

nVISION

Lab Reference



nVISION is a *very* accurate laboratory reference pressure calibrator that records and displays data *graphically*, on a large (255 x 160 pixel) backlit display. Temperature, voltage and current can also be measured and recorded—depending on which modules you choose.

nVISION gives you the ability to examine data on screen—no PC required. Compare pressure with temperature on a single screen for **leak and static tests**. Or use the scrolling and zooming features to observe the repeatability and high speed performance of **pressure safety valves** (with an accuracy never possible before).

Additionally, with a PC, a USB cable, and CrystalControl software (free), you can monitor and **download the data from an ongoing test without interrupting recording!** Any current and all previously recorded data can be viewed in .xls or .csv file formats, and saved for a **permanent record** of a test. CrystalControl includes several Excel report formats, or you can design your own. **Test reports have never been easier, faster or more accurate. nVISION!**

FEATURES

- Up to 0.025% of Reading accuracy.
- **Modules are complete and independent, containing dedicated signal conditioning and a microcontroller.**
- Modules can be easily removed and exchanged.
- Log and display 500,000 points at up to 10 readings/ second on two sensor modules simultaneously.
- Fully temperature compensated from 10°C to 50°C.
- **Uses Crystal's revolutionary new leak-free CPF fittings system.**
- Includes CrystalControl software to configure your product to meet your needs.
- Interactive real-time graphing of measurements.
- Discover events (spikes) or trends (leaks) in real time.



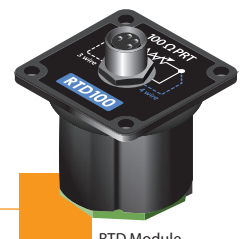
Pressure Module



mA/V Module



Nipple CPF to NPT



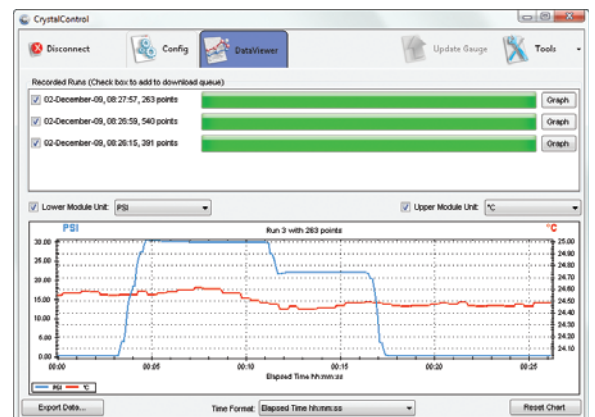
RTD Module



- A** USB port: mini USB B
- B** 255 x 160 pixel graphical display with integrated backlight.
- C** Upper Module Bay. Will accept any nVISION module: Pressure, mA/V, or Temperature.*
- D** Lower Module Bay. Will accept any nVISION module: Pressure, mA/V, or Temperature.*
- E** Control Panel

* Installing two MA20 modules simultaneously is not allowed.

With CrystalControl software you can view live or recorded data runs on your PC. Quickly zoom, change units, or export to .xls/.csv/.txt file format.



Specifications (All module specifications include all effects of linearity, hysteresis, repeatability, temperature, and stability for one year.)

- **Operating & Compensated Temperature Range:** 10°C to 50°C (50°F to 122°F) ■ **Storage Temperature Range:** 0°C to 75°C (32°F to 167°F)
- **Dimensions:** 115mm (4.5")H x 260mm x (10.2")W x 145mm (5.7") D ■ **Weight:** 2.2 kg (4.75 lbs) including two pressure modules
- **Power:** 100–240VAC, 50–60 Hz, with international plug adapters ■ **Humidity Range:** < 95% RH, non-condensing ■ **CE**

Pressure Measurement, Part Number, & Units/Resolution

	PSI	bar	kPa/MPa	kg/cm2	Overpressure	PSI	kg/cm2	inHg	inH2O*	mmHg	mmH2O	kPa	bar	mbar	MPa	
0.025% of Reading modules	30PSI	3BAR			3.0 x	0.001	0.0001	0.001	0.01	0.01	1	0.01	0.0001	0.1		
			300KPA		3.0 x	0.001	0.0001	0.001	0.01	0.01	1	0.01	0.0001	0.1		
				3KG	3.0 x	0.001	0.0001	0.001	0.01	0.01	1	0.01	0.0001	0.1		
	100PSI	10BAR			2.0 x	0.001	0.0001	0.01	0.1	0.1	1	0.01	0.0001	0.1	0.00001	
		1MPA			2.0 x	0.001	0.0001	0.01	0.1	0.1	1	0.01	0.0001	0.1	0.00001	
			10KG		2.0 x	0.001	0.0001	0.01	0.1	0.1	1	0.01	0.0001	0.1	0.00001	
	300PSI	30BAR			2.0 x	0.01	0.001	0.01	0.1	0.1		0.1	0.001	1	0.0001	
		3MPA			2.0 x	0.01	0.001	0.01	0.1	0.1		0.1	0.001	1	0.0001	
			30KG		2.0 x	0.01	0.001	0.01	0.1	0.1		0.1	0.001	1	0.0001	
	0.05% of Reading modules	1KPSI	100BAR			2.0 x	0.1	0.001	0.1				0.1	0.001		0.0001
			10MPA			2.0 x	0.1	0.001	0.1				0.1	0.001		0.0001
				100KG		2.0 x	0.1	0.001	0.1				0.1	0.001		0.0001
3KPSI		300BAR			1.5 x	0.1	0.01	0.1				1	0.01		0.001	
		30MPA			1.5 x	0.1	0.01	0.1				1	0.01		0.001	
			300KG		1.5 x	0.1	0.01	0.1				1	0.01		0.001	
0.1% of Reading modules		10KPSI	700BAR			1.5 x	1	0.01					1	0.01		0.001
			70MPA			1.5 x	1	0.01					1	0.01		0.001
				700KG		1.5 x	1	0.01					1	0.01		0.001
						1.5 x	1	0.01					1	0.01		0.001
						1.5 x	1	0.01					1	0.01		0.001
						1.5 x	1	0.01					1	0.01		0.001

Accuracy:

- 30% to 100% of Full Scale:** ±(0.025% of Reading)
- 0 to 30% of Full Scale:** ±(0.0075% of Full Scale)

Accuracy:

- 30% to 100% of Full Scale:** ±(0.05% of Reading)
- 0 to 30% of Full Scale:** ±(0.015% of Full Scale)

Accuracy:

- 30% to 100% of Full Scale:** ±(0.1% of Reading)
- 0 to 30% of Full Scale:** ±(0.03% of Full Scale)

* Density of water can be set to 4°C, 60°F or 20°C/68°F with CrystalControl software.

Pressure Module

See Pressure Measurement, Part Number, & Resolution table for part number scheme.

These pressure modules come in a myriad of pressure ranges to meet your needs. All specifications are “of Reading” to get the most out of your pressure measurement.

Media Compatibility:

Liquids and gases compatible with 316 stainless steel

Connection:

Crystal CPF finger-tight system: Medium Pressure Female (MPF) (1/4" medium pressure tube system with 7/16-20 threads. O-ring material: Viton 90)

System can interface wrench-tight with non-CPF medium pressure fittings, adapters, and piping systems such as HIP LM4 and LF4 Series, Autoclave Engineering SF250CX Female or Male Series. See CPF brochure for further details.

Current & Voltage Module

P/N: MA20

Intended for use with a 4-20mA loop measurement.

This module is also capable of measuring supply voltages and has an auxiliary fixed output for use in switch open/closure testing. Each MA20 module comes with a super flexible silicone test lead kit (P/N 3952).

Connection:

2mm banana jacks for sheathed plugs, 12.7mm (0.5") spacing

mA (Current) Input

Accuracy: ±(0.015% of rdg + 0.002 mA)

Range: 0–25 mA

Resolution: 0.001 mA or 0.01%

Units: mA, % 4–20

Voltage Burden @ 20mA: <0.35 V

HART Resistance: 250 Ω

Voltage Input

Accuracy: ±(0.015% of rdg + 0.002 VDC)

Range: 0–28 VDC

Resolution: 0.001 VDC

Units: VDC

Switch Test

Switch Type: Dry Contact

Temperature Module

P/N: RTD100

Calibrated for Pt100 RTD/PRT (100 Ohms at 0°C Platinum Resistance Temperature Detector) sensors conforming to DIN/IEC 60751 (or IEC751) with US, Euro or Lab calibration curves. An RTD is not included, but each RTD100 includes P/N 3953 RTD Connection Kit.

Resistance Input

Accuracy: ±(0.015% of rdg + 0.002 Ω)

Range: 0–400 Ohms range for use with 100 Ohm PRTs

Resolution: 0.01 Ω

Display: °C, K, °F, R, Ω

TCRs: 0.003850 Ω/°C (IEC 60751),

0.003911 Ω/Ω/°C (US Industrial Std),

0.003926 Ω/Ω/°C

Wiring: 2-, 3-, 4-wire support

Replacement Parts

Accessories / Replacement Parts

P/N: 3951

6' [1.8m] USB A to mini USB B Cable for nV Chassis

P/N: 3952

Test Lead Kit; two 39" [1m] 2mm banana jack test leads with multi-purpose clip

P/N: 3953

RTD Connection Kit; one IP67 terminal block connector (RTD module or sense element not included)

P/N: 4302

Rack Mount Kit; two rack mount ears with required hardware (Blank panel not included)

How to Order nVision Part Numbering order system:

NL - **LAB** - **Upper Chassis Module** - **Lower Chassis Module** = nVision Part Number

Part Number Example: NL-LAB-RTD100-30MPA

Notes:

- To order nVision with a single module, enter **BNKPLT** (blank plate) for either the upper or lower chassis module.
- Installing two MA20 modules simultaneously is not allowed.