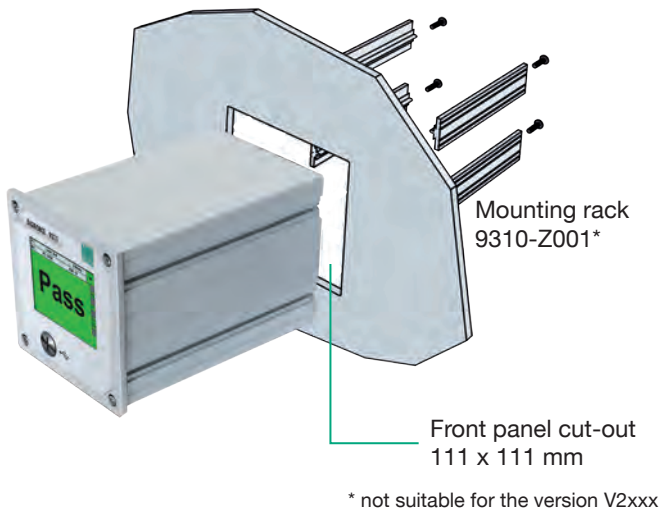


Curve analysis (Viewer - version V0xxx with display only)

You can use the "Viewer" tool to look at the most recent 50 measurement curves either as individual curves or as a curve array. In addition, you have detailed numeric data available for each measurement, such as individual results from the graphical evaluation elements and the associated window entry and exit coordinates. If you are getting occasional NOK measurements, you can then use this tool to look at the measurement curve even after the test, and take suitable corrective action to prevent NOK parts. The DigiControl PC software can be used to retrieve and analyse these sets of curves.

Panel mounting



PC software DigiControl

The **basic version**, which is available free of charge, supports full device configuration, creation of backups, and retrieval and display of measurement curves, including all evaluation results and statistics. An especially convenient feature is the definition of graphical evaluation elements such as envelopes, windows, trapeziums and thresholds based on a set of curves of measured master or reference parts. Alternatively, ready-archived measurements can also be used to create new evaluations. The **Plus version** (9311-P100) of the PC software DigiControl provides, in addition to the standard functions, an automatic production mode, which, for example, logs production measurement data with clear parts references. The resultant measurement logs are not only available in the internal program format, but can also be imported into EXCEL data. Even for

NEW - cabinet version (V2xxx)

The cabinet module (V2xxx) is designed for snap-rail mounting according to DIN EN 50222. This version is running with 24 VDC supply voltage. Status information including evaluation results is provided by a set of monitoring LEDs. The V2xxx module can be fully configured and parameterized using the DigiControl PC-Software. The optional fieldbus interfaces like PROFINET also offers access to the configuration parameters. DIGIFORCE® 9311 cabinet module (V2xxx) includes all the standard performance features like the display version does. Networking can take place in parallel via fieldbus interface to the PLC (switch function with PROFINET and EtherNet/IP available) and via standard Ethernet to a host system. It is mainly designed for multi-channel solutions with several units and additional DigiControl human interface.

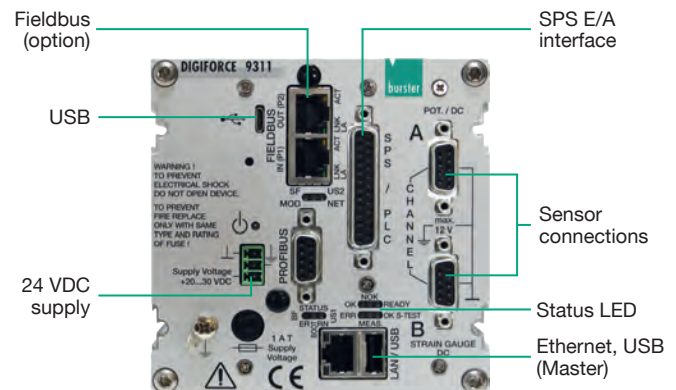


Figure: DIGIFORCE® 9311 cabinet version

synchronous processes involving large amounts of data, logging of measurement data is optimized to achieve an ultra-short cycle time. In addition, the software supports an extra remote interface for more complex tasks. This can be used, for instance, for reloading device configurations or transferring component references for measurement data logging.

Porting from DIGIFORCE® 9310 to DIGIFORCE® 9311

A DIGIFORCE® 9311 device configuration can be generated from a DIGIFORCE® 9310 backup file using DigiControl. The software imports the sensor and evaluation settings and selects as close a configuration as possible for the DIGIFORCE® 9311.

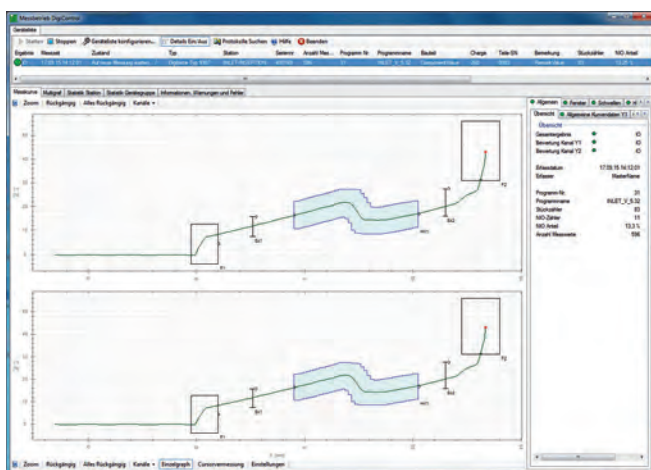


Figure: The „measurement mode“ function displays the curve and status information of the most recent measurement. A multi-channel view is also possible. The corresponding log is automatically saved in the background.

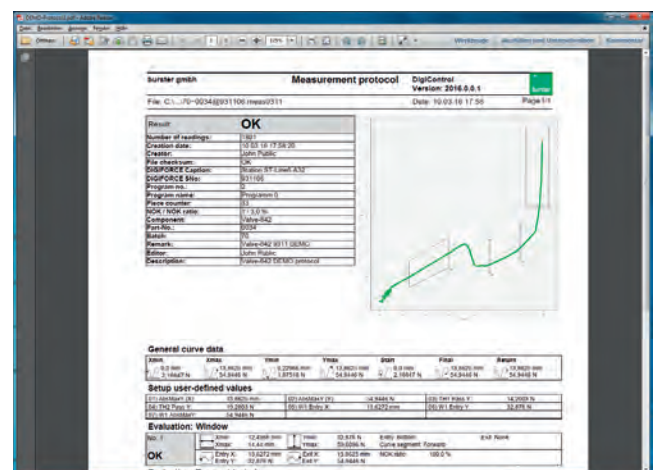


Figure: A Data-log wizard provides filters for selecting and displaying stored measurement logs. A log printout containing component data, curve information and all evaluation results can be generated for each individual measurement log.

General Technical Data

Sampling rate:	10 kHz
Signal sampling:	ΔX , ΔY , Δt in any combination
Digitalization:	16 bit
Evaluation time:	typ. 25 ms
Measurement programs:	16
Power supply:	
Desktop/panel version V0xxx:	100 ... 240 VAC $\pm 10\%$, 50 ... 60 Hz $\pm 10\%$
Cabinet mounted version V2xxx:	20 ... 30 VDC
Power consumption:	< 15 VA
Delay in real-time limit signals S1 ... S6:	typ. ≤ 3 ms
Operating temperature range:	+ 5 ... + 23 ... + 40°C
Protection class:	
Desktop/panel version V0xxx:	IP40 / IP65 panel mounted
Cabinet mounted version V2xxx:	IP20
Display*:	3.5" TFT colour LCD (320 x 240)
Operation*:	touch operation
Operating language*:	German, English, French, Italian, Spanish, Chinese (only process window)

* is omitted in the version V2xxx

Compatible Sensors

Flexible assignment of physical channels A ... B to measurement graphs (X/Y coordinates). The function burster TEDS is not available at the optional piezo channel.

Channel A (potentiometer, process signals)

Excitation voltage:	5 V
Excitation current:	10 mA max.
Signal range:	± 5 V, ± 10 V
Cut-off frequency:	5 ... 5000 Hz in discrete bands
Total error:	< 0.2 % F.S.

Channel B (strain gauge, process signals)

Strain gauge sensors

Measurement ranges:	2/4/10/20/40 mV/V
Bridge resistance:	120 Ω ... 5 k Ω
Excitation voltage:	5 V
Excitation current:	30 mA max.
Cut-off frequency:	5 ... 5000 Hz in discrete bands
Total error:	< 0.2 % F.S.

Process signals

Measurement ranges:	± 5 V, ± 10 V
Cut-off frequency:	5 ... 5000 Hz in discrete bands
Total error:	< 0.2 % F.S.

Channel B Piezoelectric (option)

Measurement ranges:	1 nC ... 1 μ C in discrete bands
Cut-off frequency:	5 ... 5000 Hz in discrete bands
Total error:	< 1 % F.S.

This option replaces the channel for strain gauge and process signals.

Transmitter excitation für X and Y channel

only for cabinet version V2xxx: 20 ... 30 VDC / 150 mA

I/O and Fieldbus Interfaces

I/O interface

Parallel PLC port according to EN 61131-2, 24 VDC, opto-isolated, positive logic
10 inputs, of which 3 are configurable
13 outputs, of which 6 are configurable, maximum load I_{MAX} 500 mA,
 $I_{MAX TOTAL}$ 800 mA (all outputs)
D-SUB-25 (model female)

PROFIBUS (option)

D-SUB9
Baud rate max. 12 MBaud
Communication protocol cyclic service **DP-V0**
acyclic service **DP-V1**

PROFINET, EtherNet/IP (option)

2 port western-socket (RJ45)
Communication protocol cyclical realtime process data
acyclic parameter data

Communication Interfaces

Device parameterization, data backup (up/download), high-speed measurement data logging, USB data logging

USB	Slave port (Micro-B)
	Front panel
	Data rate ~ 1 MBaud

Technical changes reserved.

USB	Master port (type A) Rear side USB data logging Data format FAT16/32, max. 32 GB
Ethernet	10/100 MBit, western-socket (RJ45)
At the cabinet mounted version V2xxx all connectors are placed at the front side.	

Housing

Combined desktop/panel-mounted housing (W x H x D):	110 x 110 x 183 [mm]
Desktop version:	4 rubberized feet (fitted as standard)
Front panel (W x H):	119 x 119 [mm]
Front panel cut-out (W x H):	111 x 111 [mm]
Weight:	ca. 1.5 kg
Panel mounting:	rubber feet are replaced by the mounting rack (order code 9310-Z001), device is inserted through the front-panel cut-off and is fixed by screws (see page 5).
Cabinet mounted version V2xxx:	for rail mounting (mounting rail to DIN EN 50022)

Accessories

Fixing kit for panel mounting	Model 9310-Z001*
Connection outlines for mounting several DIGIFORCE® 9311 (2 outlines, 4 screws)	Model 9310-Z002*

* not suitable for the version V2xxx

PC software

PC software DigiControl for convenient instrument configuration including backup function (upload/download) and laboratory mode for manual reading and analysis of measurement curves, data-log wizard with print and export functions.
Supplied with the instrument and available free of charge from www.burster.com

PC software DigiControl including USB data cable 9900-K358
Model 9311-P101

PC software DigiControl: PLUS version plus highspeed, in-process logging of measurement data, data-log wizard and Excel data export
Model 9311-P100

Cable and connectors

Connecting cable for burster displacement sensors
8710 ... 8719 series, length 3 m **Model 99209-591A-0090030**

Extension cable for sensors with
9900-V209 plug, length 3 m **Model 99209-609A-0150030**

Bridging cable for routing the displacement sensor signal from DIGIFORCE® 9311 to a following device, length 0.5 m **Model 9900-K340**

USB data cable for front-side service interface, length 2 m **Model 9900-K358**

Connecting plug for A, B channel (strain gauge, process signals, potentiometer) **Model 9900-V209**

Connecting plug for PLC-I/O port, 25 pin, Min-D **Model 9900-V160**

burster TEDS

Connector 9 pin, Min-D incl. memory chip for the electronic sensor data sheet **Model 9900-V229**

Fitting connector of the connecting plug incl. programming the electronic sensor data sheet **99011**

Adjustment of a complete measuring chain

Adjustment and scaling of channel X and Y including test certificate **93ABG**

Order Code

DIGIFORCE®	9311 - V	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Standard	display version (AC supply)	0	0	0	0
Standard	cabinet mounted version (DC supply)	2	0	0	0
Option card analog	Piezo (instead of strain gauge, process signals)	1			
Fieldbus					
	PROFIBUS (DP-V0/DP-V1)				2
	PROFINET				3
	EtherNet/IP				4