

Introduction

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1 INTRODUCTION

The Druck DPI 601 instrument is a portable, pressure indicator and calibrator. The microprocessor-based instrument uses an internal transducer to measure and display pneumatic pressures applied to the connection port. The instrument also produces voltages for externally connected transducers and transmitters and measures the resulting outputs.

An input socket allows for the connection of a combined power supply and battery charger. Input and output sockets provide for the connection of external transmitters and transducers.

A pneumatic hand-pump, volume adjuster and vent valve may also be fitted as options to meet user requirements. A further option, the hydraulic actuator version, produces high pressure using specific fluids.

1.1 Specification

Accuracy (integral transducers)

Combined non-linearity, hysteresis and repeatability

70 mbar to 35 bar range $\pm 0.05\%$ FS

35 bar to 700 bar range $\pm 0.1\%$ FS

Maximum working pressure 150% FS

Resolution

Instrument <100 mbar FS 0.01% FS

Instrument >100 mbar FS 0.005% FS

Dimensions

Size 320 mm x 195 mm x 125 mm

Weight 4 kg nominal (changes with options fitted)

Power Supplies

Internal power 4 x Size D (IEC R20)

..... zinc-carbon/alkaline/nickel-cadmium batteries

Usual battery life 50 hours (with no load on power output terminals)

Battery charging nickel-cadmium batteries

..... usual charge current 400 mA (14 hours)

External Power 3.5 to 14 Volts at 100 mA

..... 9 Volts DC at 500 mA

Power plug 2.1mm power plug, centre -ve supplying the

..... instrument and recharging the nickel-cadmium batteries

Signal sockets 4 mm

Environment

Operating temperature	-10 to +50°C
Storage temperature	-20 to +60°C
Calibrated temperature	0 to +40°C
Pollution degree	2

Temperature Effects

SPAN (0°C to +40°C averaged referred to 23°C)

Gauge and differential	$\pm 0.006\%$ of reading/°C for 70 mbar to 60 bar
Gauge over 60 bar	$\pm 0.4\%$ FS
Absolute	$\pm 0.3\%$ FS

Voltage Range

Maximum input and read-out	50V DC
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2V RANGE

Accuracy	$\pm 0.07\%$ of reading ± 2 digit *
Load current	200 nA max
Input resistance	10 M Ω
Temperature stability	$\pm 0.0075\%$ of reading/°C \square

20V RANGE

Accuracy	$\pm 0.07\%$ of reading ± 2 digit *
Load current	2 μ A max
Input resistance	10 M Ω
Temperature stability	$\pm 0.0075\%$ of reading/°C \square

50V RANGE

Accuracy	$\pm 0.07\%$ of reading ± 2 digit *
Load current	20 μ A max
Input resistance	10 M Ω
Temperature stability	$\pm 0.0075\%$ of reading/°C \square

Current Range

Maximum input and read-out	30mA DC
Accuracy	$\pm 0.1\%$ of reading ± 1 digit *
Sense resistance	10 Ω
Temperature stability	$\pm 0.0075\%$ of reading/°C \square

* Over 90 days at calibration temperature

\square Averaged over calibration temperature range

Power Output

Maximum combined load 30
mA

+24V Output

Accuracy $\pm 5\%$
Temperature stability $\pm 0.02\%/^{\circ}\text{C}$

+10V Output

Accuracy $\pm 0.1\%$
(Adjustable by an internal potentiometer)
Temperature stability $\pm 0.005\%/^{\circ}\text{C}$

Analogue Output

Output 2 Volts full-scale
(calibrated to pressure scale S1)
Bandwidth 2kHz (-3db)
Minimum load 1000 Ω
Accuracy
basic performance without compensation typically $\pm 0.2\%$ FS
Temperature error band $\pm 0.5\%$ FS
..... over calibrated temperature range 0 - 40°C
Stability (over three months) $\pm 0.02\%$ FS

Note: Continuing development sometimes necessitates specification changes without notice.