



Measuring & Calibration Technology

MEASURING | CALIBRATING | TESTING

WITH GREAT PRECISION



MEASURING & CALIBRATION



MEASURING | CALIBRATING | TESTING

SAFE - EASY TO OPERATE



Safety, quality and performance: three words that sum up the advantages of our product range. Our instruments are designed to help you carry out your work more quickly, efficiently and with greater precision.

A suitable device exists for each application. You can choose from a range of portable devices with numerous functions. These are high-precision instruments that can also record and display data.

Guaranteed Precision :

ecom MEASURING AND CALIBRATION TECHNOLOGY

PRECISION

This is our main priority where measuring and calibrating are concerned. We do not compromise on safety. This is also obvious with regard to safety.

PRECISE DATA

Accurate equipment and precise data are the basis for every successful production process and the prerequisite for effective quality assurance.

Regular measurement and calibration is among the most important and most challenging tasks that companies have to perform.

CAUTION

Working with caution is particularly important when working in hazardous areas e.g. in the chemical, petrochemical or other sectors involving potentially explosive gases and dusts. Testing with non-certified equipment would place workers at risk leading to, in the worst case scenario, insufficient explosion protection, placing the plant, machinery or people in danger.

SAFE AND RELIABLE

ecom provides a wide range of safe and reliable mobile instruments for measuring and calibrating inside and outside hazardous areas. Ranging from the multimeter to devices for measuring temperature, pressure and rpm, plus pressure, current loop and process calibrators, ecom have got you covered.

SAFETY





As varied as the possible applications may be, our devices all guarantee the same advantages: safe, easy to operate, powerful and ergonomically designed.




CHOOSE YOUR MEASUREMENT DEVICE, CALIBRATOR OR TEST EQUIPMENT ACCORDING TO YOUR REQUIREMENTS

- Multimeter
- Sensor-Temperature Measuring Unit
- Infrared-Thermometer
- Loop Calibrator
- Multifunction Process Calibrator
- Pressure Calibrator
- Pressure Module
- Laser-Tachometer
- Magnet Probe
- Wall Clock

28II EX

ROBUST AND INTRINSICALLY SAFE

CERTIFICATION	
ATEX 	II 2 G Ex ia IIC T4 Gb
IECEX 	Ex ia IIC T4 Gb Ex ia IIIC T130°C Db Ex ia I Ma
NEC 	Class I Zone 1 AEx ia IIC T4 Class II Zone 21 AEx iaD T130 °C Class I, Division 1, Groups A,B,C,D Class I, Division 2, Groups A,B,C,D Class II, Division 1, Groups E,F,G Class III Ex ia IIC
GOST 	Ex ia IIC T4 Gb X Ex ia IIIC T130°C Db X (IP6X) Ex ia I Ma X

CERTIFICATION	
PCEC 	Ex ia IIC T4 Gb Ex ia IIIC T130°C Db
INMETRO 	Ex ia IIC T4 Gb -15 °C ≤ Tamb ≤ +50 °C
ANZEX 	Ex ia I Ma -15 °C ≤ Ta ≤ +50 °C



WATER AND DUSTPROOF

The 28 II EX carries the most important Ex-certifications and is also tested for drops of up to 3 meters. Additionally it is waterproof and dustproof (IP67). Therefore, the 28 II EX DMM can survive the roughest treatment in the harshest environments.



Multimeter FLUKE 28II EX FOR ZONE 1

FEATURES & FUNCTIONS

- CAT III 1000 V/CAT IV 600 V
- Dustproof, waterproof (IP67)
- Measures up to 1000V / 10A (outside of the Ex-hazardous area)
- Min/Max/Avg and Peak capture
- Low pass filter for accurate measurements on variable speed motor drives
- Input alert
- 4½" digit display (20,000 counts) with backlight

APPROVALS

The Fluke 28II EX combines a large number of worldwide approvals for use in potentially explosive environments – from ATEX to IECEx and NEC – meaning that it is no longer necessary to deploy and integrate different equipment on different continents.

This makes the multimeter a perfect example of portable, intrinsically safe measuring instruments – not least of all due to the numerous features unique to measuring devices in potentially explosive surroundings.



EASY TO USE

- Backlit keypad for extra visibility in poor lit areas
- Large display digits and 2-level backlight
- Long battery life: 400 hours typical (without backlight)

HANDLING BENEFITS

- Only one DMM is needed because of the safe and compact solution which allows safe measurement both inside and outside (max. 10A / 1000V) the Ex-hazardous area
- A separate battery compartment makes it easy to change batteries on fuses

EXTREME RUGGEDNESS

- Completely sealed IP67 rated case
- Water and dustproof
- Meets IEC Overvoltage Electrical Safety Standard EN 61010-1:2001:CAT III 1000V and CAT IV 600V

28 II EX

CAN BE USED WORLDWIDE

ACCESSORIES

ARTICLE NO.	PRODUCT DESCRIPTION	
A0001461	Replacement protection module 440mA f. 28 II EX	
A0009288	Temperature sensor 80PK-27	
A0005533	AC Clamp i400 (400A)	
A0001493	Leather case with strap	
A0009238	TL175 Twist Guard Test Leads	
A000...	Various Calibration on Request	

TECHNICAL DATA

Ambient temperature	-15 °C ... +50 °C (+5 °F ... +122 °F)
Storage temperature	-40°C ... +60°C without Batteries
Power supply	3 x AAA, type-proofed
Operating time	approx. 400 h
Dimensions	approx. 210 x 100 x 64 mm (with holster)
Weight	approx. 690 g
Protective rating	IP67

STANDARD DELIVERY

- Fluke 28 II EX
- Ex-holster
- Alligator clips
- Test leads TL175
- Batteries
- Ex-Certificate / EC-Declaration of conformity
- CD-ROM
- Manual

SPECIFICATION

DC voltage	Range: Accuracy:	0.1 mV to 1000 V ± 0.05 % + 1
AC voltage	Range: Accuracy:	0.1 mV to 1000 V ± 0.7 % + 4
DC current	Range: Accuracy:	0.1 µA to 10 A ± 0.2 % + 4
AC current	Range: Accuracy:	0.1 µA to 10 A ± 1.0 % + 2
Resistance	Range: Accuracy:	0.1 Ω to 50 MΩ ± [0.2 % + 1]
Conductance	Range: Accuracy:	60.00 nS ± [1.0 % + 10]
Diode test	Range: Accuracy:	2.0 V ± [2.0 % + 1]
Duty cycle	Range: Accuracy:	0.0 % to 99.9 % Within ± [0.2 % per kHz + 0.1 %] for rise times <1 µs
Display counts		6000 counts / 19.999 counts in high-resolution mode
Capacitance	Range: Accuracy:	10 nF to 9999 µF ± [1.0 % + 2]
Frequency	Range: Accuracy:	0.5 Hz to 199.99 kHz ± [0.005 % + 1]
Temperature	Range: Accuracy:	-200 °C to +1090 °C [-328 °F to +1994 °F] ± [1.0 % + 10] °C [± [1.0 % + 10] °F]

Error: % of reading + number of digits

REMARKS

Measurement inside the Ex-hazardous area:

$U_i \leq 65V, I_i \leq 5A$

Measurement outside the Ex-hazardous area:

$U_i \leq 1000V, I_i \leq 10A$

Ex-Pt 720

MEASUREMENTS FROM ZONE 1 INTO ZONE 0

CERTIFICATION

ATEX



II 2 (1) G Ex ia IIC T4

FM



I.S. Class I Division 1 Groups A-D T4
Class 1 Zone 0 AEx ia IIC T4

STANDARD DELIVERY

- Ex-Pt 720
- Carrying strap
- Battery
- User Manual
- Ex-Certificate
- EC-Declaration of Conformity

Sensor-Temperature Measuring Unit Ex-Pt 720

FOR ZONE 1

FLEXIBLE HANDLING

The simple operation enables flexible handling during measurement.

The large clearly-readable display facilitates smooth reading of the measured value, which can be displayed in °C or °F. With the HOLD-function the measured value can be "frozen" and inscribed in a diagram. An automatic switch-off prevents unnecessary battery discharge.

There are 4 different standard probes available. For customized solutions all standard probes can also be offered as special probes (different length and diameter).

OPERATION AND DISPLAY

- ON/OFF button, HOLD button
- °C/°F changeover
- Auto-Off after 10 min. (excl. HOLD)
- 3 digit large display
- Low battery display
- Sensor break detection

FEATURES & FUNCTIONS





- High accuracy
- Handy size
- Measurement from Zone 1 into Zone 0
- Large digital display







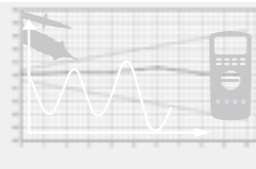
EX-Pt720

TEMPERATURE MEASUREMENTS IN POTENTIALLY EXPLOSIVE AREAS

TECHNICAL DATA	
Ambient temperature	-10 °C ... +50 °C (+14 °F ... +122 °F)
Storage temperature	-20 °C ... +70 °C (-4 °F ... +158 °F)
Measurement range (general)	-50 °C ... +400 °C (-58 °F ... +752 °F) (in Ex-hazardous areas depending on temperature class)
Accuracy (+/- 1 Digit)	-50 °C ... +199.9 °C (-58 °F ... +392 °F) +/- 0.2 °C +200 °C ... +400 °C (+392 °F ... +752 °F) +/- 0.2 % of rdg.
Resolution	-50 °C ... +199.9 °C (-58 °F ... +392 °F) 0.1 °C +200 °C ... +400 °C (+392 °F ... +752 °F) 1 °C
System accuracy with immersion/insertion sensor (+/- 1 digit)	-50 °C ... +99.9 °C (-58 °F ... +212 °F) +/- 0.6 °C +100 °C ... +400 °C (+212 °F ... +752 °F) +/- 0.5 % of rdg.
Measuring sensor	Pt 100/4 wire
Power supply	1 x 6LR61 (9V battery block), type proofed
Operating time	approx. 100 h
Unit dimensions	190 x 57 x 42 mm
Weight	approx. 200 g with battery
IP protection class	IP 54

STANDARD PROBES	
IMMERSION/INSERTION PROBE 	Accuracy: Class A Ex-Zones: 1 Probe dimensions: 110 x 4 mm (l x ø) Sensor dimensions: 30 x 3.2 mm (l x ø) Response time (99 %): 12 sec
SURFACE PROBE 	Accuracy: Class B Ex-Zones: 1 Probe dimensions: 140 x 4 mm (l x ø) Sensor dimensions: 9 mm (ø) Response time (99 %): 40 sec
STAINLESS-STEEL PROBE 	Accuracy: Class A Ex-Zones: 0 Probe dimensions: 125 x 4 mm (l x ø) Sensor dimensions: 15 x 3 mm (l x ø) Response time (99 %): 10 sec
IMMERSION PROBE FOR TANK MEASUREMENTS 	Accuracy: Class A Ex-Zones: 0 Probe dimensions: approx. 235 x 25 mm (l x ø) Weight: 400 g (without cable) Response time (99 %): 10 sec Cable: approx. 25 m

ACCESSORIES

ARTICLE NO.	PRODUCT DESCRIPTION	
A0002805 	Leather case with belt clip	
A0002806 	Carrying strap with snap hook	
A0002807	DKD-calibration for immersion/insertion probe	
A0002808	WKS calibration for immersion/insertion probe	
A0002943	WKS calibration for surface probe	

SPECIAL PROBES

Immersion/insertion probe

Accuracy:	Class A
Ex-Zones:	1
Probe dimensions:	>50 x >4 mm (l x ø)
Sensor dimensions:	>30 x >3.2 mm (l x ø)
Response time (99 %):	12 sec

Surface probe

Accuracy:	Class B
Ex-Zones:	1
Probe dimensions:	>50 x >4 mm (l x ø)
Sensor dimensions:	>9 mm (ø)
Response time (99 %):	40 sec

Stainless-steel insertion probe




Accuracy:	Class A
Ex-Zones:	0
Probe dimensions:	>50 x >4 mm (l x ø)
Sensor dimensions:	>15 x >3 mm (l x ø)
Response time (99 %):	10 sec




Immersion probe for tank measurements

Accuracy:	Class A
Ex-Zones:	0
Probe dimensions:	235 x 25 mm (l x ø)
Weight:	approx. 400 g (without cable)
Response time (99 %):	10 sec
Cable:	1 ... 29.5 m

568 EX

FOR HARSH ENVIRONMENTS

CERTIFICATION	
ATEX 	II 2 G Ex ia IIC T4 Gb
IECEX 	Ex ia IIC T4 Gb
NEC 	Class I, Zone 1, AEx ia IIC T4 Gb Class I, Zone 1, Ex ia IIC T4 Gb Class I, Division 2, Groups A-D, T4

CERTIFICATION	
PCEC 	Ex ia IIC T4 Gb
INMETRO Segurança 	Ex ia IIC T4 Gb
GOST 	1Ex ia (op is Ga) IIC T4 Gb X

QUICK AND EASY

This intrinsically safe Fluke 568 EX infrared thermometer is the ideal companion for taking complex measurements in hazardous areas easily and efficiently. Due to the ergonomic and rugged design, even in harsh environments the 568 Ex is the ideal device. The thermometer can be used to capture and recall up to 99 values at one time. The adjustable emissivity feature allows you to take readings from a range of different materials during your round thanks to the integrated material table.



TECHNICAL DATA	
Infrared temperature range	-40 °C...+800 °C (-104 °F...+1472 °F)
Display resolution	0.1 °C / 0.1 °F
Infrared response time	<500 ms
Distance to measurement spot size (D:S)	50:1
Storage	Up to 99 points with time and date
Min/Max/Avg/Dif	Yes
Emissivity adjustment	Digitally from 0.1 to 1.00 by 0.01
Accuracy	>0 °C +-1 °C or 1 %, whichever is greater
Laser sighting	Single-point laser
Ambient temperature	0 °C ... +50 °C (+32°F ... +122°F)
Power supply	2x AAA, type approved
Battery life	4 h continuous operation
Weight	Approx. 365 g (12.87 oz)

Infrared-Thermometer FLUKE 568 EX FOR ZONE 1

FEATURES & FUNCTIONS

- Precise measurements with accuracy
- Easily measure hard-to-reach objects
- Measurements from Zone 1 into Zone 0
- Measurements of moving materials
- Easy emissivity adjustment
- Data logging up to 99 points
- 6 languages available

STANDARD DELIVERY

- Fluke 568 EX
- Batteries
- Leather case
- Carrying case
- Operating instructions, Safety instructions
- K-type thermocouple

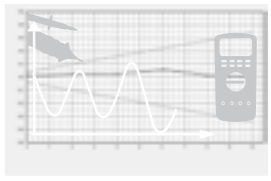


APPROVALS

The Fluke 568 EX combines a large number of worldwide approvals for use in potentially explosive environments – from ATEX to IECEx and NEC – meaning that it is no longer necessary to deploy and integrate different equipment on different continents.

This makes the thermometer a perfect example of portable, intrinsically safe measuring instruments – not least of all due to the numerous features unique to measurement devices in potentially explosive areas.



ACCESSORIES

ARTICLE NO.	PRODUCT DESCRIPTION	
A0001160	WKS-Calibration	
A0001161	DKD-Calibration	
A0001162 	Leather case LH568	

707 Ex

FOR TESTING CURRENT LOOPS

CERTIFICATION



© II 2 G Ex ia IIC T4



N.I. Class 1 Div. 2 Groups A-D

PRACTICAL

The fast, one-handed tool for loop checks in Ex zones. The 707Ex is a loop calibrator for use in ex-hazardous areas classified as Zone 1 and 2.

TECHNICAL DATA

Ambient temperature	-10 °C to +50 °C
Storage temperature	-30 °C to +60 °C
Maximum voltage	28 Volt
Relative humidity	95 % (0 °C to +30 °C); 75 % (+30 °C to +40 °C); 45 % (-40 °C to +50 °C)
Power supply	1x 6LR61, type approved
Operating time	18 hours typical, at 12 mA
Dimensions (HxWxD)	164 x 75 x 47 mm (with holster)
Weight	350 g (with holster)

ZONE 1 / CLASS I DIV. 2



Loop Calibrator **FLUKE 707 Ex** FOR ZONE 1, 2 AND DIV 2

FEATURES & FUNCTIONS

- Large display and simple, quick click push rotary button for easy one-handed operation.
- Simultaneous mA and % readout for quick, easy, interpretation of readings.
- mA accuracy of 0.015 %
- 1 µA resolution for mA source, simulate and measure.
- Push button with 25 % steps for fast, easy linearity checks.
- 0-100 % "span check" for fast confirmation of zero and span.
- Internal loop supply, so you can power and read a transmitter at the same time.
- Measures up to 28 V dc.
- 0-20 mA or 4-20 mA default start up modes.
- HART® compatible resistance is connected in series with the loop supply for compatibility with HART® communicators.

STANDARD DELIVERY

- 707Ex
- Ex-Holster
- Safety designed test leads
- Alligator test clips
- Battery
- CD-ROM
- Calibration Certificate
- Instruction manual

SUMMARY SPECIFICATIONS (18 °C TO 28 °C. ONE YEAR)

Function	Range	Resolution	Accuracy
Voltage measure	0 to 28 V	0.001 V	±(0.015 % v. MW. +2 Digits)
mA measure	0 to 24 mA	0.001 mA	±(0.015 % v. MW. +2 Digits)
mA source ¹	0 to 24 mA	0.001 mA	±(0.015 % v. MW. +2 Digits)
mA simulate ²	0 to 24 mA	0.001 mA	±(0.015 % v. MW. +2 Digits)
Loop supply	24 V	n. z.	24 V ± 1 V DC

Temperature Coefficient, -10 to 18 °C, 28 to 55 °C: ± 0.005 % of range per °C;

¹ Max load, 700 Ohms at 20 mA

² Max applied voltage for simulation, 28 V

725 Ex

CERTIFICATION



Ⓜ II 1 G EEx ia IIB 171 °C



I.S. Class 1 Div 1 Groups B-D
AEx ia IIB 171°C

VERSATILE AND PRECISE

The 725Ex Intrinsically safe Multifunction Process Calibrator is powerful yet easy-to-use. Combined with the 700PEX Pressure Modules, the calibrator is able to calibrate almost any process instrument likely to need service in an ex-hazardous area.

EFFICIENT AND
INTRINSICALLY SAFE

ZONE 0 / CLASS I DIV. 1



Multifunction Process Calibrator FLUKE 725 Ex

FOR ZONE 0, 1 AND 2

FEATURES & FUNCTIONS

- Source or simulate volts dc, mA, RTDs, thermocouples, frequency and ohms
- Two channel simultaneous source and measure capability for calibration of transmitters
- Store frequently-used test setups for later use
- Pressure measurement to 3,000 psi/200 bar using any of the 8 intrinsically safe 700PEX Pressure Modules
- Pressure switch test function to capture set, reset and deadband values

STANDARD DELIVERY

- 725Ex
- Test leads
- Test clips
- One pair of stackable test leads
- Factory calibration certificate
- Batteries
- CD-ROM
- Instruction manual

TECHNICAL DATA

Ambient temperature	-10 °C to +55 °C,
Storage temperature	-40 °C to 71 °C
Maximum Voltage	30 Volt
Relative humidity	90 % (+10 °C... +30 °C); 75 % (+30 °C... +40 °C); 45 % (+40 °C... +50 °C); 35 % (+50 °C... +55 °C)
Power supply	4x AA, type approved
Operating time:	25 hours typical
Dimensions (HxWxD)	200 x 96 x 47 mm
Weight	650 g

725 Ex

UNIVERSAL MEASURING DEVICE

SUMMARY SPECIFICATIONS: (18 °C TO 28 °C FOR ONE YEAR)				
Function Measure or Source	Range	Resolution	Accuracy	Notes
Voltage	0 to 100 mV 0 to 10 V (Source) 0 to 30 V (Measure)	0.01 mV 0.001 V 0.001 V	0.02 % Rdg + 2 digits	Max. Load 1 mA
mA	0 to 24 mA	0.001 mA	0.02 % Rdg + 2 digits	Max. Load 250 Ω 20 mA
mV (TC terminals)	-10.00 mV to +75.00 mV	0.01 mV	± (0.025 % + 1 digit)	
Resistance	15 Ω to 3200 Ω (Source) 0 Ω to 3200 Ω (Measure)	0.1 Ω to 1 Ω 0.1 Ω to 1 Ω	0.10 Ω to 1.0 Ω 0.10 Ω to 1.0 Ω	
Frequency	2.0 to 1000.0 CPM 1 to 1000 Hz 1 to 10.0 kHz	0.1 CPM 1 Hz 0.1 kHz	± (0.05 % + 1 digit) ± (0.05 % + 1 digit) ± (0.05 - 0.25 % + 1 digit)	For frequency source waveform is 5 V p-p squarewave. -0.1 V offset
Loop supply	12 V	n. z.	10 %	

Temperature coefficient: -10 °C to 18 °C. 28 °C to 55 °C. ±0.005 % of range per °C

THERMOCOUPLE ACCURACY SPECIFICATIONS			
Type	Range ...	Accuracy ...	
		Measure (4 wire)	Source
Ni 120	-80 °C to +260 °C	0.2 °C	0.2 °C
Pt 100 - 385	-200 °C to +800 °C	0.33 °C	0.33 °C
Pt 100 - 3926	-200 °C to +630 °C	0.3 °C	0.3 °C
Pt 100 - 3916	-200 °C to +630 °C	0.3 °C	0.3 °C
Pt 200 - 385	-200 °C to +250 °C 250 °C to 630 °C	0.2 °C 0.8 °C	0.2 °C 0.8 °C
Pt 500 - 385	-200 °C to +500 °C 500 °C to +630 °C	0.3 °C 0.4 °C	0.3 °C 0.4 °C
Pt 1000 - 385	-200 °C to +100 °C 100 °C to +630 °C	0.2 °C 0.3 °C	0.2 °C 0.2 °C
Resolution			
RTD	0.1 °C, 0.1 °F		

THERMOCOUPLE ACCURACY SPECIFICATIONS		
Thermocouple	Measure	or source
J	-200 to 0 °C 0 to +1200 °C	1.0 °C 0.7 °C
K	-200 to 0 °C 0 to +1370 °C	1.2 °C 0.8 °C
T	-200 to 0 °C 0 to +400 °C	1.2 °C 0.8 °C
E	-200 to 0 °C 0 to +950 °C	0.9 °C 0.7 °C
R	-20 to 0 °C 0 to +500 °C +500 to +1750 °C	2.5 °C 1.8 °C 1.4 °C
S	-20 to 0 °C 0 to +500 °C +500 to +1750 °C	2.5 °C 1.8 °C 1.5 °C
B	+600 to +800 °C +800 to +1000 °C +1000 to +1800 °C	2.2 °C 1.8 °C 1.4 °C
L	-200 to 0 °C 0 to +900 °C	0.85 °C 0.7 °C
U	-200 to 0 °C 0 to +400 °C	1.1 °C 0.75 °C
N	-200 to 0 °C 0 to +1300 °C	1.5 °C 0.9 °C
Resolution		
J, K, T, E, L, N, U B, R, S		0.1 °C. 0.1 °F 1 °C, 1 °F
Notes		

Accuracy specifications include 0.2 °C cold junction uncertainty.

ACCESSORIES

ARTICLE NO.	PRODUCT DESCRIPTION	
A0001493	Leather Case with carrying strap	
A000...	Explosion protection pressure modules from the 700PEX range (see page 22)	
A000...	Various calibrations available on request	

FEATURES

Simultaneous Function Capability	Channel A	Channel B
24,000 mA DC	M	M or S
24,000 mA DC	M	
100,00 mV DC		M or S
30,000 V DC Measure	M	
20,000 V DC Measure 10,000 V DC Source		M or S
Source: 15 to 3200 Ω, Measure: 0 to 3200 Ω		M or S
Thermocouple J, K, E, R, S, B, L, U, N		M or S
RTD Ni120; Pt100 (392); Pt100 (JIS); Pt100, 200, 500,1000 (385)		M or S
Pressure (using 700PEX modules)	M	M used as S
Frequency; Squarewave, 1 CPM to 10 kHz; fixed amplitude 5 V p-p		M or S

M = Measure S = Source/Simulate

718Ex

PRESSURE SPECIALIST



CERTIFICATION	
ATEX 	II 1G EEx ia IIC T4
NEC 	I.S. Class 1 Div. 1 Groups A-D, T4

EFFICIENT

The Fluke 718Ex is a particularly handy and practical tool for pressure measurements and calibration. With its internal pressure sensor and pressure pump, it can be used on its own without an external pump. The pressure range can easily be extended to 200 bar with each of the 8 FLUKE 700PEX Pressure Modules.

ZONE 0 / CLASS I DIV. 1



ACCESSORIES

ARTICLE NO.	PRODUCT DESCRIPTION
A000...	Intrinsically safe pressure modules from the 700PEX series
A0004100	DKD calibration
A0004101	WKS calibration

TECHNICAL DATA	
Ambient temperature	-10 °C to +55 °C
Storage temperature	-40 °C to +60 °C
Pressure input	1/8 in. NPT pressure fitting
Pressure module input	LEMO connector
Relative humidity: (% RH operating without condensation)	95 % (+10 to +30 °C); 75 % (+30 to +40 °C); 45 % (+40 to +50 °C); 35 % (+50 to +55 °C)
Power supply	1x 6LR61, type approved
Operating time	4 to 20 hours, depending on functions used
Dimensions (HxWxD)	216 x 94 x 66 mm (with holster)
Weight	992 g (with holster)

Pressure Calibrator FLUKE 718 Ex FOR ZONE 0

FEATURES & FUNCTIONS

- Built-in pressure/vacuum hand pump, with vernier and bleed valve
- Pressure measurement to 0.05 % of full span, using an internal pressure sensor
- Pressure measurement to 200 bar using any of the 8 intrinsically-safe 700PEX Pressure Modules
- Wide range of selectable measurement units for pressure
- Pressure switch test function
- Min/Max hold functions

STANDARD DELIVERY

- 718Ex
- Ex-holster
- Test leads
- Test clips
- Batteries
- CD-ROM
- Factory calibration certificate
- Instruction manual

Measure current	Model	Range	Resolution	Accuracy
	718Ex- 30G, 100G or 300G	0 - 24 mA	0.001 mA	0.02 % rdg ± 2 digits
Temp Coeff. -10 to 18 °C, 28 to 55 °C: ± 0.005 % of range per °C				

Source pressure	Model	Range
Using built in pump	718Ex 30G / 718Ex 100G / 718Ex 300G	-830 mbar to 2 bar/-830 mbar to 7 bar/-830 mbar to 20 bar

Specifications (Summary Specifications (18 °C to 28 °C, one year))						
Measure pressure	Model	Range	Resolution	Accuracy	Over pressure	Media
Mit internem Druckmodul	718Ex-30G	-830 mbar to 2 bar	0.0001 bar	0.05 % FS	3x FS	Non corrosive gases
	718Ex-100G	-830 mbar to 7 bar	0.001 bar	0.05 % FS	2x FS	Non corrosive gases
	718Ex-300G	-830 mbar to 20 bar	0.001 bar	0.05 % vFS	25 bar	Non corrosive gases
Using internal pressure module	718Ex 30G or 30G, 100G or 300G	up to 200 bar	Depending pressure module (see detailed specification)			
Temp Coeff. -10 to 18 °C, 28 to 55 °C: ± 0.01 % of range per °C						
Supported pressure units PSI, in. H2O (4 °C), in. H2O (20 °C), kPa, cm H2O (4 °C), cm H2O (20 °C), bar, mbar, kg/cm2, mmHg, inch Hg						

700P Ex

TO MEASURE PRESSURE

CERTIFICATION



Ⓜ II 1G EEx ia IIC T4



I.S. Class 1 Div. 1 Groups A-D, T4

COMPATIBLE

To measure a wide range of pressure in a hazardous area the range of pressure modules is extended with 8 ATEX compliant models.

These models are compatible with the 718Ex intrinsically safe pressure calibrator and the intrinsically safe multifunction process calibrator 725Ex.

TECHNICAL DATA

Ambient temperature	0 °C to 50 °C
Storage temperature	-40 to 60 °C
Pressure module output	LEM0 connector
Relative humidity (% RH operating without condensation)	95 % (+10 °C... +30 °C); 75 % (+30 °C... +40 °C); 45 % (+40 °C... +50 °C); 35 % (+50 °C... +55 °C)
Dimensions	110 x 90 x 45 mm
Weight	approx. 300 g



Pressure Module 700P Ex FOR ZONE 0

FEATURES & FUNCTIONS

- Ranges from 2.5 mbar to 200 bar
- Very high accuracy up to 0.025 %
- Compatible with 718Ex and 725Ex
- Rugged cases protect the modules in harsh environments

STANDARD DELIVERY

- 700P Ex
- Factory calibration certificate
- Adapter
- Instruction manual

PRESSURE MODULE SPECIFICATIONS

Model	Range (approx.)	Resolution	Reference Uncertainty (+23 ± 3 °C)	High Side media	Low Side media	Fitting material	Max. over-pressure ²
Differential							
700P01Ex	25 mbar	0.01 mbar	0.2 %	dry ¹	dry	316 SS	3x
700P24Ex	1000 mbar	0.1 mbar	0.03 %	316 SS	dry	316 SS	3x
Gauge							
700P05Ex	2 bar	0.1 mbar	0.03 %	316 SS	N/A	316 SS	3x
700P06Ex	7 bar	0.7 mbar	0.03 %	316 SS	N/A	316 SS	3x
700P27Ex	20 bar	1 mbar	0.03 %	316 SS	N/A	316 SS	3x
700P09Ex	100 bar	10 mbar	0.03 %	316 SS	N/A	316 SS	2x
Absolute							
700PA4Ex	1000 mbar	0.1 mbar	0.05 %	316 SS	N/A	316 SS	3x
High							
700P29Ex	200 bar	0.01 bar	0.05 %	C276	N/A	C276	2x

¹ "Dry" indicates dry air or non-corrosive gas as compatible media.

"316 SS" indicates media compatible with Type 316 Stainless Steel.

"C276" indicates media compatible with Hastelloy C276.

² Maximum overpressure specification includes common mode pressure.

A2109/LSR

FLEXIBLE MEASUREMENT IN ZONE 1

CERTIFICATION



©II 2G Ex ia op is IIC T4 Gb

STANDARD DELIVERY

- A2109/LSR
- Batteries
- Adaption wheel
- Carrying case
- Calibration statement
- Instruction manual

FEATURES & FUNCTIONS

- High accuracy
- Handy size
- Digital display also for over-head measurement
- Types of measurement – revolution, speed
- Measurement range 3 ... 99.999 rpm

Laser-Tachometer A2109/LSR FOR ZONE 1

CONTACTLESS AND PRECISE

The A2109/LSR is ideal for fast laser-accurate measurement of the revolution of a shaft (either with or without contact) and speed (utilising the special adapter) in Zone 1. The simple 3 push-button operation and the large clearly-readable display with over-head facility enables a wide, flexible field of application. This light-weight device provides an easy one handed operation and facilitates the carrying-out of measurement, after which it can be stowed away in the tool box or jacket pocket. For boiler mixers, the rotor speed can be read from the drive shaft at a safe distance and documented. Motor revolutions can be acquired contactlessly in the immediate vicinity without having to open or remove safety fittings such as covers or protective grills. The duration of pulses or the intervals between them can be simply, easily and accurately ascertained. Data can be simply acquired within Ex-protected areas without having to switch machines off because laser-accurate measurements can be made at a safe

distance through protective devices thus complying with safety regulations. The transport speed of conveyor belts can be exactly measured using the add-on adapter and thus directly recorded in the documentation.

OPERATION AND DISPLAY

- ON button – Auto-Off after 1 min.
- HOLD function for 1 min. after releasing button
- Programming function using 3 buttons
- Statistic functions (min./max./average)
- 5 digit
- Large display
- LOW-batt. display
- Pulse recognition
- Function mode

ZONE 1



TECHNICAL DATA

Ambient temperature	-20 °C ... +40 °C
Measurement range	3 ... 99.999 rpm 0.05 ... 1.666 rps Autoselect
Accuracy (at rate)	0.02 % ±1 Digit
Resolution	0.001 digit or ± 1 digit fix (selectable) (in autorange)
Measuring system	optical/laser reflection
Measuring function Rotational speed	rpm rps
Measuring function Speed	m/min m/Sek. yd/min yd/Sek. ft/min ft/Sek.
Measurement distance	max. 2 m
Time interval	Sek.
Laser class	2
Battery-Low	Display
Power supply	4 x Duracell Procell AAA Alkaline
Operating time	approx. 6 months
Dimensions	215 (260) x 40 x 40 mm w/o (with) adapter
Weight	approx. 360 g (with battery)

ACCESSORIES

ARTICLE NO.	PRODUCT DESCRIPTION	
A0003007	Accessory reflective tape scotchlite 3290 white 5x (2.5 x 15) cm	
A0003008	UKAS Calibration – 8 calibration points: rpm 6, 60, 600, 3000, 6000, 15000, 30000, 60000	
A0003009	WKS Calibration	

Magnet-Ex12

HIGHLY
SENSITIVE TIP FOR TESTING

CERTIFICATION



Ⓜ II 2 G Ex ia IIC T4



Class I, Division 1, Groups A,B,C,D T6
Class I, Zone 0, AEx ia IIC T6

STANDARD DELIVERY

- Magnet-Ex 12
- Batteries
- Instruction manual
- Ex-Certificate
- EC-Declaration of conformity

FEATURES & FUNCTIONS

- Highly sensitive probe point
- No contact with test object required
- Resistant to dirt
- Optical indication
- Built-in test magnet for testing Magnet-Ex 12 and for battery check



Magnet Probe Magnet-Ex12 FOR ZONE 1

DETECTING MAGNETIC FIELDS

Magnet-Ex 12 is a pencil sized magnet probe, designed to detect magnetic fields in hazardous areas. Within seconds it is possible to detect whether or not a solenoid valve is electrically activated.

Connection to electronic circuitry or opening of terminal boxes is rendered unnecessary.

The highly sensitive probe point of the Magnet-Ex 12 only needs to be brought near the coil of a solenoid valve, if a magnetic field is detected, the test tip illuminates red. In the same manner tests can be carried out on flowmeters or any other equipment that is working magnetically, even when located in hazardous areas.

The Magnet-Ex 12 comes with an integral test magnet that is securely fitted in such a way that it cannot be easily lost. Using this magnet, tests can be carried out to establish the working state of both unit and batteries.

After any check the Magnet-Ex 12 will automatically switch off if it is no longer being used. This ensures a long battery life.

The clip attached to the instrument's side secures it from accidental loss and allows the maintenance engineer to easily carry it at all times.

TECHNICAL DATA

Ambient temperature	-20 °C ... +50 °C
Storage temperature	-40 °C ... +60 °C
Magnetic field types	alternating, direct and permanent fields
Detection	no contact with test object required
Indication	optical, built-in LED
Power supply	2 x LR03 (AAA) according to IEC, type approved
Casing material	metal/plastic probe point
Dimensions	150 x 18 mm (L x Ø)
Weight	approx. 60 g (batteries included)
IP protection class	IP 54

Ex-Time 40

PROBLEM-FREE SETTING AND ADJUSTMENT

CERTIFICATION



II 2 G Ex ia IIC T4



I.S. Class I Division 1 Groups A-D T4

FEATURES & FUNCTIONS

- Quartz movement
- Robust metal casing



Wall Clocks Ex-Time 40 FOR ZONE 1

WITH QUARTZ MOVEMENT

The intrinsically safe wall clock, Ex-Time 40, is driven by a Quartz accurate movement, powered by a LR 14 (C) type battery.

When necessary, e. g. for summer to winter time, adjustments can be quickly and simply made.

STANDARD DELIVERY

- Ex-Time 40
- Battery
- Operating instructions
- Ex-Certificate
- EC-declaration of conformity

TECHNICAL DATA	
Ambient temperature	0 °C ... +50 °C
Storage temperature	0 °C ... +50 °C
Clock Movement	Quartz
Accuracy	-5/+15 Seconds/month
Power Supply	1 x LR 14 according to IEC (type approved)
Operating time	1 year
Dimensions	400 x 60 mm
Weight	approx. 2.0 kg

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