

Digital Display

For strain gauge units, potentiometers,
DC/DC sensors and standard signals

Model 9180

CAD data 2D/3D for this device:
Download directly at www.traceparts.com
Info: refer to data sheet 80-CAD-EN



Desktop version



Panel-mounted version

- Up to 8 sensor parameters can be saved (optional)
- For force, pressure or torque measurements using strain gauge sensors
- For distance or angle measurements with potentiometer or DC/DC sensors
- Processing of standard signals $\pm 1 \text{ V} / 10 \text{ V} / 0 \dots 1 \text{ mA}$, $0(4) \dots 20 \text{ mA}$
- Min. or max. peak values via an additional display
- TARE and HOLD function
- Generation of up to 4 limit signals (optional)
- RS232 or RS485 (optional)
- Analog or BCD output (optional)
- Measurement accuracy $< 0.1 \%$
- Scaling possible using teach-in procedure or by entering sensor data directly
- Convenient configuration and evaluation software DigiVision

Application

Model 9180 supports force, pressure and torque sensors operating on the strain gauge principle, as well as the connection of position and angle sensors in potentiometer or DC/DC configuration. It also allows the measurement of process signals $\pm 1 \text{ V} / 5 \text{ V} / 10 \text{ V}$ or $0 \dots 1 \text{ mA}$, $0(4) \dots 20 \text{ mA}$. The current measured value is indicated on the 14 mm high LED main display, while a second display located directly below provides a reading of the peak value.

The display is particularly suitable for highly accurate measurements due to the high accuracy of 0.1%. It is also possible to monitor up to 4 limit values and provide the results via relay or transistor outputs. Thus the process value display can be used for classification, process and control tasks. The current measured value is frozen on the display by activating an external HOLD signal. The TARE function is useful for balancing out previous loads for example. The optional serial interface can be used to transfer measured values and perform device settings. Powerful PC software is available for this on request.

Description

State-of-the-art microprocessor technology has allowed the realization of numerous special functions for practical use. Menu guidance of device setup is standard. Self-explanatory abbreviations greatly facilitate this process so that even inexperienced users can manage without operating instructions. First, the user specifies the type of input signal or sensor. Strain gauge, potentiometer or process signals $0 \dots 1 \text{ mA}$, $4 \dots 20 \text{ mA}$ or $\pm 1 \text{ V}$, $\pm 10 \text{ V}$ as well as DC/DC sensors can be selected. Then the calibration process is selected. Users can choose between teach-in or calibration depending on the sensor protocol. The decimal point can be moved as required. The sensor excitation stated in the technical specifications is set automatically upon selection of the sensor type except with process signals. A choice of three excitations is available for process signals. Complete electrical isolation of the measurement channel prevents measurement values from being falsified by ground loops.

9180 EN

Technical Data

Connectable sensors

Strain gauge

Connection system:	4 wire
Bridge resistance:	120 ... 1000 Ω
Bridge voltage:	15/ 30/ 60/ 300 mV, selection via menu
Sensor excitation:	10 V/ 120 mA, 5 V/ 120 mA*

Potentiometer

Track resistance:	500 Ω ... 10 k Ω
Sensor excitation:	10 V/ 120 mA, 5 V/ 120 mA*

Standard signals, DC/DC sensors and transmitters

Voltage input:	± 1 V/ ± 10 V
Resolution:	0.1 mV respectively 1 mV
Input resistance:	1 M Ω

Current input:	0 ... 1 mA, 0 (4) ... 20 mA
Resolution:	1 μ A
Load:	15 Ω

Transmitters and DC/DC sensors:	10 V/ 120 mA
Excitation:	24 V/ 30 mA 5 V/ 120 mA*

Transmitters can be connected in 2, 3 or 4 wire configuration.

*) if the jumper is set (default setting)

Standard functions

Peak-value memory

Minimum or maximum value on an auxiliary display, cancellation with RESET via keyboard or digital control input.

HOLD function

Freezing of the measured value on the main display.

Active: via ext. HOLD signal

TARE function

Balancing out an offset.

The balanced-out value can also be shown on the auxiliary display.

Active: via button or ext. TARE signal

Digital control inputs

RESET, HOLD, TARE, MIN/MAX (opto-electrically)

Active: 24 V

General specifications

Accuracy

Resolution:	15 Bit
Measurement error:	0.1 % v. E. \pm 3 digits
Temperature coefficient:	50 ppm/K
Warm-up period:	10 minutes

LED display

Main display:	- 99999 ... + 99999,	height 14 mm
Auxiliary display:	- 99999 ... + 99999,	height 8 mm
Decimal point:		programmable

Measurement rate

Environmental conditions

Operating temperature: 0 ... 50 °C

Relative humidity: < 95 %

Protection class: Front panel IP65

Dimensions/weight

Panel-mounted version:	Dimensions (W x H x D): 96 x 48 x 120 mm
	Installation depth incl. connector: approx. 150 mm
	Cut-out in front panel: 92 x 44 mm
	Weight: 600 g
	Housing material: plastic

Desktop version: Dimensions (W x H x D): 155 x 90 x 210 mm
Weight: 1.2 kg
Housing material: metal/plastic

Electrical connection

Panel-mounted version: snap-in plug connection
Desktop version: jacks on the rear panel

Power supply

Desktop version: 115/230 VAC 50 Hz*
Panel-mounted version: 115/230 VAC 50 Hz*
or 24/ 48 VAC 50 Hz*
* - 60 Hz on request

Power consumption: 5 VA
10 VA without options
with all options

Switch over by means of a jumper

Options

Digital set point alarm outputs

2 relay contacts 250 VAC/ 150 VDC/ 8 A, for 2 limiting values or
4 relay contacts 50 VAC/ DC/ 0.2 A, for 4 limiting values or
4 transistors open C. switching n or open E. switching P,
50 V/ 50 mA for 4 limits each,
opto-decoupled
Response time: 250 ... 750 ms, depending on the filter setting

Analog output

Ranges: Voltage 0 ... 10 V
Load > 50 Ω
Drift 0,2 mV/K
or Current 4 ... 20 mA
Load < 800 Ω
Drift 0,5 μ A/K
(Selection between 0 ... 10 V and 4 ... 20 mA via the menu)

Resolution: 12 Bit

Potential separation to signal input

Accuracy: 0.1 % F.S.

Signal response time: 60 ms

Serial interface

RS232 (V.24) or RS485 (half duplex)
Baud rate: 1200 ... 19200
Data transmission rate: 10 values/sec. at 19200 baud

Networking via RS485 by means of a converter (model 9180-Z001)

BCD interface

Level: 24 V/ TTL
The BCD option excludes all other options.

The options analog output; RS232 or RS485 (only one) and
2 relays, 4 relays or 4 O.C. (only one);
can be used simultaneously.

Calibration

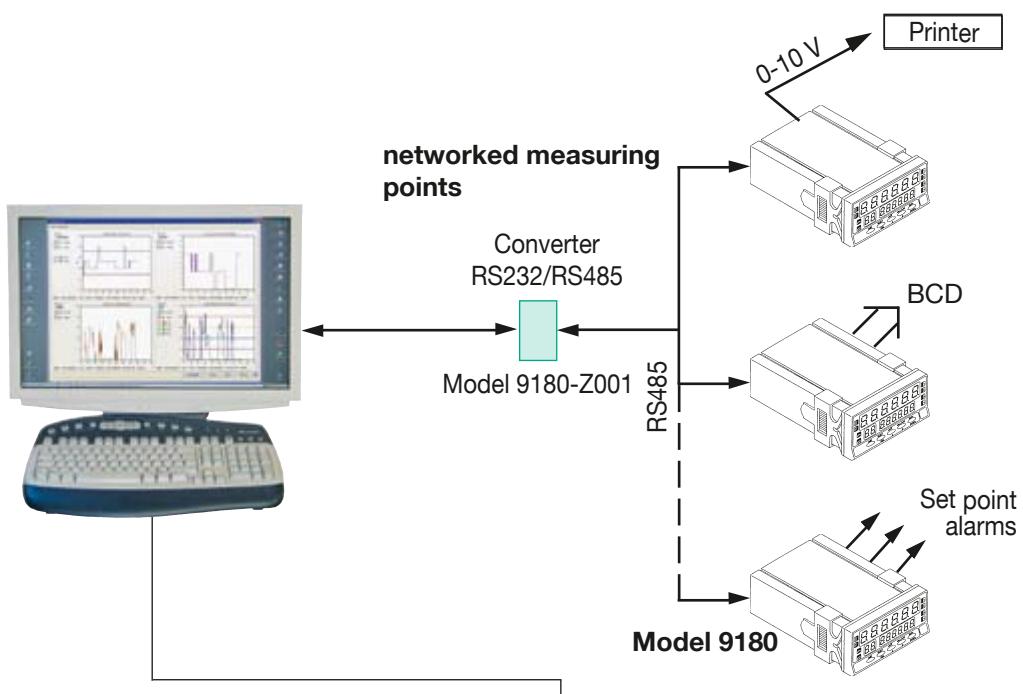
Two basic procedures are possible; in both cases, one display value is allocated to two input variables each (two-point calibration):

1. In the teach-in mode, the two input variables are applied physically as measurement signals to the input. These are assigned to the corresponding display values by pressing an enter key.
2. During calibration in accordance with the sensor protocol, the two signals are not applied physically, but read off from the sensor protocol and entered via the keyboard.

The CAD drawing (3D/2D) for this device can be imported online directly into your CAD system.

Download via www.burster.com or directly at www.traceparts.com. For further information about the burster traceparts cooperation refer to data sheet 80-CAD-EN.

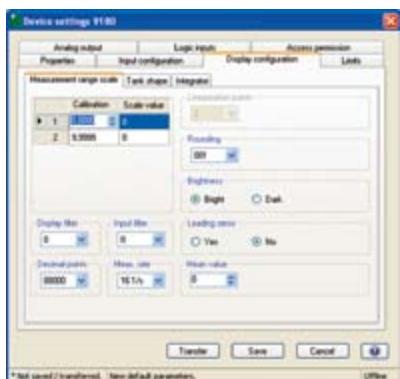
Measuring Data Acquisition and Evaluation



DigiVision 9180-P100 Configuration and Analysis Software

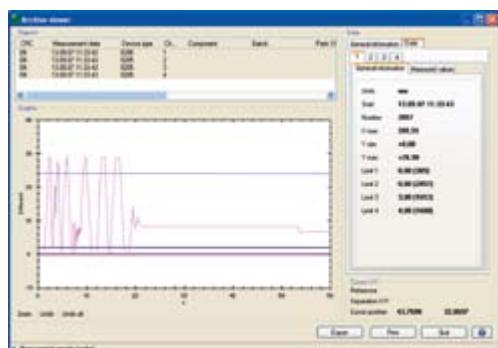
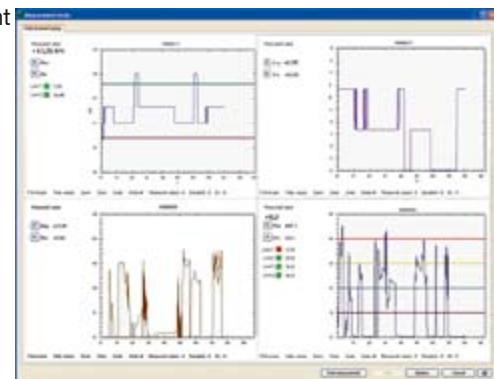
- Comfortable device finder
- Instrument parameterization
- Instrument data adopted automatically eg. scaling, limit settings
- Back-up function for instrument data
- Simultaneous display of up to 8 measurement curves
- Different measurement rates can be combined
- Different triggers can be set: global or channel-specific

- Creation of instrument groups
- Report finder for location group reports and individual reports
- Documenting individual measurement curves with various options e.g. serial number, batch counter, day counter
- Export function to Excel
- Communication with a controller unit (PLC, etc.) via RS232 or Ethernet



Parameterizing of devices

8 measurement curves



Archive viewer

Excel file

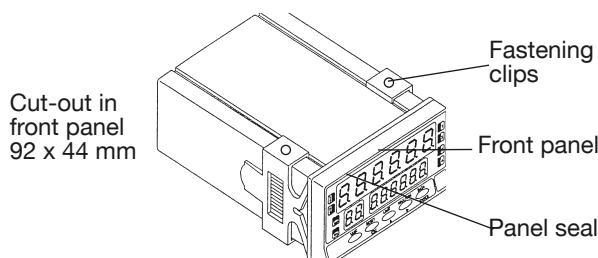
Measurement values		
Counter	Time	Measurement value
1	0.002380	0.000
2	0.006600	0.000
3	0.118190	0.000
4	0.219000	0.000
5	0.318000	0.000
6	0.417900	0.000
7	0.516800	0.000
8	0.615700	0.000
9	0.714600	0.000
10	0.813500	0.000
11	0.912400	0.000
12	1.011300	0.000

9180 EN

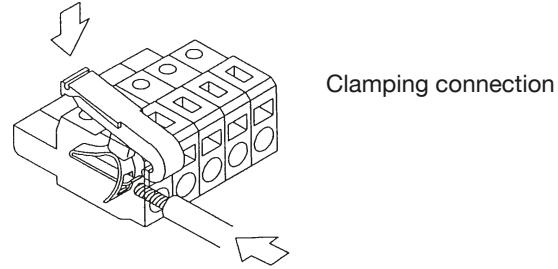
Displays and Operating Panel



Dimensions Mounting



Rear Connection

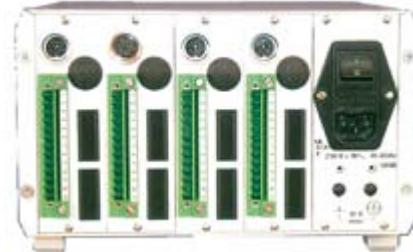


Multichannel Measurement Systems for any Numbers of Channels in Desktop Housing (please enquire)

Front view:
Up to 16 panel-meters in one common housing possible.



Back view:
All sockets for sensors, control signals and serial interfaces are completely installed.



Order Code

Digital indicator

Version model 9180 - V

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	0	0	0

8 sensor parameters

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			-1

Options on extra charge:

Housing and power supply

Panel-mounted version 115/230V-50 Hz²⁾

<input type="checkbox"/>	0
--------------------------	---

Panel-mounted version 24V/48V-50 Hz²⁾

<input type="checkbox"/>	1
--------------------------	---

Desktop version 115/230V-50 Hz²⁾

<input type="checkbox"/>	3
--------------------------	---

Desktop version 24V/48V-50 Hz²⁾

<input type="checkbox"/>	6
--------------------------	---

Analog output

without

<input type="checkbox"/>	0
--------------------------	---

0 ... 10 V / 4 ... 20 mA

<input type="checkbox"/>	1
--------------------------	---

Interface

without

<input type="checkbox"/>	0
--------------------------	---

RS232

<input type="checkbox"/>	1
--------------------------	---

RS485

<input type="checkbox"/>	2
--------------------------	---

BCD¹⁾

<input type="checkbox"/>	3
--------------------------	---

Set point alarm outputs

without

<input type="checkbox"/>	0
--------------------------	---

2 relays

<input type="checkbox"/>	1
--------------------------	---

4 relays

<input type="checkbox"/>	2
--------------------------	---

4 transistor open C. n-switched

<input type="checkbox"/>	3
--------------------------	---

4 transistor open E. p-switched

<input type="checkbox"/>	4
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¹⁾ - Important! The BCD option does not allow any additional options (limiting value or analog output) and is not available as desktop version either.

²⁾ - 60 Hz on request

DigiVision - One for All

burster

One PC Software for the acquisition
of measuring data supports
following instrument series

NEW

- **Sensor Master 9163**
- **Digital Indicator 9180**

- **DIGIMASTER 9181**
- **USB Sensor Interface 9205**



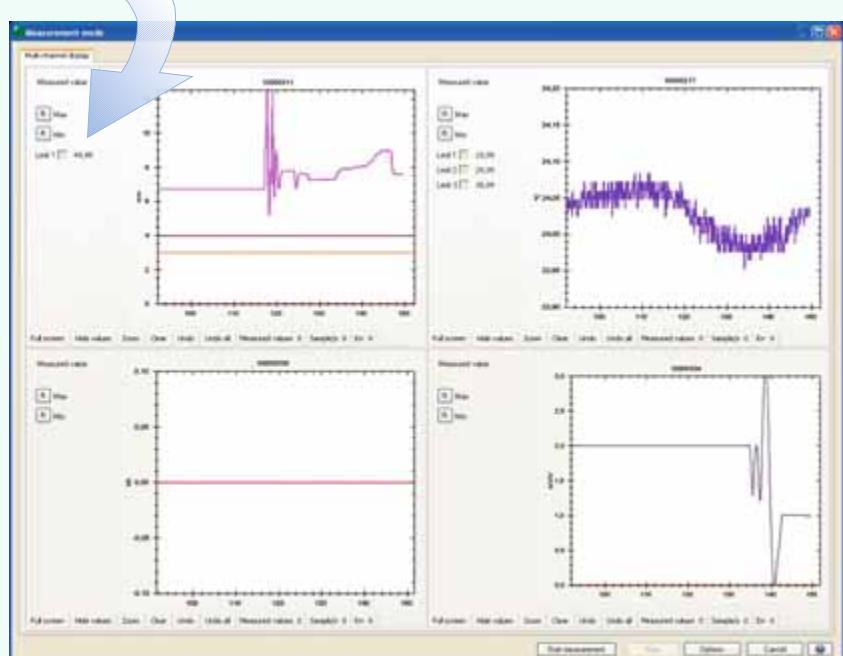
- Easy-to-handle instrument recognition
- Intuitive handling through evident and clearly structured operator interface
- Parameter setting without license code
- Automatic take-over of instrument parameters

Show whatever you want !

Up to 8 simultaneous measurements

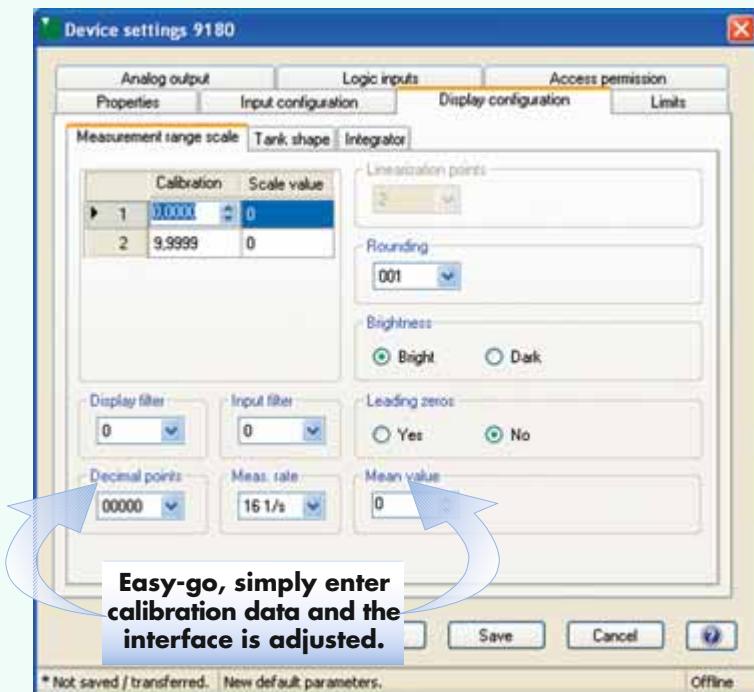
Innovative visualization tools for process parameters

Outline of manifold process and test information



Input mask for configuration towards the affiliated sensor

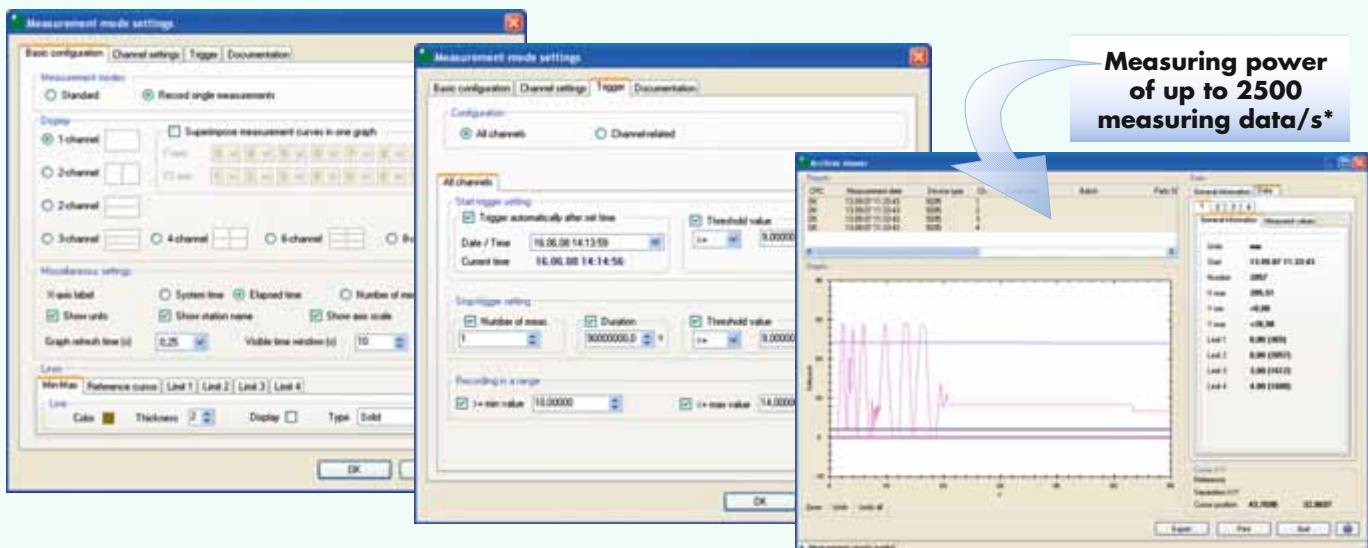
burster



→ Compilation of a device specific back-up file

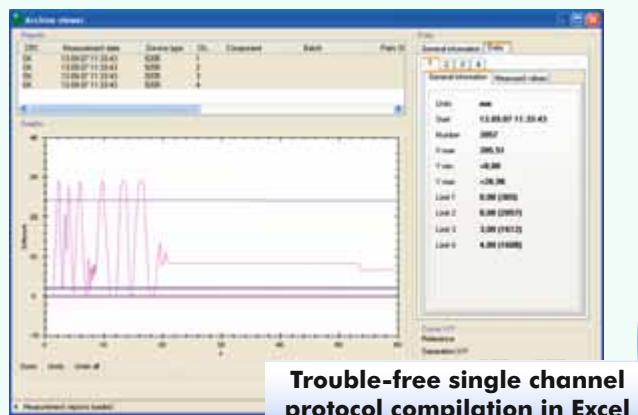
Simple parameter setting of the logic inputs (or interlinking)

Adjustment of different options, as start/stop trigger, measuring rate; storage of the measuring data and access rights



→ Measuring power
of up to 2500
measuring data/s*

Export to Excel file



Trouble-free single channel protocol compilation in Excel

Burstier Test-1 Measured values		
Original measurement file	C:\Dokumente und Einstellungen\All Users\Documents\burstier\Digitalisat	
Continuously file id	1	
Begin	13.09.2007 11:33:40	
Company	Burstier	
Tester	User	
Device caption	100000311	
Device-SN	100000311	
Unit	nm	
Number of values	2057	
Measurement values		
Counter	Time	Measurement value
1	0.002280	0.000
2	0.018680	0.000
3	0.118190	0.000
4	0.219000	0.000
5	0.319980	0.000
6	0.417980	0.000
7	0.518660	0.000
8	0.610250	0.000
9	0.717440	0.000
10	0.821640	0.000
11	0.917930	0.000
12	1.014240	0.000

- * 200 measurements/s for 9205-P001
2500 measurements/s for 9205-P100