



Safe area
pressure indicator



Hazardous area
pressure indicator

DPI 705E Series

Druck Handheld Pressure Indicators

The Druck DPI 705E Series of handheld pressure and optional temperature indicators combine tough and rugged design with accurate and reliable measurements.

Compact and robust, the DPI 705E Series is designed for single handed operation and provides many essential features required for routine maintenance and system troubleshooting.

Features

- 41 pressure ranges from ± 25 mbar to 1,400 bar (± 10 inH₂O to 20,000 psi/2.5 kPa to 140 MPa)
- Total 1 year uncertainty down to 0.025% full scale (FS) over temperature range of -10°C to $+50^{\circ}\text{C}$
- Integral calibration record with calibration due count-down display

- Rugged, handheld design with backlit high-contrast display
- Leak test, tare, maximum/minimum and filter functions
- Hazardous Area (Intrinsically safe) version available
- Optional remote plug and play pressure (PM700E) and Resistance Temperature Detector (RTD-PROBE) sensors
- Compatible with our pneumatic and hydraulic hand pumps
- Compatible with 4sight2 for automated calibration

DPI 705E Improves test efficiency

- Power on and use. No warm up time required.
- 20 pressure measurement units (See below)
- 1, 3 or 5 minute leak test
- Impact resistant, sealed to IP54
- Large digit high-contrast LCD with backlight
- Optional carrying case with belt loop
- Optional magnetic/loop hanging strap
- Long battery life
- Integral desk stand and hanger
- 3 Levels of accuracy

Special features

Pressure units

mbar, bar, Pa, kPa, hPa, MPa, psi, lb/ft², kgf/cm², kgf/m², mmHg(0°C), mHg(0°C), inHg 0, mmH₂O, cmH₂O, mH₂O, inH₂O (4°C, 20°C), ftH₂O (4°C, 20°C)

Calibration certificates

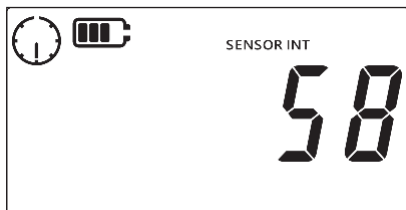
- Supplied as standard in bar, psi and kPa
- Optional UKAS accredited calibration available

Leak test

Used to determine if there is a leak in the system by recording the pressure change over a fixed time.

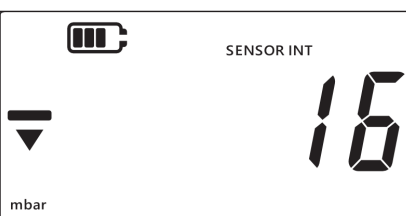
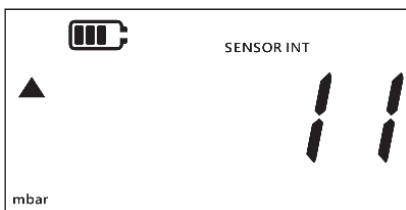
Leak test can also be used with the RTD sensor to record a temperature change over time.

User defined 1, 3 or 5 minute leak test with live countdown timer.



Maximum/minimum

Captures both maximum and minimum readings in peak-hold mode.



Zero

Zero pressure correction (gauge/differential sensors)

Tare

0 to 100% FS temporary zero offset capability by subtracting the current reading from subsequent measurements.

Filter

Enables a filtered pressure reading by showing a rolling average of the last 10 measurements. Providing a more stable reading in a noisy measurement.

Alarm

User adjustable high and low pressure alarms with visual (Bell Icon, Pressure Reading and Backlight flash) and audible warning for 60 seconds.

Calibration

Used in conjunction with the optional pneumatic or hydraulic hand pumps, the DPI 705E Series provides a simple, low-cost calibration solution.



Battery

- 4 x AA Alkaline/NiCd/NiMH cells
- Ultra power efficient design, can be used for 8 Hours per day, 6 days per week for up to a year using a single set of batteries.

Display

16mm digital height LCD with ±99999 readout

Hazardous area approvals

- ATEX, IECEx, CSA, CCOE, XPL, KCs, NEPSI, ECASEx (Ordering code 'H1')
- INMETRO (Ordering code 'H2')
- IS Class I, Groups A, B, C & D, T4 Ex ia; Class I, Zone 0, AEx/Ex ia IIC T4 Ga (-10°C ≤ Ta ≤ +50°C) to CSA Std. 157-92, UL 913 (7th Ed.), CAN/CSA-C22.2 No. 60079-0:2018, CAN/CSA-C22.2 No. 60079-11:2012, ANSI/UL 60079-0:2018 and ANSI/UL 60079-11:2012.
- Ex ia IIC T4 Ga (-10°C ≤ Ta ≤ +50°C) to ATEX IEC 60079-0:2017 and EN 60079-11:2011
- TR CU Kazakhstan (Ordering code 'K1') 0Ex ia II T4 Ga X (-10°C...+50°C)

PM700E (Differential)

Accuracy levels

1-Standard	±0.1% FS Total accuracy over -10 to 50 degrees C including NLH&R,1 year drift and calibration uncertainty
2-High	±0.05% FS Total accuracy over -10 to 50 degrees C including NLH&R,1 year drift and calibration uncertainty
3-Premium	±0.025% FS Total accuracy over -10 to 50 degrees C including NLH&R,1 year drift and calibration uncertainty

Accuracy specification

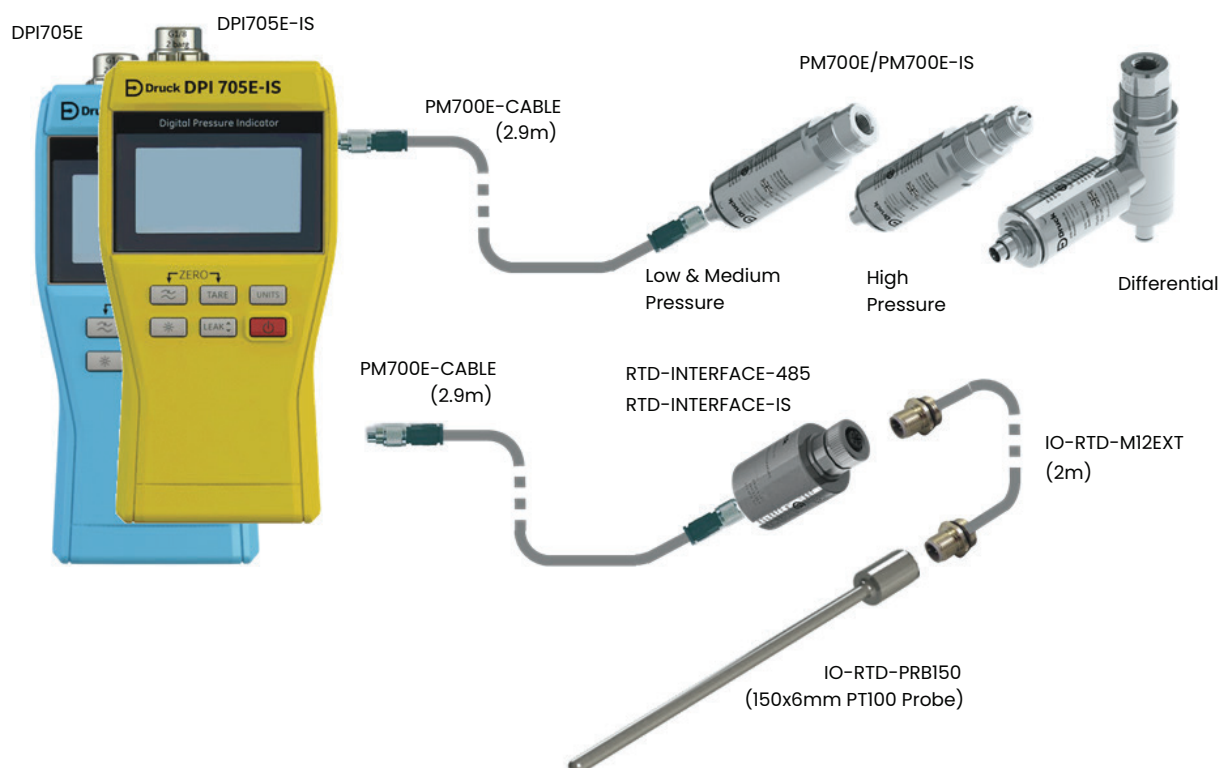
Gauge/differential sensors	Standard accuracy		High accuracy		Premium accuracy	
Pressure range	NLH&R	Total uncertainty	NLH&R	Total uncertainty	NLH&R	Total uncertainty
	-10 to 50°C (14 to 122°F)					
	(% FS)	(% FS)	(% FS)	(% FS)	(% FS)	(% FS)
25 mbar	0.3	0.348	N/A	N/A	N/A	N/A
70 mbar	0.1	0.121	N/A	N/A	N/A	N/A
200 mbar	0.08	0.1	N/A	N/A	N/A	N/A
350 mbar to 1 bar	0.08	0.1	0.04	0.05	N/A	N/A
2 bar to 200 bar	0.08	0.1	0.04	0.05	0.018	0.025

Absolute sensors	Standard accuracy		High accuracy		Premium accuracy	
Pressure range	NLH&R	Total uncertainty	NLH&R	Total uncertainty	NLH&R	Total uncertainty
	-10 to 50°C (14 to 122°F)					
	(% FS)	(% FS)	(% FS)	(% FS)	(% FS)	(% FS)
750 - 1150 mbar (Barometric)	0.08	0.1	0.04	0.075	N/A	N/A
350 mbar and 700 mbar	0.08	0.1	N/A	N/A	N/A	N/A
1 bar to 7 bar	0.08	0.1	0.04	0.075	N/A	N/A
10 bar to 1400 bar	0.08	0.1	0.04	0.075	0.018	0.063

Notes:

1. NLH&R Non-linearity, hysteresis and repeatability.
2. Total uncertainty includes 1 year drift and calibration uncertainty. For 350mbar to 7bar absolute ranges typical values are stated – for maximum values add 0.045%FS for standard accuracy, 0.055%FS for high accuracy. For 10bar absolute ranges and above maximum values are stated above.

Plug and play remote sensor range



Media compatibility

- **Exposed ranges** – Gauge/absolute sensors up to and including 200 mbar (and all differential sensors) are exposed.
- **Isolated ranges** – 350 mbar-1400 bar sensors are diaphragm isolated.

Pressure FS	Media compatibility
0 to 200 mbar	Non-condensing dry gases compatible with 316L Stainless Steel, Pyrex, Silicon, Gold, Aluminium, Glass, Silicon Dioxide and RTV Adhesive.
Differential sensor reference port	Non-condensing dry gases compatible with 316L and 304 Stainless Steel, Pyrex, Silicon, Glass, Silicon Dioxide and RTV Adhesive.
350 mbar to 200 bar	316L Stainless Steel and Hastelloy C276
350 to 1400 bar	Inconel 625 and 17-4PH Stainless Steel

Note: Only fluids that are compatible as per above table should be used, to ensure the integrity of the pressure sensor.

DPI705E General specifications

Working pressure	110% FS (alarm active beyond this range)
Sealing	IP54
Operating temperature	-10 to 50°C (14 to 122°F)
Storage temperature	-20 to 70°C (-4 to 158°F)
Humidity	0 to 90% RH non condensing
Shock and vibration	MIL-PRF-28800F for Class II equipment. 1 m Drop Tested @ -20°C (-4°F)
EMC	BS EN 61326-1
Electrical safety	BS EN 61010-1 UL 61010-1
Pressure safety	Pressure equipment directive class SEP. UL61010 Safe to 2xFS
Approval	CE, UKCA, EAC, KC, RCM marked, WEEE, REACH, EAC, KZ
Size and weight	L 200 mm, W 95 mm, D 43 mm 563 g maximum
RoHS	EU, UK, UAE, China Compliant
Resolution	5 digits

Pressure fittings

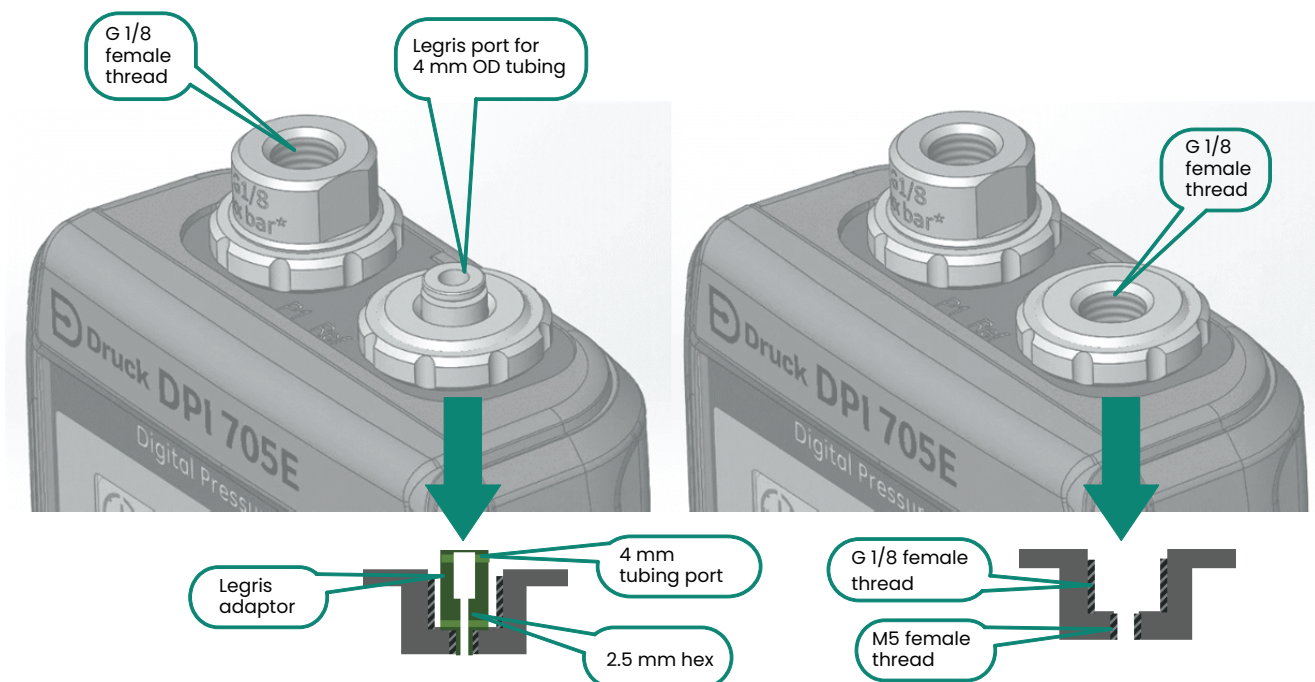
Internal and remote sensors are fitted with pressure connectors as detailed below:

- P1 – G1/8 Female direct sensor connection of instrument, welded non-removable (for ranges 200 bar and below) with optional adaptor:
- P2 – G1/4 Female adaptor that goes into the instruments G1/8 female
- P3 – 1/8 NPT Female adaptor that goes into the instruments G1/8 female
- P4 – 1/4 NPT Female adaptor that goes into the instruments G1/8 female
- P5 – Quick-Fit adaptor comes with G1/8 and 1/8 NPT adaptors
- P6 – 9/16 x 18 UNF Male direct sensor connection of instrument, welded non-removable (mandatory for ranges greater than/equal to 350 bar)

Differential reference port: Legris 4 mm tubing adaptor.

Adaptors

The Legris adaptor fitted to the reference port can be removed using a 2.5mm hex key leaving a G1/8 female thread and an M5 female thread.



Optional remote RTD temperature interface/probe

Enabling users to perform plug and play temperature measurement capability, displaying units as resistance or temperature.

The Interface only option P/N RTD-INTERFACE-485 for DPI705E Safe Area or P/N RTD-INTERFACE-IS for DPI705EIS Hazardous Area certification allows users to use their own PT100 RTD probe. RTD-INTERFACE is supplied with a field-rewireable M12 connector to allow users to connect their own wire-ended RTD's.

The probe option P/N RTD-PROBE-485 for DPI705E Safe Area or P/N RTD-PROBE-IS for DPI705EIS Hazardous Area comes with the interface and a 15 cm (6") class A PT100 probe. All RTD-PROBE-xxx and RTD-INTERFACE-xxx come with a 2.9m cable.

For further options please see Accessories section.



RTD Accuracy specification			
	NLH&R ±1°C (2°F) for 24 hrs (note 1)	Total Uncertainty 10° to 30°C (50° to 86°F) for 1 year (note 2)	Additional error -10° to 10°C (14° to 50°F) 30° to 50°C (86° to 122°F)
0 to 400 Ω	0.012% Rdg + 0.005% FS	0.015% Rdg + 0.006% FS	0.001% FS/°C
Pt 100 - Measured temp range -200 to 0°C		0.017% Rdg + 0.1°C	Excluding PT100 calibration error
Pt 100 - Measured temp range 0 to 850°C		0.0215% Rdg + 0.1°C	Excluding PT100 calibration error

Notes:

- 1. NLH&R includes stability at ±2°C for 24 hours, at temperatures within 10°C to 30°C.
- 2. Total uncertainty includes 1 year drift

RTD General specifications		
Measuring temperatures	IO-RTD-PRB150	-50°C to 200°C (when used with appropriate extension cable)
	RTD-INTERFACE (BODY)	-10°C to 50°C
	RTD-PROBE	-10°C to 50°C when directly plugged in to RTD-INTERFACE
		-25°C to 75°C when using supplied cable
	SPECIALIST RTD PROBES (Not supplied by Druck)	The capability of the RTD-INTERFACE (resistance range) with a suitable extension cable and suitable probe is 0 to 400Ω which equates to -250°C to +650°C for a PT100 probe.
Dimensions	IO-RTD-PRB150 RTD-PROBE	Probe tip: Ø6.35 x 150mm Probe total: Ø15 x 200mm
	RTD-INTERFACE	Body: Ø34 x 72mm length

Ordering information for DPI705E handheld pressure indicator

The DPI 705E and DPI 705E-IS are supplied with a user guide and calibration certificate as standard.

Model type

DPI705E Safe Area pressure indicator

DPI705EIS Hazardous Area pressure indicator

Accuracy (Now offering three levels of accuracy – see page 3 for availability by pressure range)

- 1** Standard
- 2** High
- 3** Premium

Pressure range and reference type; (Mandatory to select only one e.g. 008A for each configuration)

	Gauge (G)	Absolute (A)	Differential (L)	Barometric (B)
25 mbar/10 inH ₂ O/2.5 kPa	008G	–	008L	–
70 mbar/1 psi/7 kPa	01G	–	01L	–
200 mbar/3 psi/20 kPa	02G	–	02L	–
350 mbar/5 psi/35 kPa	03G	03A	03L	–
700 mbar/10 psi/70 kPa	04G	04A	04L	–
1 bar/15 psi/100 kPa	05G	05A	05L	–
750–1150 mbar/11–17 psi/ 75–115 kPa (Barometric)	–	–	–	05B
2 bar/30 psi/200 kPa	07G	07A	07L	–
3.5 bar/50 psi/350 kPa	08G	08A	–	–
7 bar/100 psi/700 kPa	10G	10A	–	–
10 bar/150 psi/1000 kPa	11G	11A	–	–
20 bar/300 psi/2 MPa	13G	13A	–	–
35 bar/500 psi/3.5 MPa	14G	14A	–	–
70 bar/1000 psi/7 MPa	16G	16A	–	–
100 bar/1500 psi/10 MPa	165G	165A	–	–
135 bar/2000 psi/13.5 MPa	17G	17A	–	–
200 bar/3000 psi/20 MPa	18G	18A	–	–
350 bar/5000 psi/35 MPa	–	20A	–	–
700 bar/10000 psi/70 MPa	–	22A	–	–

Pressure fitting – Refer to page 5

P1	G1/8 Female	For ranges less than 350 bar (welded non-removable)
P2	G1/4 Female adaptor	For ranges less than 350 bar
P3	1/8 NPT Female adaptor	For ranges less than 350 bar
P4	1/4 NPT Female adaptor	For ranges less than 350 bar
P5	Quick-Fit adaptor	For ranges less than 350 bar
P6	9/16 x 18 UNF Male	Mandatory for ranges greater than/equal to 350 bar (welded non-removable)

Hazardous area approvals (Mandatory to select one)

H0	No hazardous area approval (Default if DPI705E selected)
H1	ATEX, IECEx, CSA, CCOE, XPL, KCS, NEPSI, ECASEx
H2	INMETRO (Brazil)
K0	TR CU (Kazakhstan General Safety)
K1	TR CU (Kazakhstan Hazardous Area)

Pressure units

U0	All Pressure units (Default selection)
U1	Pa (Si) Pressure units only

Options (Mandatory to select one)

OP0	No option required
OP1	Negative calibration for gauge ranges 35 bar and below

DPI705EIS - 1 - 07G - P2 - H1 - U0 - OP1 (Example model numbers)

Ordering information for PM700E external remote pressure sensors

The PM 700E and PM 700E-IS are supplied with a user guide and calibration certificate as standard.

Model type

PM700E Safe Area External remote pressure sensor

PM700EIS Hazardous Area External remote pressure sensor

Accuracy (Now offering three levels of accuracy – see page 3 for availability by pressure range)

- 1** Standard
- 2** High
- 3** Premium

Pressure range and reference type; (Mandatory to select only one e.g. 008A for each configuration)

	Gauge (G)	Absolute (A)	Differential (L)	Barometric (B)
25 mbar/10 inH2O/2.5 kPa	008G	–	008L	–
70 mbar/1 psi/7 kPa	01G	–	01L	–
200 mbar/3 psi/20 kPa	02G	–	02L	–
350 mbar/5 psi/35 kPa	03G	03A	03L	–
700 mbar/10 psi/70 kPa	04G	04A	04L	–
1 bar/15 psi/100 kPa	05G	05A	05L	–
750–1150 mbar/11–17 psi/ 75–115 kPa (Barometric)	–	–	–	05B
2 bar/30 psi/200 kPa	07G	07A	07L	–
3.5 bar/50 psi/350 kPa	08G	08A	–	–
7 bar/100 psi/700 kPa	10G	10A	–	–
10 bar/150 psi/1000 kPa	11G	11A	–	–
20 bar/300 psi/2 MPa	13G	13A	–	–
35 bar/500 psi/3.5 MPa	14G	14A	–	–
70 bar/1000 psi/7 MPa	16G	16A	–	–
100 bar/1500 psi/10 MPa	165G	165A	–	–
135 bar/2000 psi/13.5 MPa	17G	17A	–	–
200 bar/3000 psi/20 MPa	18G	18A	–	–
350 bar/5000 psi/35 MPa	–	20A	–	–
700 bar/10000 psi/70 MPa	–	22A	–	–
1000 bar/ 15000 psi/ 100 MPa	–	23A	–	–
1400 bar/20000 psi/140 MPa	–	24A	–	–

Pressure fitting – Refer to page 5

P1	G1/8 Female	For ranges less than 350 bar (welded non-removable)
P2	G1/4 Female adaptor	For ranges less than 350 bar
P3	1/8 NPT Female adaptor	For ranges less than 350 bar
P4	1/4 NPT Female adaptor	For ranges less than 350 bar
P5	Quick-Fit adaptor	For ranges less than 350 bar
P6	9/16 x 18 UNF Male	Mandatory for ranges greater than/equal to 350 bar (welded non-removable)

Hazardous area approvals (Mandatory to select one)

H0	No hazardous area approval (Default if DPI705E selected)
H1	ATEX, IECEx, CSA, CCOE, XPL, KCS, NEPSI, ECASEX
H2	INMETRO (Brazil)
K0	TR CU (Kazakhstan General Safety)
K1	TR CU (Kazakhstan Hazardous Area)

Options (Mandatory to select one)

OP0	No option required
OP1	Negative calibration for gauge ranges 35 bar and below

PM700E - 1 - 07G - P2 - H0 - OP1 (Example model numbers)

Options

OP1 – Negative calibration

Optionally available for Gauge ranges of 35 bar and below (default for –3 accuracy). If this option is chosen, then the calibration certificate will include values down to –1 bar g.

UKAS calibration

We also offer UKAS accredited calibrations, please advise at the time of order placement if required.

Accessories

Please state any accessories required as separate items when placing order.

The DPI 705E Safe and Hazardous area versions are compatible with the following accessories unless otherwise specified.

Part code	Description
IO705E-CASE	DPI705 & DPI705E Carry Case
IO705E-CASE-IS	DPI705 & DPI705E Carry Case (IS)
IO705E-USB-RS485	DPI705E USB TO RS485 CABLE (for 4Sight2 calibrations)
IO705E-STRAP	DPI705E Magnetic Hanging Strap
PM700E-CABLE	PM700E Remote Sensor Cable 2.9m (Cable from DPI705E to PM700E or RTD-INTERFACE)
IO-ADAPT-G1/4	Adaptor G1/8 Male to G1/4 Female
IO-ADAPT-1/4NPT	Adaptor G1/8 Male to 1/4NPT Female
IO-ADAPT-1/8NPT	Adaptor G1/8 Male to 1/8NPT Female
IO-ADAPT-QF	G1/8 Male to Quick-fit Adaptor
182-190	Adaptor High Pressure 9/16UNF Female to 3/8BSP Male (suitable for Pressure Fitting option P5 up 1000 bar)
182-107	Adaptor G1/8 Male - Tube Connector 6/4mm (Directly fix 4mm ID hose to unit connection)
RTD-INTERFACE-485	RTD Interface only - RS485
RTD-INTERFACE-IS	RTD IS Interface only - RS485
RTD-PROBE-485	RTD Interface with PT100 probe - RS485 (supplied with 2.9m cable)
RTD-PROBE-IS	RTD IS Interface with PT100 probe-RS485 (supplied with 2.9m cable)
IO-RTD-MI2CON	Field Wireable MI2 connector 4-pin
IO-RTD-MI2EXT	MI2M to MI2F 2m ext lead (6.5 ft) 4-wire (Cable interface to the PT100 probe)
IO-RTD-PRB150	RTD Probe 150mm, PT100 steel Class A
IOHOSE-NP1	Pneumatic Hose 1m/3.28ft (Maximum 35 bar pressure)
IOHOSE-NP2	Pneumatic Hose 2m/6.56ft (Maximum 35 bar pressure)
IOHOSE-NP3	Pneumatic Hose 3m/9.84ft (Maximum 35 bar pressure)
IO620-HOSE-P1	Pneumatic Hose 1m/3.28ft (Maximum 400 bar pressure)
IO620-HOSE-P2	Pneumatic Hose 2m/6.56ft (Maximum 400 bar pressure)
IO620-HOSE-P3	Pneumatic Hose 3m/9.84ft (Maximum 400 bar pressure)
IO620-HOSE-H1	Hydraulic Hose 1m/3.28ft (Maximum 1000 bar pressure)
IO620-HOSE-H2	Hydraulic Hose 2m/6.56ft (Maximum 1000 bar pressure)
IO620-HOSE-H3	Hydraulic Hose 3m/9.84ft (Maximum 1000 bar pressure)
IO620-HOSE-P1-IS	Pneumatic Hose 1m/3.28ft (IS) (Maximum 400 bar pressure)
IO620-HOSE-P2-IS	Pneumatic Hose 2m/6.56ft (IS) (Maximum 400 bar pressure)
IO620-HOSE-P3-IS	Pneumatic Hose 3m/9.84ft (IS) (Maximum 400 bar pressure)
IO620-HOSE-H1-IS	Hydraulic Hose 1m/3.28ft (IS) (Maximum 1000 bar pressure)
IO620-HOSE-H2-IS	Hydraulic Hose 2m/6.56ft (IS) (Maximum 1000 bar pressure)
IO620-HOSE-H3-IS	Hydraulic Hose 3m/9.84ft (IS) (Maximum 1000 bar pressure)
IO620-BSP	Pressure Adaptor Set - BSP
IO620-NPT	Pressure Adaptor Set - NPT

Related products

Process calibrators

Druck offer a comprehensive range of portable pressure, temperature and electrical field calibrators. To help you select the right process calibration tools we have categorised our products into three ranges.

Druck's Essential range provides rugged, accurate and easy-to-use test and calibration tools.

Druck's Expert range introduces higher accuracy and increased functionality.

Druck's Elite range provides a modular system offering state-of-the-art multifunction communication and calibration.



PV212 High pressure hydraulic hand pump

Lightweight, easy to use, an ideal tool for calibrating pressure transmitters, pressure transducers, pressure switches and pressure gauges.

- Generates pressures up to 1000 bar (15,000 psi)
- Controlled pressure release and adjustment



PV411A Multifunction hand pump

High quality field proven pressure and vacuum hand pump. This product replaces four conventional hand pumps.

- Pneumatic pressures to 40 bar (600 psi)
- Hydraulic pressures to 700 bar (10,000 psi)
- Removable hydraulic reservoir which can be disconnected from the pump without draining the fluid
- Excellent low pressure control
- 95% vacuum



Laboratory and workshop instruments

Druck's PACE Series offers a comprehensive range of pressure controllers and indicators. Pair the PACE range with our 4Sight2 calibration management software and you have a complete, full automatic calibration solution for your DPI705E series, enabling you to conduct your very own DPI705E calibrations on-site. An in-house calibration strategy can help you stay in complete control of your DPI705E calibrations, reduce turn around time and minimise cost.

Pressure transducers and transmitters

Druck offer a wide range of pressure transducers and transmitters including analog, digital and HART/Smart devices. Please contact BH for further information

Supporting services

Druck's highly trained staff can support you, no matter where you are in the world. We can provide nationally accredited calibration (both initially and at periodic intervals), extended warranty terms, maintenance and even rental of portable or laboratory instruments. Please contact your local Druck customer care team for more information.

Druck offers a portfolio of high accuracy, high performance test and calibration equipment in safe or hazardous area (IS) variants that are ideal for the calibration and adjustment of Druck's pressure sensors.

Pneumatic and hydraulic test kits:

PV210 Low pressure pneumatic hand pump

Fully portable, easy to use, an ideal tool for low pressure calibration checks on pressure transmitters, pressure switches, indicators, recorders and controllers.

- Generates pressures to 3 bar (45 psi)
- Generates vacuum to 90%.



PV211 Pneumatic hand pump

Lightweight, high quality combined pressure and vacuum hand pump, designed to provide maximum pneumatic pressures efficiently and effortlessly.

- Pneumatic pressures in excess of 40 bar (600 psi)
- Generates vacuum to 96%



Delivering world class pressure measurement and calibration technology



Baker Hughes

druck.com