

CALIBRATION

Calys IS ATEX Multifunction Documented Calibrators

- Accuracy up to 0,006%
- Light, Rugged, and Ergonomic for Field use
- Push & Lock, TC and 4 mm Industrial Plug Connection
- Dual Channels High Accuracy Thermometer
- Internal / External Pressure Modules
- Large Graphic Backlighted Display
- Simultaneous Measure and Simulation for TRX Calibration
- Real-Time Clock with Memory for In-Field Calibration Procedures ("as found" + "as left")
- ATEX Ex II 1G EEx ia IIC T4 (-20°C Tamb +50°C) X



CALIBRATION

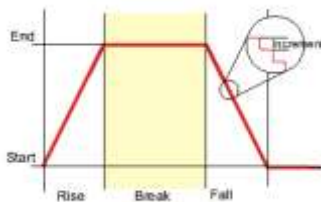
The CALYS IS series features:

- Calibrate temperature, pressure, current dc, voltage dc, frequency and resistance
- Dual channel display for simultaneous measure/source
- Measure and source 14 type of thermocouple and 10 RTD's
- 12 Vdc loop power supply
- Connection for internal and external pressure module up to 700 bar
- Pressure switch test and leak test
- Hold, zero, scale, Minimum, Maximum and Average
- Automatic Ramp/Step with programmable Time, Step and Soak
- Dual channel input and extended accuracy on **Calys 120** model
- Supports customized PRT's curve for
- enhanced temperature measurement
- Scalable 4-20 mA measure/source into
- effective engineering unit



Programmable generator

- Autoramp and Autostep capability with Start, End, and Step programmable parameters
- Single and continuous cycle with Start, End, Rises, Soaks, and Falls programmable parameters
- the signal value setting uses a unique in-line single-digit setting mode or a direct numeric entry
- direct keypad access to n.10 programmable memory stored values



Transmitter simulation program

The instrument can be used as a temporary signal converter replacement.

Any input signal (electric or pressure) can be converted into a 4-20 mA output. The galvanic insulation between the input and output channels allow also to use of this feature on the process.

Multichannel Data logging

The calibrator can be used as a multichannel datalogger for electrical and pressure signals. The graphic mode allows you to display the trend; the Replay function allows you to generate the electrical signal using the data stored..

TASK

The **Calys IS** can store and recall up to 10 complete instrument configurations. By pressing 2 keys only you can store or recall the configuration of both the channels and the display (including input and output values too). In this way the work on field is simpler and quicker.

Pressure modules (INT & EXT)

Single or dual range internal pressure modules can be configured to provide a lot of combinations for gauge, Absolute and differential pressure measurements.

External interchangeable pressure module can be connected to extend the pressure range up to 700 bar. The calibrator includes 23 selectable pressure units.



Transmitter Calibration

The Calys IS can be configured to easily manage the check and the calibration of any pressure and temperature transmitter. The wide display lets you simultaneously display the input and output values and to select the right units for the transmitter under test.

The current or voltage reading can be scaled/converted in % of span or in the engineering unit to simplify the verification operations. The measuring circuit is also able to power the loop for a direct connection with the transmitter under test.

All the Calys IS capabilities let the calibrator useful for all the checks and calibration activities.



Switch test

Temperature, signal and pressure switches can be tested using this advanced procedure. The calibrator will hold the display reading when the contact changes status.

Leak test

This procedure allows you to measure the pressure fall in a programmable time interval.



L

CALIBRATION

Overview

2 Channels

Dual simultaneous IN/OUT channels. mV, V, mA (active and passive loop), TCs, 3/4w RTDs, Frequency, Pulse.

"Push & Lock" binding posts

The multi-connection binding posts is an exclusive project designed to connect the calibrator in a simpler and faster way. The 3 different connection system available are:

Standard 4 mm industrial plugs
Mini isothermic TC's connectors
Push & Lock system for wires



External Interchangeable Pressure Modules

Connection for remote "SMART" Pressure modules. Calibration matrix and range are stored on the sensor. Gauge, Absolute and Differential models available. Accuracy $\pm 0.025\%$ F.S.

Mini-DIN TC Connector

Isothermic binding post for TC's with R_j compensation.

Graphic Display LCD Graphic Display

Large display with text and graphic capabilities. The rugged LCD is protected by a polycarbonate window from scratches and impacts.

Keypad

19 key sealed rubber keypad, for direct access to the main functions of the instrument.

Two Internal Pressure Sensors

Single or Dual AISI316 built-in pressure sensors (up to 20bar). Gauge, Absolute and Differential models available. Barometric reference sensor capability. Accuracy $\pm 0.025\%$ F.S.



Report of Calibration

Each Calys IS is factory calibrated and certified against AOIP Standards, which are periodically certified by an Internationally recognised Laboratory to ensure traceability, and shipped with a Report of Calibration stating the nominal and actual values and the deviation errors.

Firmware

The firmware is stored on a flash memory and allows a fast and easy upgrade of the instrument using the USB cable and the STFlash software.

Over-Voltage protection

The unit is equipped with an advanced system including thermal fuse (auto repair, do not need replacement), high voltage suppressor and resistor-diode voltage limiter.

EMC Conformity

The instrument fulfils the prevision of the directive 89/336/CEE Electromagnetic Compatibility.

CALIBRATION

Measure or source voltage

Measure or source	Range	Resolution		Accuracy	
			CALYS 60IS	Calys 80 IS	CALYS 120IS
mV	-20 to 200mV	1µV	±(0.02% RDG. + 3 µV)	±(0.01% RDG. + 3 µV)	±(0.006% RDG. + 3 µV)
V	-0.2 to 2V	10µV	±(0.02% RDG. + 10 µV)	±(0.01% RDG. + 10 µV)	±(0.006% RDG. + 10 µV)
	-2 to 12V	100µV	±(0.02% RDG. + 100 µV)	±(0.01% RDG. + 100 µV)	±(0.006% RDG. + 100 µV)

Input impedance:

>10 MΩ for ranges up to 2000 mV f.s.

>500 kΩ for ranges up to 20 V f.s.

Output impedance (emf output):

less than 0.5Ω with a maximum current of mA

Output noise (at 300 Hz):

<2 µVpp for ranges up to 200 mV f.s.,

<10 µVpp for ranges up to 2000 mV f.s.

<80 µVpp for ranges up to 20 V f.s.

Measure or source Current

Measure or source	Range	Resolution		Accuracy	
			CALYS 60IS	Calys 80 IS	CALYS 120IS
mA	0 to 21mA**	0.1µA	±(0.02% RDG. + 0.4µA)	±(0.01% RDG. + 0.4µA)	±(0.01% RDG. + 0.4µA)
mA (IN CH1)	-5 to 50mA	0.1µA	±(0.02% RDG. + 0.4µA)	±(0.01% RDG. + 0.4µA)	±(0.01% RDG. + 0.4µA)

Input impedance: <20 Ω at 1 mA

Maximum load resistance:

1000Ω at 20 mA

600Ω at 21 mA (IS model)

Loop Supply: 12V ± 5 % (IS model)

Measure or Source Resistance

Measure or source	Range	Resolution		Accuracy	
			CALYS 60IS	Calys 80 IS	CALYS 120IS
Ω (measure)	0 to 500 Ω	10m Ω	±(0.02% rdg. + 12m Ω)	±(0.01% rdg. + 12m Ω)	±(0.008% rdg. + 12m Ω)
	0 to 5000 Ω	100 mΩ	±(0.02% rdg. + 120m Ω)	±(0.01% rdg. + 120m Ω)	±(0.008% rdg. + 120m Ω)
Ω (source)	0 to 500 Ω	10m Ω	±(0.02% rdg. + 40m Ω)	±(0.01% rdg. + 40m Ω)	±(0.008% rdg. + 40m Ω)
	0 to 5000 Ω	100 mΩ	±(0.02% rdg. + 320m Ω)	±(0.01% rdg. + 320m Ω)	±(0.008% rdg. + 320m Ω)

Connections: 2, 3 and 4 wires

Source resistance effects: ±1 µV error for 1000Ω source resistance

Ω simulation excitation current: from 0.100 to 4 mA without incremental error

Ω measurement excitation current: 0.2 mA

Maximum load resistance: 1000 Ω at 20 mA 600 Ω at 20 mA (IS model only)

Frequency :

Measure or source	Range	Resolution		Accuracy	
			CALYS 60IS	Calys 80 IS	CALYS 120IS
Frequency	1 to 200 Hz	0.001Hz	±(0.005% rdg.+0.001Hz)	±(0.005% rdg.+0.001Hz)	±(0.005%rdg.+0.001Hz)
	1 to 2 kHz	0.01Hz	±(0.005% rdg.+0.01Hz)	±(0.005% rdg.+0.01Hz)	±(0.005% rdg.+0.01Hz)
	1 to 20 kHz	0.1Hz	±(0.005% rdg.+0.1Hz)	±(0.005% rdg.+0.1Hz)	±(0.005% rdg.+0.1Hz)
Pulse	0 à 10 ^b	1 pulse			

Input impedance:>500KΩ

CALIBRATION

Measure or Source RTD

Measure or source	Range	Resolution	Accuracy		
			CALYS 60IS	Calys 80 IS	CALYS 120IS
Pt100 IEC $\alpha= .3850$	-200 to 850°C	0.01°C	$\pm(0.02\% \text{ RDG.} + 0.05^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.05^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.05^\circ\text{C})$
Pt100 IEC $\alpha= .3926$	-200 to 850°C	0.01°C	$\pm(0.02\% \text{ RDG.} + 0.05^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.05^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.05^\circ\text{C})$
Pt100 $\alpha= .3902$	-200 to 650°C	0.01°C	$\pm(0.02\% \text{ RDG.} + 0.05^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.05^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.05^\circ\text{C})$
Pt100 JIS SAMA	-200 to 600°C	0.01°C	$\pm(0.02\% \text{ RDG.} + 0.05^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.05^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.05^\circ\text{C})$
Pt200	-200 to 850°C	0.1°C	$\pm(0.02\% \text{ RDG.} + 0.15^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.15^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.15^\circ\text{C})$
Pt500	-200 to 850°C	0.1°C	$\pm(0.02\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$
Pt1000 IEC OIML	-200 to 850°C	0.01°C	$\pm(0.02\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$
Cu10	-70 to 150°C	0.1°C	$\pm(0.02\% \text{ RDG.} + 0.4^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.4^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.4^\circ\text{C})$
Cu100	-180 to 150°C	0.1°C	$\pm(0.02\% \text{ RDG.} + 0.05^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.05^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.05^\circ\text{C})$
Ni100	-60 to 180°C	0.1°C	$\pm(0.02\% \text{ RDG.} + 0.05^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.05^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.05^\circ\text{C})$
Ni120	0 to 150°C	0.1°C	$\pm(0.02\% \text{ RDG.} + 0.05^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.05^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.05^\circ\text{C})$

Connections: 2, 3 and 4 wires

Source resistance effects: $\pm 1 \mu\text{V}$ error for 1000 Ω source resistance

Rtd simulation excitation current: from 0.100 to 4 mA without incremental error

Rtd measurement excitation current: 0.2 mA

Rtd cable compensation: up to 100 m Ω (for each wire)

Rtd cable compensation error (Pt100): $\pm 0.005^\circ\text{C}/\Omega$ of total wire

Maximum load resistance: 1000 Ω at 20 mA 600 Ω at 20 mA (IS model only)

Measure or Source Thermocouples

Measure or source	Range	Resolution	Accuracy		
			CALYS 60IS	Calys 80 IS	CALYS 120IS
Tc J	-210 to 1200°C	0.01 °C	$\pm(0.02\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$
Tc K	-270 to 1370°C	0.01 °C	$\pm(0.02\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$
Tc T	-270 to 400°C	0.01°C	$\pm(0.02\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$
Tc R	-50 to 1760°C	0.1°C	$\pm(0.02\% \text{ RDG.} + 0.2^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.2^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.2^\circ\text{C})$
Tc S	-50 to 1760°C	0.1°C	$\pm(0.02\% \text{ RDG.} + 0.2^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.2^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.2^\circ\text{C})$
Tc B	50 to 1820°C	0.1°C	$\pm(0.02\% \text{ RDG.} + 0.3^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.3^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.3^\circ\text{C})$
Tc C	0 to 2300°C	0.1°C	$\pm(0.02\% \text{ RDG.} + 0.2^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.2^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.2^\circ\text{C})$
Tc G	0 to 2300°C	0.1°C	$\pm(0.02\% \text{ RDG.} + 0.3^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.3^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.3^\circ\text{C})$
Tc D	0 to 2300°C	0.1°C	$\pm(0.02\% \text{ RDG.} + 0.3^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.3^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.3^\circ\text{C})$
Tc U	-200 to 400°C	0.01°C	$\pm(0.02\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$
Tc L	-200 to 760°C	0.01°C	$\pm(0.02\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$
Tc N	-270 to 1300°C	0.01°C	$\pm(0.02\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$
Tc E	-270 to 1000°C	0.1°C	$\pm(0.02\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$
Tc F	0 to 1400°C	0.1°C	$\pm(0.02\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$	$\pm(0.01\% \text{ RDG.} + 0.1^\circ\text{C})$

Measure or Source Thermocouples

Engineering unit: °C/°F/K selectable

Resolution: 0.01°C / 0.01°F

Temperature scale: ITS90 and IPTS68 selectable

Reference junction compensation:

internal automatic from -10 °C to +55 °C

external adjustable from -50 °C to +100 °C

remote with external Pt100 from -10°C to +100 °C (only on Calys 120 IS model)

Rj compensation drift: $\pm 0.002^\circ\text{C}/^\circ\text{C}$ (from -10 °C to +45 °C) - Class A Pt100

Input impedance (Tc ranges): >10 M Ω



CALIBRATION

Pressure :

Pressure media: AISI 316 SS compatible fluids (water, gas, and oil)

Temperature compensation: Automatic with built-in calibration matrix.

Engineering units: mbar, bar, hPa, kPa, Mpa, kg/cm², kg/m², psi, mmH₂O, cmH₂O, mH₂O, Torr, atm, lb/ft², inH₂O, FTH₂O, mmHg, cmHg, mHg, inHg

Accuracy: the above accuracies are stated for 365 days and include non linearity, hysteresis, and repeatability. The average temperature coefficient, inside the temperature compensated range, is $\pm 0.002\%$ of rdg/°C (w.t.r.+23°C/+73°F).

Internal sensors

-100 to 100 mbar Gauge	res. 0.001mbar
-500 to 500 mbar Gauge	res. 0.01mbar
-0.95 to 2 bar Gauge	res. 0.01mbar
2 bar Absolute	res. 0.01mbar
-0.95 to 7 bar Gauge	res. 0.1mbar
-0.95 to 20 bar Gauge	res. 0.1mbar
20 bar Absolute	res. 0.1mbar



Accuracy: $\pm 0.025\%$ F.S.

Ranges: see table on ordering code

Resolution: see table on ordering code

Overpressure: 125% F.S.

Port: (female) 1/8" BSP

External sensors

Accuracy: $\pm 0.025\%$ F.S.

Ranges: see table on ordering code

Resolution: see table on ordering code

Overpressure: 125% F.S.

Port: (male) 1/4" BSP

Connection wire length: 2 meters



Gauge		
EE812009	from -100 to 100 mbar (1.5 PSI)	res. 0.001mbar
EE812010	from -500 to 500 mbar (7 PSI)	res. 0.01mbar
EE812011	from -0.95 to 1 bar (15 PSI)	res. 0.01mbar
EE812012	from -0.95 to 2 bar (30 PSI)	res. 0.01mbar
EE812013	from -0.95 to 7bar (100 PSI)	res. 0.1mbar
EE812014	from -0.95 to 20 bar (300 PSI)	res. 0.1mbar
EE812015	from -0.95 to 35 bar (500 PSI)	res. 1mbar
EE812016	from 0 to 70 bar (1000 PSI)	res. 1mbar
EE812017	from 0 to 150 bar (2000 PSI)	res. 1mbar
EE812018	from 0 to 350 bar (5000 PSI)	res. 10mbar
EE812019	from 0 to 700 bar (10000 PSI)	res. 10mbar
Absolute		
EE812020	from 0 to 2 bar (30 PSI)	res. 0.01mbar
EE812021	from 0 to 20 bar (300 PSI)	res. 0.1mbar

Advanced Functions

Calculation functions: hold, max, min, offset, zero, average

In/Out data memory: 10 data with manual or automatic recall

Convert function: displays the electrical equivalent of the engineering unit

Scale factor: setting with zero and span programmable within -399999 and +999999

Square root: in combination with scale factor

General Specifications

General Specifications

Calibration: self learning technique with automatic procedure

Channel 1-Channel 2 insulation: 250 Vdc

Common mode rejection: 140 dB at ac operation

Normal mode rejection: 60 dB at 50/60 Hz

Display: graphic LCD display

Measurement sampling time: 250 ms

Digital interface: full bidirectional RS232

Power supply: external charger and

rechargeable Ni-MH battery

Battery life (typical):

8 h on Tc and mV input/output (backlight Off)

3 h with 20 mA simulation (backlight Off)

Recharging time (typical): 8 h at 90% and 10 h on IS model at 99% with instrument switched off.

Line operation: 100V - 120 V - 230V - 240 Vac with the external battery charger

Line transformer insulation: 2500 Vac

Operating environment

temperature range:

from -10 °C to +55 °C (from -10°C to +50°C on IS model)

Storage temperature range: from 0 °C to +60

°C (excluding batteries)

Humidity: max 95%RH non condensing

Case: Injection moulded polycarbonate case (injection molded ATEX approved material on IS model)

Sealing: IP54

Weights: nett 1.4 Kg gross 2.5 Kg

Dimensions: 290x98x57 mm

CALIBRATION

DATA CAL Calibration Management SOFTWARE

An easy and fully programming of CALYS 3 main functions

- Instrument configuration
- Data Management
- Calibration



Instrument configuration

The instrument can be 100% configured using Datacal interface:

- Input channel: quantity measured, type of sensor, scale, scaling value, display parameters, unit, tare, tare value
- Output channel: quantity measured, period, start point, repeat function, ramp and steps function
- Sensors: name, date of last calibration, type, unit, calibrated values
- Measurement bursts: number of measures/burst, sampling period, trigger parameters, number of samples, frequency...

Create, modify and store an unlimited number of configuration profiles on computer

Data management

- Real-time processing of data
- Graphical and table display and monitoring of data
- Storage with unlimited capacity
- Easy printing from software
- Export all the data to spread sheets as .xls or .ascii
- Erase data from device

Calibration

Paperless calibration procedures

Create complete calibration procedures directly with Datacal and define:

- calibration method
- channels
- measurement or simulation function
- adjustment set points
- sequence mode

Issue your own customized calibration certificates

After calibration of the instrument, the calibration report is sent back to Datacal for processing and shaping

Header-block

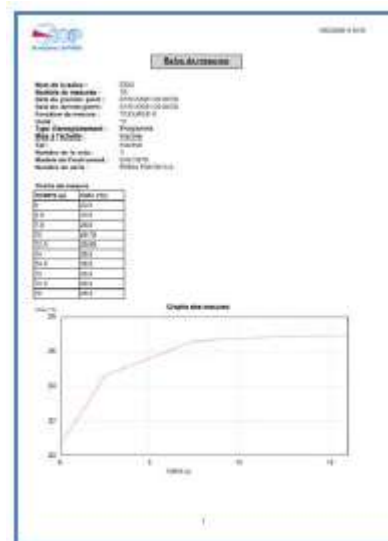
Date

Logo

Text field with information on measurement conditions

Table with measured values and possible differences

Graphical display of values



CALIBRATION

Standard package: Calibrator, rubber holster, charger, instruction manual and calibration report

Calys 60 IS - A - 00

Calys 60IS accuracy: $\pm 0.02\%$ rdg
2 channels (IN - OUT)

Calys 80 IS - A - BB

Calys 80IS accuracy: $\pm 0.01\%$ rdg
2 channels (IN - OUT)

Calys 120IS - A - BB

Calys 120IS: accuracy $\pm 0.006\%$ rdg
2 channels (IN - IN/OUT)

Table A
Basic

Line charger

	Calys 80IS	Calys 120IS
1	1	120V 50/60 Hz with USA plug
2	2	230V 50/60 Hz with Schuko plug
3	3	230V 50/60 Hz with UK plug
4	4	230V 50/60 Hz with Europe plug
5	5	100V 50/60 Hz with US/Japan plug

Table B
Calys 60IS

Internal Pressure sensor - AISI316SS - $\pm 0.025\%$ PE

	Calys 80IS	Calys 120IS	
0	0	Sans option	
--	2	-100 to 100 mbar Gauge	res. 0.001mbar
--	3	-500 to 500 mbar Gauge	res. 0.01mbar
--	5	-0.95 to 2 bar Gauge	res. 0.01mbar
--	5A	2 bar Absolute	res. 0.01mbar
--	6	-0.95 to 7 bar Gauge	res. 0.1mbar
--	7	-0.95 to 20 bar Gauge	res. 0.1mbar
--	7A	20 bar Absolute	res. 0.1mbar

IMPORTANT:

Calys 60IS can not accept internal pressure sensors.
Calys 80IS and 120IS accept up to 2 internal sensors

External pressure sensors-AISI 316SS

Gauge		
EE812009	from -100 to 100 mbar (1.5 PSI)	res. 0.001mbar
EE812010	from -500 to 500 mbar (7 PSI)	res. 0.01mbar
EE812011	from -0.95 to 1 bar (15 PSI)	res. 0.01mbar
EE812012	from -0.95 to 2 bar (30 PSI)	res. 0.01mbar
EE812013	from -0.95 to 7bar (100 PSI)	res. 0.1mbar
EE812014	from -0.95 to 20 bar (300 PSI)	res. 0.1mbar
EE812015	from -0.95 to 35 bar (500 PSI)	res. 1mbar
EE812016	from 0 to 70 bar (1000 PSI)	res. 1mbar
EE812017	from 0 to 150 bar (2000 PSI)	res. 1mbar
EE812018	from 0 to 350 bar (5000 PSI)	res. 10mbar
EE812019	from 0 to 700 bar (10000 PSI)	res. 10mbar
Absolute		
EE812020	from 0 to 2 bar (30 PSI)	res. 0.01mbar
EE812021	from 0 to 20 bar (300 PSI)	res. 0.1mbar

Accessories

Carrying case



BB880048 : Vynil carrying case with shoulder strap

BB880043 : Compact Vynil carrying case with shoulder strap

Hand pumps and accessories for pressure



F3280013
Hand pump up to 2 bar (vacuum and pressure)



F3280019
Hand pump up to 40 bar (vacuum and pressure)



F3280015
Hand pump up to 700 bar (vacuum and pressure)



AOIP
BP 182
91133 Ris Orangis CEDEX
FRANCE
+33 169 028 900
www.aop.com



The above mentioned characteristics are subject to change without prior notice

SOFIMAE laboratory on our premises of Ris-Orangis
*Ranges available on www.cofrac.fr