

Calibratore di Pressione con pompa Integrata

HART
COMMUNICATION PROTOCOL

MAXiCAL
Process Multifunction Calibrators

● Modello :

PPC672-40 Pneumatico fino 40 Bar
PPC672-60 Pneumatico fino 60 Bar
PPC672-700 Idraulico fino 700 Bar
PPC672-1000 Idraulico fino 1000 Bar
campi relativi o assoluti
Classe 0,02%

● Pompa e Calibratore sezionabili :
Manutenzione più semplice
manda solo il calibratore in taratura

● V, mA, Switch
Precisione 0,01%

● Alimentazione Loop 24V

● Comunicatore HART integrato

● Datalogging

● Ampio display retroilluminato

● Pacco Batteria ricaricabile LiION
sostituibile in campo

● Certificato di calibrazione



CE

La calibrazione può essere semplicemente descritta come un'attività dove lo strumento da provare viene comparato con uno di riferimento. Nel livello più semplice, calibrazione è la comparazione tra due misure, una di livello conosciuto ed una in maniera simile con un altro dispositivo. Il dispositivo con livello conosciuto viene chiamato standard. Il secondo dispositivo è l'unità in prova. La calibrazione è spesso richiesta su uno strumento nuovo o quando un intervallo di tempo è trascorso. Inoltre la calibrazione è di solito effettuata quando uno strumento è stato soggetto a un shock inaspettato che lo può aver portato fuori specifica. Per questo sono necessari dei calibratori semplici da utilizzare ed alla portata di tutti.

La serie PPC è un calibratore compatto e potente, che utilizza tecnologie di ultima generazione e con una facilità di utilizzo che permette di lavorare con efficienza e sicurezza.





Additel 672 Digital Pressure Calibrators

- Pressure ranges to 40,000 psi (2,800 bar)
- HART Communication capability
- Measure mA or V, and with 24V loop power
- Easy-to-use, inexpensive pressure calibrator with uncertainty better than 0.02%FS



Gauge pressure

Differential pressure

OVERVIEW

At first glance, the 672 series precision pressure calibrators look like an ordinary pressure gauge. But this series is much more than ordinary, and definitely more than just a pressure gauge—it's a pressure calibrator! With advanced microprocessor technology and state-of-the-art silicon pressure sensors, the 672 series precision pressure calibrators provide a pressure calibration solution for gauges, transmitters, and switches over a wide pressure range. The 672 is the size of a pressure gauge but with the functionality of a calibrator: It measures pressure precisely with a built-in pressure sensor, as well as reads the current or mV produced by a transducer. It can even supply an excitation voltage to power sensors or transmitters during calibration. In order to reach 0.02%FS accuracy up to 10,000 psi (700 bar) and 0.1%FS accuracy up to 40,000 psi (2,800 bar), every silicon pressure sensor has been specially aged, tested, and screened before assembly. The 672 series precision pressure calibrators are unmatched in performance and reliability.

FEATURES

- Pressure ranges to 40,000 psi (2800 bar)
- Measure mA with 0.01% RD + 1.5 μ A accuracy
Measure V with 0.01% RD + 1.5 mV accuracy
- Power transmitters during test using 24V loop supply
- Pressure switch test
- HART Communication capability
- Advanced temperature compensation
- Dual readout
- Min/Max/Hold to capture changing measurements
- Data logging
- Large, easy to read display with 6-digit resolution
- Backlit display
- Rechargeable battery or AC adapter
- NIST traceable calibration with data (Included)

SPECIFICATIONS

- **Accuracy**
ADT672-02: 0.02% of full scale
ADT672-05: 0.05% of full scale
>20,000 (1,400 bar): 0.1% FS
- **Gauge Types**
Gauge pressure
Compound Pressure
Absolute pressure
Differential pressure
- **Display**
Description: Dual-line 6 full digit FSTN LCD with LED Backlight
Display rate: 3.5 readings per second (Default setting)
Numeral display height: 16.5mm (0.65")
- **Pressure Units**
Pa, kPa, MPa, psi, bar, mbar, inH₂O@4°C, mmH₂O@4°C, inHg@0°C, mmHg@0°C, kgf/cm²
- **Environmental**
Compensated Temperature: 14°F to 122°F (-10°C to 50°C)
Operating Temperature: 14°F to 122°F (-10°C to 50°C)
Storage Temperature: -4°F to 158°F (-20°C to 70°C)
Humidity: <95%

SPECIFICATIONS

■ Pressure Ranges

Gauge Pressure ^[1]					
P/N	Pressure Range		Media ^[2]	Accuracy(%FS)	Burst Pressure
	(psi)	(bar)			
V15	-15	-1.0	G	0.02 (0.05)	3x
GP2	2	0.16	G	0.05	3x
GP5	5	0.35	G	0.05	3x
GP10	10	0.7	G	0.02 (0.05)	3x
GP15	15	1.0	G, L ^[3]	0.02 (0.05)	3x
GP30	30	2.0	G, L ^[3]	0.02 (0.05)	3x
GP50	50	3.5	G, L	0.02 (0.05)	3x
GP100	100	7.0	G, L	0.02 (0.05)	3x
GP300	300	20	G, L	0.02 (0.05)	3x
GP500	500	35	G, L	0.02 (0.05)	3x
GP600	600	40	G, L	0.02 (0.05)	3x
GP1K	1,000	70	G, L	0.02 (0.05)	3x
GP2K	2,000	140	G, L	0.02 (0.05)	3x
GP3K	3,000	200	G, L	0.02 (0.05)	3x
GP5K	5,000	350	G, L	0.02 (0.05)	3x
GP10K	10,000	700	G, L	0.02 (0.05)	3x
GP15K	15,000	1,000	G, L	0.05 (0.1)	2x
GP20K	20,000	1,400	G, L	0.05 (0.1)	1.5x
GP25K	25,000	1,600	G, L	0.1	1.5x
GP30K	30,000	2,000	G, L	0.1	1.5x
GP36K	36,000	2,500	G, L	0.1	1.5x
GP40K	40,000	2,800	G, L	0.1	1.1x

[1] Sealed gauge pressure for above 1000 psi

[2] G=Gas, L=Liquid

[3] 0.02% FS for gas media only

Compound Pressure					
P/N	Pressure Range		Media	Accuracy(%FS) ^[1]	Burst Pressure
	(psi)	(bar)			
CP2	±2	±0.16	G	0.05	3x
CP5	±5	±0.35	G	0.02 (0.05)	3x
CP10	±10	±0.7	G	0.02 (0.05)	3x
CP15	±15	±1	G	0.02 (0.05)	3x
CP30	-15 to 30	-1 to 2	G	0.02 (0.05)	3x
CP100	-15 to 100	-1 to 7	G, L	0.02 (0.05)	3x
CP300	-15 to 300	-1 to 20	G, L	0.02 (0.05)	3x

[1] FS specification applies to the span of the range

Absolute Pressure					
P/N	Pressure Range		Media	Accuracy(%FS)	Burst Pressure
	(psi)	(bar)			
AP5	5	0.35	G	0.1	3x
AP10	10	0.7	G	0.1	3x
AP15	15	1.0	G	0.1	3x
AP30	30	2.0	G	0.1	3x
AP50	50	3.5	G	0.1	3x
AP100	100	7.0	G, L	0.05 (0.1)	3x
AP300	300	20	G, L	0.05 (0.1)	3x
AP500	500	35	G, L	0.05 (0.1)	3x
AP1K	1,000	70	G, L	0.05 (0.1)	3x
AP3K	3,000	200	G, L	0.05 (0.1)	3x
AP5K	5,000	350	G, L	0.05 (0.1)	3x

Differential Pressure						
P/N	Pressure Range		Media	Accuracy (%FS) ^[1]	Burst Pressure	Static Pressure Range
	(inH ₂ O)	(mbar)				
DP1	±1	±2.5	G	0.05 ^[2]	100x	±10 psi
DP2	±2	±5.0	G	0.05 ^[2]	100x	±10 psi
DP5	±5	±10	G	0.05 ^[2]	50x	±10 psi
DP10	±10	±25	G	0.05 ^[2]	20x	±10 psi
DP20	±20	±50	G	0.05	20x	±10 psi
DP30	±30	±75	G	0.05	20x	±10 psi
DP50	±50	±160	G	0.05	3x	±10 psi
DP150	±150	±350	G	0.02	3x	50 psi
DP300	±300	±700	G	0.02	3x	50 psi

[1] FS specification applies to the span of the range. Accuracy includes one year stability.

[2] 0.05%FS accuracy (incl 6 months stability). One year accuracy is 0.05%FS calibration accuracy combined with 0.05%FS one year stability.

Electrical Measurement Accuracy		
	Range	Accuracy
Voltage DC	±30.0000V	± (0.01%RD + 1.5 mV)
Current DC	±30.0000mA	± (0.01%RD + 1.5 µA)
DC 24V	24V±0.5V max:50mA Protect at: 120mA	
Switch ^[1]	Status OPEN/CLOSED	

[1] 1V~12V if switch has detective voltage

Additel 672

Digital Pressure Calibrators

SPECIFICATIONS

- **Pressure Connections**
1/4NPT male, 1/2NPT male, 1/4BSP male, 1/2BSP male, M20X1.5 male ($\leq 15,000$ psi)
1/4HP female or 1/4HP male ($>15,000$ psi)
1/4HP female: Autoclave F-250-C, 9/16" - 18 UNF-2B
1/4HP male: Autoclave M-250-C, 9/16" - 18 UNF-2A
0.236 inch ($\varnothing 6$ mm) test hose (for differential pressure)
Other connections available per request
- **Electrical Connection**
0.156 inch ($\varnothing 4$ mm) sockets
- **Over Pressure Warning:** 120%
- **Data Logging**
Storage capacity: 30 files, 40 records per file
Mode: manual and automatic
Hourly-record: record the data every hour
Interval-record: set by user
- **Power**
Battery: Rechargeable Li-ion polymer battery
Li-Battery working time: 40 hours
Recharge time: 4 hours
External power: 110V/220V power adapter (DC10V)
- **Enclosure**
Case material: Aluminum alloy
Wetted parts: 316L SS
Dimension: $\varnothing 120$ mm X 46mm depth X 184mm height
Weight: 0.7kg
- **European Compliance:** CE marked
- **Communication**
RS232 (DB9/F, environmentally sealed)
Baud rate: 1200,2400,4800,9600
Data length: 8 bits
Stop bit: 2 bits
Address: from 1 to 112
- **Warranty:** 1 year

ORDERING INFORMATION

■ Model Number



Model

Range type:
PSI-range by psi
BAR-range by bar
H₂O-range by inH₂O

Accuracy:
02-0.02% of full scale
05-0.05% of full scale
10-0.1% of full scale

Pressure port type:
N-1/4NPT male
N2-1/2NPT male
B-1/4BSP male
B2-1/2BSP male
M-M20X1.5 male
AF-Autoclave F-250-C female
AM-Autoclave M-250-C male

Pressure range P/N:
See pressure range table

- **Accessories included**
110V/220V external power adapter (DC 10V)
2 pieces 1.5-meter test leads
2 pieces 0.236 inch ($\varnothing 6$ mm) test hose (for differential pressure gauge only)
Additel/Land software (free download at www.additel.com)
Manual
NIST traceable calibration certificate

■ Optional Accessories

Model number	Description
9702	Spare rechargeable Li-ion polymer battery for 672
9816	Spare 110V/220V external power adapter (DC 10V) for ADT22X and ADT672 calibrator
9502	Additel/Log II real time data logging and graphical software for 681 and 672
9506	Additel/PCal pressure calibration software
9050	USB to RS232 (DB9/M) Adapter
9900-672	Carrying Case for one 672 digital pressure gauge
9022	Spare 2 pieces test leads (1.5-meter) for 672

PGS series

Handheld Pressure test pump



PGS-700/PGS-1000



PGS-40/60

The Eigroup PGS pump series are a remarkable new range of hand pumps for generating vacuum, gas and hydraulic pressure from a few mbar up to 1000 bar. The pumps are the ideal tool for applying test pressures to sensors, gauges, pressure switches and any pressure device. They are a low cost solution for field and workshop use and can be supplied with the wide range of Eigroup digital pressure indicators or for OEM applications.

- calibrate pressure device
- 4 separate models
- range from Vacuum to 1000 bar
- extended kit solutions to suits different needs

The pneumatic pumps allow pressures in excess of 600 psi to be generated with just a few strokes of the pump. By changing the push-in switching valve to vacuum, the pump will generate vacuum down to nearly 96%.

The PGS 700 and PGS 1000 hydraulic test pumps work with a variety of different fluids, including water and oil to easily generate pressures up to 1000 bar (14500 psi). The pump uses a unique "switch" which allows for fast priming or filling of the test system and then switching as needed to a smaller stroke for easier generation at high pressure.

The desired pressure point can be easy tuned by using the vernier control and a precision needle vent valve allows for controlled venting.

All 4 pumps can be supplied as a bare pump or in kit form with a hard transit case, set of adaptors, seals and hose.

SELECTION GUIDE

Features	PGS-60	PGS-40	PGS-700	PGS-1000
Pneumatic pressure capability	•	•		
Vacuum capability	•	•		
Hydraulic capability			•	•
Integral fine control for accurate set point	•	•	•	•
adjustable stroke for over pressure safety	•	•		
Controlled pressure relief valve	•	•	•	•
Priming operation			•	•
Fluid compatible (not distilled water)			•	•
Scissor action pump	•	•	•	•

TECHNICAL SPECIFICATION

Parameter	PGS-60-OEM	PGS-40-OEM	PGS-700-OEM	PGS-1000-OEM
Operating pressure range	-960mbar to 60bar	-960 mbar to 40 bar	0 to 700 bar	0 to 1000 bar
Pressure media	air	air	liquid	liquid
Fine adjustment resolution	1 mbar	1 mbar	10 to 100 mbar	10 to 100 mbar
Ref port pressure connection	3/8" BSP (F)	3/8" BSP (F)	3/8" BSP (F)	3/8" BSP (F)
Ref port standard adaptor	1/2 BSP (F)	1/2 BSP (F)	3/8" BSP (F)	1/2" BSP (F)
Test point pressure connection	1/4 BSP (F)	1/4 BSP (F)	1/4 BSP (F)	1/4 BSP (F)
Hose extension	1 x 1 meter	1 x 1 meter	option	option
Weight	510 g	510 g	1.6 Kg	1.6 Kg

Specification are based on minimum volume

G10 series

Reference pressure gauge

A range of analogue reference gauges for the PGS pump series. All gauges are dual scale reading bar/psi and fit on the top of the PGS40/700/1000 pump by using the supplied swivel adaptor, hand tight no adaptor or spanner required.



TECHNICAL SPECIFICATION

Over pressure: 30% FS

Connection: 1/2" BSP (M)

Fine graduation

Knife pointer

G10-0060 through G10-1000 -Wetted part: AISI 316 and AISI 316L,

-Case: AISI 304, glass tempered

G10-0000 through G10-0040 -Wetted part: brass, chrome plated

-Case: AISI 304, glass normal

PRESSURE RANGES

Model	Range	Accuracy	Diameter
G10-0000	-1 to 0 bar/-30 to 0 inHG	1% FS	63 mm
G10-0002	0 to 2 bar/0 to 30 psi	1% FS	63 mm
G10-0011	0 to 11 bar/0 to 160 psi	1% FS	63 mm
G10-0025	0 to 25 bar/0 to 365 psi	1% FS	63 mm
G10-0040	0 to 40 bar/0 to 600 psi	1% FS	63 mm
G10-0060	0 to 60 bar/0 to 800 psi	0.6% FS	100 mm
G10-0100	0 to 100 bar/0 to 1400 psi	0.6% FS	100 mm
G10-0160	0 to 160 bar/0 to 2000 psi	0.6% FS	100 mm
G10-0250	0 to 250 bar/0 to 3000 psi	0.6% FS	100 mm
G10-0400	0 to 400 bar/0 to 5000 psi	0.6% FS	100 mm
G10-0600	0 to 600 bar/0 to 8000 psi	1% FS	100 mm
G10-1000	0 to 1000 bar/0 to 15000 psi	1% FS	100 mm

MAXICAL

Process Multifunction Calibrators

PGS-40/60 Pneumatic Test Kits

Combined vacuum/pneumatic kit for pressure testing includes:

- PGS-40/60-OEM pump
- Set of BSP or NPT adaptors (to be specified)
- Set of seals
- Pressure hose with 1/4" BSP F adaptor (1 meter)
- Robust ABS transit case with customised foam and cells



SPECIFICATION

Model	Description
PGS-4/60-P-BSP	Pressure test kit, BSP adaptor 1/4" BSP male to 1/8", 3/8" (F) and 1/2" BSP (M)
PGS-4/60-P-NPT	Pressure test kit, NPT adaptor 1/4" BSP male to 1/8", 3/8", 1/2" and 1/4" NPT (F)

PGS-700/1000 Hydraulic Test Kit

Hydraulic test kit for high pressure testing includes:

- PGS-700-OEM or PGS-1000-OEM pump
- Set of BSP or NPT adaptors
- HTH-1000-1 high pressure hose, 1 meter
- PGS700-A-G14 adaptor for HTH-1000 hose
- Set of seals
- PGS700-TC Robust ABS transit case with customised foam and cells



SPECIFICATION

Model	Description
PGS-700-H-BSP	Pressure test kit, BSP adaptor 1/4" BSP male to 1/8", 3/8" (F) and 1/2" BSP (M)
PGS-700-H-NPT	Pressure test kit, NPT adaptor 1/4" BSP male to 1/8", 3/8", 1/2" and 1/4" NPT (F)
PGS-1000-H-BSP	Pressure test kit, BSP adaptor 1/4" BSP male to 1/8", 3/8" (F) and 1/2" BSP (M)
PGS-1000-H-NPT	Pressure test kit, BSP adaptor 1/4" BSP male to 1/8", 3/8", 1/2" and 1/4" NPT (F)

Ordering Informations

Pump Model

- PGS-60-OEM:** Medium pressure pump, -960 mbar to 60 bar
PGS-40-OEM: Medium pressure pump, -960 mbar to 40 bar
PGS-700-OEM: High pressure pump, 0 to 700 bar
PGS-1000-OEM: High pressure pump, 0 to 1000 bar

Pump Kits

- PGS-60-P-BSP:** Low pressure pump kit, BSP adaptors
PGS-60-P-NPT: Low pressure pump kit, NPT adaptors
PGS-40-P-BSP: Medium pressure pump kit, BSP adaptors
PGS-40-P-NPT: Medium pressure pump kit, NPT adaptors
PGS-700-H-BSP: Hydraulic test kit, BSP adaptors
PGS-700-H-NPT: Hydraulic test kit, NPT adaptors
PGS-1000-H-BSP: Hydraulic test Kit, BSP adaptors
PGS-1000-H-NPT: Hydraulic test kit, NPT adaptors

Pressure Gauges

See table for part number

Adaptors

- PGS-BSP adaptor set:** 1/4" BSP (M) to 1/8", 3/8" (F) and 1/2" BSP (M)
PGS-NPT adaptor set: 1/4" BSP (M) to 1/8", 3/8", 1/2" and 1/4" NPT (F)
PGS-A-N14I-G38A: 3/8" BSP (M) to 1/4" NPT (F) adaptor for ref port
PGS-A-G14I-G38A: 3/8" BSP (M) to 1/4" BSP (F) swivel connector for Ref port

Carrying cases

- PGS60-TC:** Robust transit case with customised cells and foam
PGS40-TC: Robust transit case with customised cells and foam
PGS700-TC: Robust transit case with customised cells and foam

High Pressure hose (PGS 700/PGS 1000 only)

- HTH-1000-1:** High pressure hose 1 meter, 1500 bar, 1/4" BSP (F)
HTH-1000-2: High pressure hose 2 meters, 1500 bar, 1/4" BSP (F)
HTH-1000-3: High pressure hose 3 meters, 1500 bar, 1/4" BSP (F)