

PHYSICS – DIGITAL PRECISION MEASURING DEVICES

For highest precision we provide our PHYSICS measuring devices for precise measurements in meteorology, chemical, biotechnology, food industries, water analytics, science and research as well as for quality assurance or inspection equipment monitoring in the industrial sector. By means of real-time recording or logger function it is furthermore possible to make rapid and precise temperature recordings directly on site.

GENERAL TECHNICAL DATA

- + 2 output channels
- + 2 lines, statically 7/16 segments
- + Display illumination: 2 LEDs, white
- + 7 silicone keys
- + ABS casing (max. 70 °C), light grey
- + Degree of protection: IP54, dust- and splash-proof
- + Dimensions and weight: L 127 x W 83 x H 42 mm, 290 g

Calibration for sensors and measuring devices on request.

FURTHER GENERAL FEATURES

- + Test functions: segment monitoring, range monitoring, probe error check, battery check
- + Measuring functions: measuring value, zero-setting, max.-/min. value documentation, 2-step adjustment, scaling (optional: multi-point calibration for temperature values)
- + Function menu: min/max values, average value of time, individual values or measuring points
- + Interfaces: USB, RS232, Ethernet, Bluetooth, analogue
- + Language selection: German, English, French

PHYSICS 100

Digital measuring device for precise measurements with a wide range of measuring units and sensor technologies, e.g. temperature, resistance thermometer Pt100, thermocouples, NTC, air humidity, pressure etc. Beside the PHYSICS 100-1 type with one input channel we offer also Type 100-2 with 2 input channels (both input channels or measuring points can be covered simultaneously).



General Specifications	
Probes	thermocouples, resistance thermometers, humidity, pressure, NTC and more
Measuring input	100-1: 1 input channel 100-2: 2 input channels
Memory	for 100 values
Input channels	for more than 65 measuring ranges
Galvanic isolation	Semiconductor relays (50 V)
Channels	4 function channels e.g. for dual probes 4 internal functions (e.g. difference)
AD converter	Delta-Sigma 16 bit, 2.5 or 10 M/s
Probe voltage	battery operation: 9 V, max. 150 mA mains operation: 12 V, max. 150 mA
Resolution	0.01 °C
Order-No.	63731 PHYSICS 100-1 (1 input channel) 63874 PHYSICS 100-2 (2 input channels)

FURTHER FEATURES

- + Intelligent probe display with probe specific functions (cold-junction compensation etc.)

PHYSICS – DIGITAL PRECISION MEASURING DEVICES

PHYSICS 300

Complex digital measuring device with data logger function* for precise measurements with a wide range of measuring units and sensor technologies, e.g. temperature, resistance thermometer Pt100, thermocouples, NTC, air humidity, pressure, electric values etc.

Subject to type of probe 2, 3 or 4 input channels or measuring points can be covered simultaneously.



General Specifications	
Probes	thermocouples, resistance thermometers, humidity, pressure, NTC and more.
Measuring input	300-2: 2 input channels 300-4: 4 input channels*
Memory	for 99 values
Input channels	for more than 70 measuring ranges
Galvanic isolation	semiconductor relays (50 V)
Channels	4 function channels e.g. for dual probes 4 internal functions (e.g. difference)
AD converter	delta sigma 16 bit, 2.5 or 10 M/s
Probe voltage	battery operation: 9 V, max. 150 mA mains operation: 12 V, max. 150 mA
Internal memory	*only model 300-4: approx. 12 000 measured values
Resolution	0.01 °C
Order-No.	63884 PHYSICS 300-2 (2 input channels) 63885 PHYSICS 300-4 (4 input channels and datalogging function)

FURTHER FEATURES

- + Intelligent probe display with probe specific functions (cold-junction compensation etc.)
- + Measurement menu freely configurable, measured values can be displayed numerically or graphically in bar chart form
- + Sleep mode for long-term documentations

PHYSICS – DIGITAL PRECISION MEASURING DEVICES

PHYSICS 1000

Ludwig Schneider's high-precise digital measuring device PHYSICS 1000 offers highest resolution, accuracy and linearity for mains independent measurements.

With its ultra high resolution of 0.001 °C this digital measuring device provides dependable and reproducible results of mobile temperature measurements in quality assurance, process monitoring and production control in the chemical, pharmaceutical and food industries as well as for research and development.



General Specifications	
Probes	resistance thermometers Pt100
Measuring input	2 input channels
Galvanic isolation	semiconductor relays (50 V)
Measuring range	-200 °C to +400 °C
Self calibration	zero point, measuring current
Accuracy	0.010 K of value ±1 digit
Temperature drift	0.003 %/°C
AD converter	delta sigma 24 bit, 2.5 M/s
Internal RAM memory	100 measured values, memory stick for over 25 000 measured values optional, (data logging function)
Resolution	0.001 °C
Order-No.	66637

FURTHER FEATURES

- + Reference measuring instrument for temperature
- + Highest accuracy by multi-point adjustment of the Pt100 temperature sensor

THERMOCOUPLES FOR PHYSICS - DIGITAL MEASURING DEVICES

SUITABLE TO PHYSICS MEASUREMENT DEVICES



Pt100 RESISTANCE THERMOMETER TO IMMERSE

Assembly: WT-MI-303

General Specifications

Immersion resistance thermometer Pt100, acc. to DIN EN 60751 class A or AA, 4-wire connection, with sheathed cable made of stainless steel, compensating line fix connected through transition casing made of stainless steel, teflon/silicone insulated, cable length: 2 m, cable outlet secured by means of heat-shrink tubing.

PLUG PHYSICS RESOLUTION 0.01 °C (CLASS A)

Sheat Ø	Nominal length	Range of application	PHYSICS 100	PHYSICS 300	PHYSICS 1000	Order-No.
3 mm	150 mm	-50 °C to +200 °C	x	x		70133
3 mm	300 mm	-90 °C to +350 °C	x	x		70136
3 mm	400 mm	-90 °C to +350 °C	x	x		70139
4 mm	150 mm	-50 °C to +200 °C	x	x		70127
4 mm	300 mm	-90 °C to +350 °C	x	x		70112
4 mm	400 mm	-90 °C to +350 °C	x	x		70130

PLUG PHYSICS RESOLUTION 0.001 °C (CLASS AA)

Sheat Ø	Nominal length	Range of application	PHYSICS 100	PHYSICS 300	PHYSICS 1000	Order-No.
3 mm	250 mm	-50 °C to +250 °C			x	70969



Pt100 RESISTANCE THERMOMETER TO IMMERSE OR INSERT WITH HANDLE

Assembly: WT-MI-303-HG

General Specifications

Resistance thermometer Pt100, acc. to DIN EN 60751 class A, 4-wire connection, with sheathed cable made of stainless steel, compensating line fix connected through handle made of plastic, teflon/silicone insulated, cable length: 2 m, cable outlet secured by means of bend protection.

TO IMMERSE

With plug PHYSICS resolution 0.01 °C (class A)

Sheat Ø	Nominal length	Range of application	PHYSICS 100	PHYSICS 300	PHYSICS 1000	Order-No.
3 mm	150 mm	-50 °C to +200 °C	x	x		70094
3 mm	250 mm	-90 °C to +350 °C	x	x		59954
3 mm	300 mm	-90 °C to +350 °C	x	x		70097
3 mm	400 mm	-90 °C to +350 °C	x	x		70100
4 mm	150 mm	-50 °C to +200 °C	x	x		70103
4 mm	300 mm	-90 °C to +350 °C	x	x		70106
4 mm	400 mm	-90 °C to +350 °C	x	x		70109

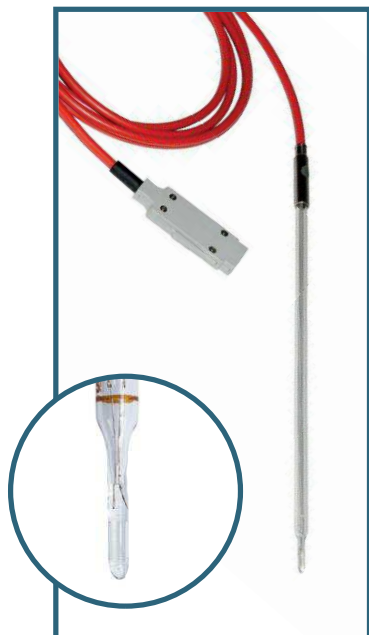
TO INSERT

With plug PHYSICS resolution 0.001 °C (Class AA)

Sheat Ø	Nominal length	Range of application	PHYSICS 100	PHYSICS 300	PHYSICS 1000	Order-No.
4 mm	150 mm	-50 °C to +200 °C	x	x		59966

THERMOCOUPLES FOR PHYSICS - DIGITAL MEASURING DEVICES

SUITABLE TO PHYSICS MEASUREMENT DEVICES



Pt100 RESISTANCE THERMOMETER OF GLASS (N16B)

Assembly: WT-GL-3/6-303

General Specifications

Labor resistance thermometer of glass Pt100, acc. to DIN EN 60751 class A, 4-wire connection, with glass shaft $\varnothing$ 6 mm, narrowed at sensor to $\varnothing$ 3 mm, compensating line fix connected through transition casing made of stainless steel, teflon/silicone insulated, cable length: 2 m, cable outlet secured by means of heat-shrink tubing.

PLUG PHYSICS RESOLUTION 0.01 °C (CLASS A)

Glass shaft $\varnothing$	Nominal length	Range of application	PHYSICS 100	PHYSICS 300	PHYSICS 1000	Order-No.
3/6 mm	150 mm	-50 °C to +250 °C	x	x		70148
3/6 mm	200 mm	-50 °C to +250 °C	x	x		70152
3/6 mm	250 mm	-50 °C to +250 °C	x	x		70145*
3/6 mm	300 mm	-50 °C to +250 °C	x	x		70155
3/6 mm	350 mm	-50 °C to +250 °C	x	x		70158

PLUG PHYSICS RESOLUTION 0.001 °C (CLASS AA)

Glass shaft $\varnothing$	Nominal length	Range of application	PHYSICS 100	PHYSICS 300	PHYSICS 1000	Order-No.
3/6 mm	250 mm	-50 °C to +250 °C			x	67056*

* With ring marks on the glass shaft according to the immersion depths of standardized precision glass thermometers.



Pt100 RESISTANCE THERMOMETER PTFE COATED

Assembly: WT-K-6

General Specifications

Cable resistance thermometer Pt100, acc. to DIN EN 60751 class A, 4-wire connection, compensating line directly connected with protective conduit made of stainless steel, VA-wire netting/teflon insulated, cable length: 2 m, with PTFE coating from measuring tip to +20 mm connection cable.

WITH PLUG PHYSICS RESOLUTION 0.01 °C (CLASS A)

Protective conduit $\varnothing$	Nominal length	Range of application	PHYSICS 100	PHYSICS 300	PHYSICS 1000	Order-No.
6 mm	70 mm	-50 °C to +200 °C	x	x		70171
6 mm	100 mm	-50 °C to +200 °C	x	x		70175
6 mm	150 mm	-50 °C to +200 °C	x	x		70178
6 mm	200 mm	-50 °C to +200 °C	x	x		70181



Pt100 RESISTANCE THERMOMETER FOR SURFACES

General Specifications

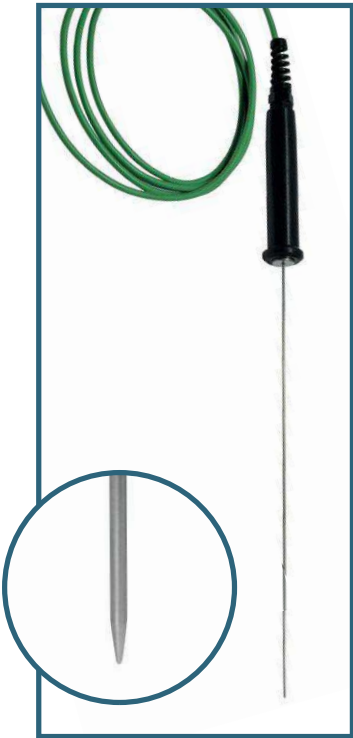
Surface resistance thermometer Pt100, acc. to DIN EN 60751 class A, 4-wire connection, compensating line fix connected through handle made of plastic, PVC insulated, cable length: 2 m.

PLUG PHYSICS RESOLUTION 0.01 °C (CLASS A)

Contact surface $\varnothing$	Nominal length	Range of application	PHYSICS 100	PHYSICS 300	PHYSICS 1000	Order-No.
9 mm	150 mm	-100 °C to +130 °C	x	x		71099

THERMOCOUPLES FOR PHYSICS - DIGITAL MEASURING DEVICES

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THERMOCOUPLE TO IMMERSE OR INSERT WITH HANDLE

TYPE K (NICR NI)

Assembly: TE-MI-303-HG,

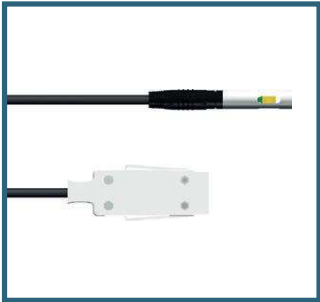
General Specifications
 Thermocouple with handle type K NiCr-Ni, acc. to DIN EN 60584 class 2, made of Inconel, compensating line fix connected through handle made of plastic, teflon/silicone insulated, cable length: 2 m, cable outlet secured by means of bend protection.

TO IMMERSE
 plug Physics resolution 0.1 °C (class 2)

Sheat Ø	Nominal length	Range of application	PHYSICS 100	PHYSICS 300	PHYSICS 1000	Order-No.
1,5 mm	250 mm	-100 °C to +400 °C	x	x		59961
3 mm	250 mm	-100 °C to +400 °C	x	x		59962

TO INSERT (WITH INSERTION TIP)
 plug Physics resolution 0.1 °C (class 2)

Sheat Ø	Nominal length	Range of application	PHYSICS 100	PHYSICS 300	PHYSICS 1000	Order-No.
3 mm	150 mm	-50 °C to +200 °C	x	x		59963



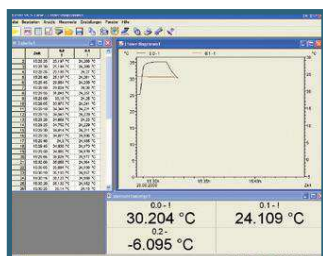
HUMIDITY PROBE, DIGITAL, WITH AIR PRESSURE MEASURING

General Specifications
 Digital humidity probe with air pressure measuring for temperature, humidity and air pressure. With plugable, digital sensor element in slotted sensor cap. All sensor characteristic and adjustment data are stored on the data storage medium of the sensor module itself. Measuring range: 5 to 98 % r.H. / -20 °C to +60 °C, 700 to 1 100 mbar, not condensing

Diameter	Cable length	PHYSICS 100	PHYSICS 300	PHYSICS 1000	Order-No.
9 x 65 mm	2000 mm	x	x		63953

ACCESSORIES FOR PHYSICS DIGITAL MEASURING DEVICES

General Specifications	Order No.
Mains adapter 230 V, 2000 mA	57090
Mains adapter 120 V, 300 mA (US)	71191
USB cable (galvanically isolated, max. 115.2 kB)	57091
Bluetooth adapter plug, class 2	58321
Memory plug with MM card for further measuring values	57733
Software PHYSICS View	58306
Hard protective case	61972
Sturdy protective cover	58804



SOFTWARE PHYSICS VIEW

PHYSICS View is a software package that can be used to evaluate and display measured data on PHYSICS devices (with 2 measuring inputs). PHYSICS View runs under MS-Windows and can be used to drive a PHYSICS device with up to four measuring points. As soon as the connection between the computer and the measuring instrument has been established the program detects and lists these measuring points automatically. The measured values are then read at a sampling rate selected by the user.



CASE FOR PHYSICS DEVICE AND ACCESSORIES

Hard protective case with foam inserts (picture may differ from original product)



STURDY PROTECTIVE COVER FOR PHYSICS MEASURING DEVICE (GREY)

With combi-bracket for standing/hanging