

nVision Lab Reference



Measurement Range:

Pressure: -1 bar to 3 bar – 0 bar to 1000 bar

Options: Barometric Reference

Options: Current, Voltage: 4 to 20 mA, 0 to

30 V Temperature: 0 to 400 Ohm

- **Discover events (spikes) or trends (leak) in real time**
- **Measure pressure, temperature, current and voltage**
- **Interchangeable, field-replaceable modules**
- **Enclosure is waterproof to IP67**
- **Mini USB for powering and downloading data**
- **Log and display 500,000 data points at up to 10 readings/second from 2 sensor modules simultaneously**

*By DAkkS according to DIN EN ISO / IEC 17025: 2005 accredited laboratory.
The accreditation is valid only for the certificate system D-K-15055-01-00
listed accreditation scope.*



Specifications

nVision is a portable device with an array of pressure, current/voltage, and temperature measuring modules that may be installed in either or both available chassis bays. It also features two efficient and user friendly power options; All sensor/source and power modules are field serviceable by the user for easy repair or changing test requirements.

The large 255 x 160 pixel backlit graphical display area is great for monitoring multiple channels simultaneously and can display up to 10 readings per second. For added annunciation of measurement limits, the product keypad has vivid LEDs incorporated. For downloading data and customizing the nVision to meet your needs, a mini USB B interface is available for data transfer or even powering the unit.

a: USB: mini USB B**

b: Display: 255 x 160 Graphical with integrated backlight. Display Rate selectable up to 10 readings/second

c: Weight 2,2kg

d: Dimensions: 115mm x 260mm x 145mm

Operating and compensated operating temperature range:

10°C bis +50°C

Storage temperature range:

0°C bis +75°C

Power Supply:

100 - 240 VAC, 50/60Hz

Humidity Range:

< 95% RH, non-condensing

Standard Items included with each nVision:

Calibration certificate:

Optional DAkkS (DKD)

CrystalControl (free download):

Configure your product to meet your needs.
Data log all data for display, analysis and archiving

USB A to mini USB b cable:

Connect to your nVision with 1.8m cable

* No change in accuracy over operating range. Sensor must be zeroed to achieve rated specifications.

** **WARNING: Do not use nVision mini USB in hazardous atmosphere.**

Pressure Measurement

Pressure modules:

These pressure modules come in a myriad of pressure ranges, All specifications are “of reading” to get the most out of your pressure measurement. Each pressure module comes with an MPM-1/4 MPT from Chrystal’s CPF system to adapt your product ¼ NPT fittings.

Accuracy

30% to 100% of full scale:

± 0.025% of reading up to 0.1% of reading

0 to 30% full scale:

± 0.0075% full scale to 0.03% full scale

Media compatibility:

Liquids and gases compatible with 316 steel

Connection:

Crystal CPF System: medium pressure female (MPF) (1/4” tube system with 7/16-20 threads)

	PSI	bar	KPa/MPa	Kg/cm ²	PSI	Kg/cm ²	inHG	inH2O	mmHG	MmH2O	kPa	bar	mbar	MPa
0,025% vom Messwert	30PSI(*)				0,001	0,0001	0,001	0,01	0,1	1	0,01	0,0001	0,1	
		3BAR(*)			0,001	0,0001	0,001	0,01	0,1	1	0,01	0,0001	0,1	
			300Kpa(*)								0,01	0,0001	0,1	
				3KG(*)	0,001	0,0001	0,001	0,01	0,1	1	0,01	0,0001	0,1	
	100PSI				0,01	0,0001	0,01	0,1	0,1	1	0,01	0,0001	0,1	0,00001
		10BAR			0,01	0,0001	0,01	0,1	0,1	1	0,01	0,0001	0,1	0,00001
			1MPa								0,01	0,0001	0,1	0,00001
				10KG	0,01	0,0001	0,01	0,1	0,1	1	0,01	0,0001	0,1	0,00001
	300PSI				0,1	0,001	0,01	0,1	1		0,1	0,001	1	0,0001
		30BAR			0,1	0,001	0,01	0,1	1		0,1	0,001	1	0,0001
			3MPa								0,1	0,001	1	0,0001
				30KG	0,1	0,001	0,01	0,1	1		0,1	0,001	1	0,0001
0,05% vom Messwert	1KPSI				0,1	0,001	0,1				0,1	0,001		0,0001
		100BAR			0,1	0,001	0,1				0,1	0,001		0,0001
			10MPa								0,1	0,001		0,0001
				100KG	0,1	0,001	0,1				0,1	0,001		0,0001
	3KPSI				0,1	0,01	0,1				1	0,01		0,001
		300BAR			0,1	0,01	0,1				1	0,01		0,001
		30MPa								1	0,01		0,001	
			300KG	0,1	0,01	0,1				1	0,01		0,001	
0,1% vom Messwert.	10KPSI				1	0,01					1	0,01		0,001
		700BAR			1	0,01					1	0,01		0,001
			70Mpa								1	0,01		0,001
				700KG	1	0,01					1	0,01		0,001
	15KPSI				1	0,01					1	0,01		0,001
		1000BAR			1	0,01					1	0,01		0,001
		100Mpa								1	0,01		0,001	
			1000KG	1	0,01					1	0,01		0,001	

* Density of water can be set to 4°C/ 60°F or 20°C/ 68°F with the keypad

Voltage and Current Measurement

Voltage and Current measurement mA/V Module

Intended for use with 4-20mA loop measurement, this module also is capable of measuring 24VDC supply voltages. Additionally the module has an auxiliary 3.3VDC fixed output for use in switch closure. Each MA20 module comes with P/N 3952 test lead kit.

mA (Current input)

Range:

4 – 20 mA

Resolution:

0.001 mA

Accuracy:

± (0.015% of reading + 0.002 mA)

Max Impedance:

≤ 15 Ω

Voltage Input

Range: 0 – 30 VDC
 Resolution: 0.001 VDC
 Accuracy: ± (0.015% of reading + 0.002 VDC)
 Input Resistance: ≥1 MΩ

Temperature Measurement

Temperature measurement RTD Module

Supports Pt100 RTD or RPT (100 Ohms at 0°C Resistance Temperature Detector) sensors conforming to DIN/IEC 60751 (or IEC751) with US, Euro and Lab calibration curves. Each RTD100 comes with P/N 3953 RTD Connection Kit.

Resistance Input

Range: 0 – 400 Ohms range for use with 100 Ohm RPTs
 Resolution: 0.01 Ω
 Accuracy: ± (0.015% of reading + 0.02 Ω)
 Display: °C, K, °F, R, Ω
 TCRs 0.003850 Ω/Ω/C (IEC 60751), 0.003911 Ω/Ω/C

Wiring:

HIP and Autoclave Engineers ¼” medium pressure fittings adapt with the new Crystal Pressure Fitting CPF line of products

(US Industrial Std), 0.003926 Ω/Ω/C
 2-, 3-, 4- wire support

M8 connector cable or terminal block with 2-, 3-, 4- wire support



Accessories

Chrystal Control Software (Communicate, Configure, Data Log, and Update for nVision product)

Protective Boot (Blue / Skydrol Resistant)

USB A to mini USB B Cable (1.8m for nV Chassis**)

Test Lead Kit (Two 1.8m, 2mm banana jack test leads with multi-purpose clip)

RTD Connection Kit (1 each IP67 rated 3m molded four conductor M8 cable, and one IP67 terminal block connector. RTD not included)

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19” Rack Mount Kit