<ul style="list-style-type: none"> • With fixed or adjustable differential microswitch 	<ul style="list-style-type: none"> • Ex d IIC T6 Ex tD A21 IP65 • T85°C flame-proof execution • Available with flanged process connections • With fixed or adjustable differential microswitch 	<ul style="list-style-type: none"> • Ex d IIC T6 Ex tD A21 IP65 • T85°C flame-proof execution • Differential pressure switch • With fixed or adjustable differential microswitch • Static pressure from 4 to 25 bar

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Diaphragm seals

Diaphragm seals

In order to isolate the measuring element of pressure gauges, pressure switches and electronic pressure transmitters from corrosive, viscous and sedimentary process fluids, it is necessary to place in between a diaphragm seal, which must often be made of special high-strength materials.

In order to control the costs deriving from the utilization of special materials, Nuova Fima has developed a new series of diaphragm seals with flanged connection, in which special alloys are used only for the parts in contact with the process fluid.

They are available with the following flanged connections:

- DS25...50
- NP2.5...40 according to the UNI/DIN standards
- DS1/2"...2" NP150...600 according to ANSI B16.5



MGS9/4

and with the following materials:

- AISI316 + PTFE
- Monel 400
- Hastelloy C276
- Hastelloy B2
- Tantalum
- Incolloy 825
- Inconel 600



The Nuova Fima diaphragm seals are produced also in versions to be mounted on electronic pressure transmitters, maintaining the accuracy and reliability features during all the operating conditions.



Nuova Fima uses hundreds of diaphragms in different shapes, dimensions and materials to cover all the different requirements. They are available also in a gold-plated version > 25 µm



MGS9/1B



MGS9/1AS



MGS9/1A0



MGS9/111



MGS9/2B



MGS9/6WF



MGS9/3A0



MGS9/3B0



MGS9/6



MGS9/5



MGS9/MINI/A



MGS9/P



MGS9/SA



MGS9/AL

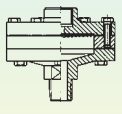
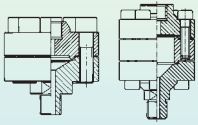
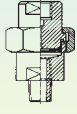

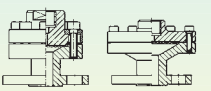





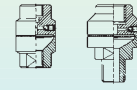

MGS9/R

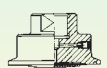
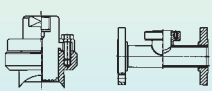





MGS9/367

technical Specifications

Models	MGS9/1B0-1BS	MGS9/1A0-1AS	MGS9/111	MGS9/6WF	MGS9/3A0-3B0
Ranges	0...0,10...40 bar ... and vacuum	0/60...0/600 bar	0/6...0/250 bar	0/1...0/160 bar ... and vacuum	0/1...0/250 bar ... and vacuum
Wetted parts	AISI316L and/or special materials	AISI316	AISI316	AISI316L and/or special materials	AISI316L and/or special materials
Process connection	threaded	threaded	threaded	threaded or flanged	flanged
Mounting					
Main features	<ul style="list-style-type: none"> • Can be dismantled for cleaning 		<ul style="list-style-type: none"> • Can be dismantled for cleaning 	<ul style="list-style-type: none"> • Can be dismantled for cleaning 	<ul style="list-style-type: none"> • Flanged connection with passing through holes • Available with PTFE coating

Models	MGS9/6	MGS9/5	MGS9/4	MGS9/MINI	MGS9/SA
Ranges	0/1...0/40 bar ... and vacuum	0...1/0...400 bar and vacuum	0/1...0/40 bar	0/1...0/400 bar ... and vacuum	0...1/0...40 bar
Wetted parts	AISI316L and/or special materials	AISI316L and/or special materials	AISI316L and/or special materials	AISI316	AISI316L
Process connection	flanged	flanged	flanged	threaded	DIN11581, SMS681, RJT/APV, IDF/ISS
Mounting					
Main features	<ul style="list-style-type: none"> • Available with PTFE coating 	<ul style="list-style-type: none"> • Flanged connection with passing through holes • Faced diaphragm 	<ul style="list-style-type: none"> • Flanged connection with passing through holes • Faced diaphragm • Economic execution for special materials • Available with PTFE coating 	<ul style="list-style-type: none"> • Compact and economic model 	<ul style="list-style-type: none"> • Food industry process connection

Models	MGS9/AL	MGS9/R	MGS9/367	MGS9/P	MGS9/2B
Ranges	0...1/0...40 bar	0/6...0/250 bar	0/40...0/400 bar	0...1/0...10 bar	1...0/0...160 bar
Wetted parts	AISI316	AISI316	AISI316L	PVC, PVDF, PP	AISI316L st.st and special materials
Process connection	ISO 2852	to be in-lined welded or flanged connections	threaded	threaded	threaded
Mounting					
Main features	<ul style="list-style-type: none"> • ISO 2852 connections 1*1/2; 2"; 2*1/2 		<ul style="list-style-type: none"> • Faced diaphragm with threaded connection 	<ul style="list-style-type: none"> • All plastic material 	<ul style="list-style-type: none"> • Detachable for cleaning • Continuous duty" execution

thermometers

Inert gas filled thermometers

Nuova Fima's inert gas thermometers can be used in every application due to the wide choice of ranges and mounting styles.

In case of accident, the inert gas used, nitrogen or helium, is not dangerous for the measuring process or for the environment. This is very important considering that every year a large quantity of products is damaged by substances like mercury, toluene, ethylene and Freon contained in temperature measuring instruments.



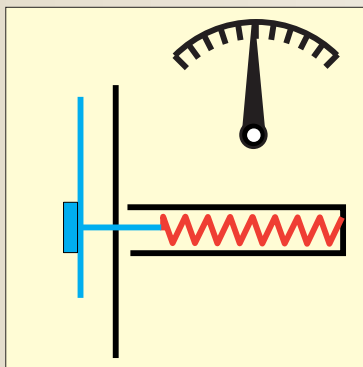
TG85X DS100



TG89X DS100

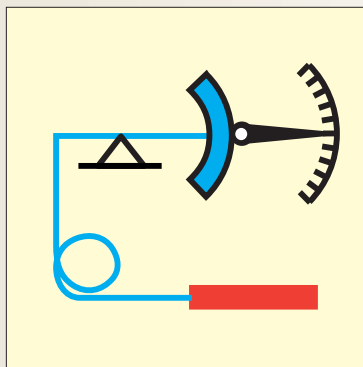


TA819 DS100



BIMETALLIC THERMOMETERS. OPERATING PRINCIPLE.

The bimetallic thermometers are made of a stainless steel pipe (bulb) containing a bimetallic helical spiral welded at one end to the bottom of the pipe and on the other to a small driving shaft connected to a pointer. Temperature variations deform the bimetal: this deformation is transmitted to the pointer on the dial due to the shaft rotation.



INERT GAS THERMOMETERS OPERATING PRINCIPLE.

The measuring system is pressurised with inert gas in such a way that the change of temperature causes the variation of the pressure contained in the system, detected as a shifting and transmitted to the pointer through the movement. Ambient temperature variations, which can influence the accuracy, are compensated by means of a bimetal link placed inside the case.



TB74X DS80

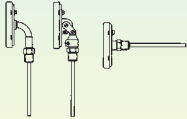
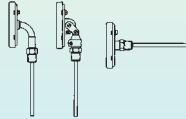
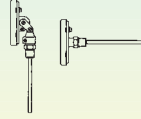


TB99X DS125

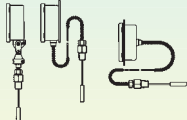



TB89X DS100-125-150

technical Specifications

Models	TB7 DS63-80-100-125	TB8 DS100-125-150	TB9 DS125
ATEX category		2GD	
Measuring principle	bimetal	bimetal	bimetal
Wetted parts	AISI303 - AISI316	AISI316	AISI303 st.st.
Ranges	-20...+40/0...500°C	-50...+50/100...500 °C	-80...+1000 °F
Accuracy (as per EN 13190)	2,0	1,0	A grade as per ASME B40.3
Protection degree	IP 55	IP 55...67	IP 67
Mounting			
Main features		<ul style="list-style-type: none"> • Can be filled with dampening liquid • ATEX constructional safety type "C" 	<ul style="list-style-type: none"> • Hermetically sealed • External zero adjustment



Models	TG8 DS100-150	TA819 DS100
ATEX category	2GD	
Measuring principle	inert gas	inert gas
Wetted parts	AISI316	AISI316 st.st.
Ranges	-200...+100/100...500°C	0...+650 °C/°F
Accuracy (as per EN 13190)	1,0	1,0
Protection degree	IP 55...67	IP 67
Mounting		
Main features	<ul style="list-style-type: none"> • Can be filled with dampening liquid • Remote mounting with capillary • ATEX constructional safety type "C" 	<ul style="list-style-type: none"> • Waste gas of diesel engines monitoring

ALL OUR PRODUCTS ARE MANUFACTURED ACCORDING TO QUALITY ASSURANCE SYSTEM

UNI EN ISO 9001



NUOVA FIMA

thermocouples and resistance temperature detectors

Thermocouples and Resistance Temperature Detectors are the most common sensors for the electric temperature measurement.

They are suitable for temperature between -200 and $+1800^{\circ}\text{C}$ according to the measuring principle and the used materials.

Moreover, they have remarkable advantages:

- sturdiness and vibration strength,
- fast response time,
- high accuracy.

Connectors and connection heads are available in various types and materials and they are suitable for all industrial applications.

Thermocouples and RTD can be supplied in standard, intrinsically safe or explosion proof executions.



EEx temperature assembly with explosion proof head



Insert



Thermoelement with cable







Standard temperature assembly with light weight aluminium head



A transmitter can be assembled inside the connection head to convert the electrical values generated by sensor into an analogue (4/20 mA) or digital signal output.

Transmitters are available with a fixed, adjustable or programmable range (Smart) with HART™, PROFIBUS™ or FIELDBUS™ protocols.

technical Specifications

Models	Insert	Thermoelement	Standard assembly	Eex assembly
RTD TC	•	•	•	•
Type	Pt100 / K,J,T,N,R,S,B	Pt100 / K,J,T,N,R,S	Pt100 / K,J,T,N,R,S,B	Pt100 / K,J,T,N,R,S,B
Range	-200...+1800°C	-200...+1600°C	-200...+1800°C	-200...+1800°C
Sheath diameter	1,5...6,4 mm	0,25...12,7 mm	1,5...6,4 mm	1,5...6,4 mm
Insulation	MgO / Ceramic	MgO	MgO	MgO
Sheat material	AISI316/Inconel 600/ceramic	AISI316/ Inconel 600	AISI316/ Inconel 600	AISI316/ Inconel 600
Protection degree	IP 00	IP 00	IP 54...66	IP 54...66
Termination	Ceramic thernal block	Cable	Aluminium or st.st head	Aluminium Eex d head
Mounting				



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NUOVA FIMA

thermowells

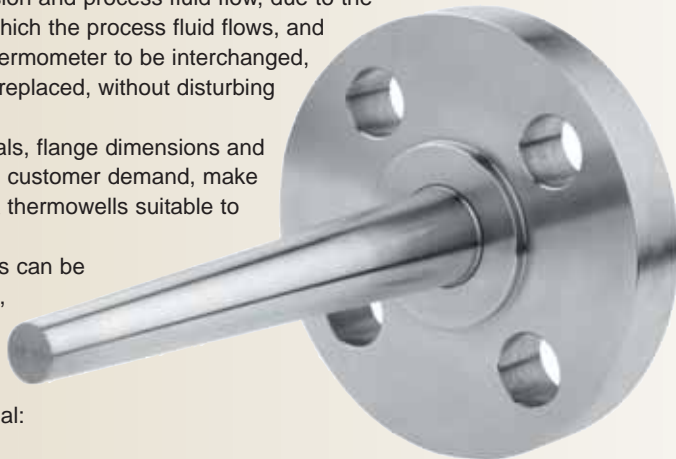
Thermowells are used to protect bulbs from the effects of corrosion and process fluid flow, due to the high speed at which the process fluid flows, and to enable the thermometer to be interchanged, recalibrated, or replaced, without disturbing the process.

Different materials, flange dimensions and shank shape on customer demand, make the Nuova Fima thermowells suitable to any installation.

All welding types can be made as simple, double, full penetration.

Available material:

- Monel 400
- Hastelloy C276
- Alloy 825
- Alloy 625
- Duplex SAF 2205
- Duplex SAF 2507



W93



W92



W82



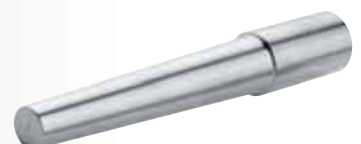
W10-20



W30-40



W50



W70

Von Karman vortex

When a thermowell is inserted into a process at a specific fluid speed it creates a turbulent wake (Von Karman Trail), which will have a particular frequency determined by the diameter of the thermowell and the speed of the process fluid.

It is important for the thermowell dimensions to be chosen so that the frequency of the Karman wake is less than the resonant frequency of the thermowell. NUOVA FIMA make a deep analysis to check if the choosed thermowell is suitable for a safe installation.

technical Specifications

	Threaded thermowells			Weld-in thermowell	Flanged thermowells		
	Built-up	Bar-stock	Bar-stock	Bar-stock	Built-up	Bar-stock	Bar-stock
Models	W10-20	W30-40	W50	W70	W82	W92	W93
PN	25	100	250	100...250	25	100	250
Immersion length	Up to 3000 mm	Up to 1000 mm	Up to 1000 mm	Up to 1000 mm	Up to 3000 mm	Up to 1000 mm	Up to 1000 mm
Materials	AISI316L	AISI316 and special materials	AISI316L and special materials	AISI316L and special materials	AISI316	AISI316L and special materials	AISI316L and special materials
Process connections	1/2"...1" Gas or NPT	1/2"...1" Gas or NPT	3/4"...1" Gas or NPT	To be welded	1/2"...2" DN15...50	3/4"...2" DN20...50	1"...2" DN25...50
Internal hole diameter	Ø 10-12 mm	Ø 7...12 mm	Ø 7...12 mm	Ø 7...12 mm	Ø 10-12 mm	Ø 7...12 mm	Ø 7...12 mm
Main features			Von Karman analysis	Von Karman analysis			Von Karman analysis

CE

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NUOVA FIMA

Accessories



MP5/...
Pig tails and siphons.



MP4/8 - MP4/9
Bellow and piston overload protection device.



MP4/7 + MP4/5
Needle dampeners and porous dampeners.



MP3/...
2/3-way valves and by-pass valves.



P6A
3 1/2 digit microprocessor digital indicator 4..20 mA 0..10 Vcc input.



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