



Two-Channel Digital Display

DD-2002

Torque-Speed - Torque-Angle - Force-Displacement

- Freely Scalable Displays
- For Active and Passive Sensors
- 20 Measurements/s
- Easy Operation
- Programmable Filters
- Min.-Max. Value Display
- Serial Interfaces
- Analog Outputs
- Limit Values
- External Control Inputs



Description

The two-channel digital display is a versatile measuring device which can be used in the production as well as in laboratory areas. By its rigid housing, the measuring device has been well proven in many applications.

The device is either being programmed by a pc or by 5 keys directly. Additional functions such as Min.-Max. memory, tare, delete buffer... can be carried out by the keys or two programmable inputs.

By a modular construction kit-system, most various sensor types can be connected.

Type	Function	Sensor 1	Sensor 2
DD-2002-TSA	Torque-Speed	±5V, ±10V	5V TTL, Incremental TTL
DD-2002-TSP	Torque-Speed	±0.5 .. 2.2 mV/V	5V TTL, Incremental TTL
DD-2002-TAA	Torque-Angle	±5V, ±10V	Incremental TTL
DD-2002-TAP	Torque-Angle	±0.5 .. 2.2 mV/V	Incremental TTL
DD-2002-FDPI	Force-Displacement	±0.5 .. 2.2 mV/V	Incremental TTL
DD-2002-FDPA	Force-Displacement	±0.5 .. 2.2 mV/V	Potentiometric 0 .. 10V



Specifications

Type	DD-2002-TSA	DD-2002-TSP	DD-2002-TAA	DD-2002-TAP	DD-2002-FDPI	DD-2002-FDPA
Art.-No.	106233	106234	106235	106236	106237	106238
Supply	85 .. 250VAC, 50 .. 60 Hz, 30 VA					
Meas. rate analog input	20 Measurements/s					
Resolution	16 Bit					
Input signal	±5V/±10V	±0.5 .. 2.2 mV/V	±5V/±10V	±0.5 .. 2.2 mV/V	±0.5 .. 2.2 mV/V	±0.5 .. 2.2 mV/V
Accuracy	0.05% +3 mV	0.07% +4 µV	0.05% +3 mV	0.07% +4 µV	0.07% +4 µV	0.07% +4 µV
Response time analog input	0.2 s for display of 99% of final value, max. 0.7 at external trigger					
Response time digital input	max. 0.6 s at external trigger					
Display	5-digit, height 14 mm, red LED					
Max. count rate	30 kHz	30 kHz	20 kHz	20 kHz	20 kHz	Input 0 .. 10V
Count range	±999999	±999999	±999999	±999999	±999999	99999
Accuracy	±0.01%	±0.01%	Absolute	Absolute	Absolute	0.05%+3 mV
Display	6-digit, height 14 mm, red LED					

Sensor Side

Excitation sensors	24V, 50 mA	10V, 80 mA 5V, 30 mA	24V, 50 mA	10V, 80 mA 5V, 30 mA	10V, 80 mA 5V, 30 mA	10V, 80 mA 10V, 30 mA
Signal input / impedance	1 MΩ 5V TTL	100 MΩ 5V TTL	1 MΩ 5V TTL	100 MΩ 5V TTL	100 MΩ 5V TTL	100 MΩ 1 MΩ
Disturbing signal suppression NMR	>60 dB at 50 .. 60 Hz ±1% (can be increased by digital filtration)					
Common mode suppression CMR	>100 dB, DC to 120 Hz					

Miscellaneous

Service temperature range	0 .. 45°C
Storage temperature range	-30 .. 70°C
Relative air humidity	max. 85%.rF, not condensing
Electromagnetic compatibility	RFI Emission: EN 50081-2, interference immunity: EN 50082-2, CE conformal
Dimensions (W x H x D)	186 x 155 x 264 mm
Weight	approx. 2.5 kg
Level of protection	IP21

Options/ Accessories

Art.-No.	Type	Description
115134	mV/V/±10V/0/4...20mA	Adjustment amplifier with simulator
106248	DD-2002-CDC10	Plug-in interface card RS485
106249	DD-2002-CDC20	Plug-in interface card RS232
113259	GM 80/D-SUB	RS232 D-SUB extension, 1:1, 1.8 m, with 9 pin connector and female connector
109629	GM 80/USA-19HS	RS232 - USB serial interface, 1 m
106250	DD-2002-CDL10	Plug-in analog output card 0 .. 10V or 0/4 .. 20 mA
106251	DD-2002-CDS10	Plug-in limit value relay output card, 2 x changer
106252	DD-2002-CDS20	Plug-in limit value relay output card, 4 x closer
106253	DD-2002-CDS30	Plug-in limit value transistor output card, 4 x NPN
106254	DD-2002-CDS40	Plug-in limit value transistor output card, 4 x PNP
106240	DD-2002-EXT-2	2 external control inputs per channel
106241	DD-2002-HS	Speed measurement up to 300 kHz
106239	DD-2002-SD	Direct sensor signal output (by active sensor)
42373	DD-2002-TR28	Lifting-handle

For further specifications see data sheet PAX.

**Customer Specific Adjustments**

Please mark with a cross and fill out

Designation	Function	Output Signal Sensor 1	Displayed Value/ Enter Unit	Impulses/rev. Sensor 2	Displayed Value/ Enter Unit
DD-2002-TSA	Torque-Speed	±5V ±10V		5V TTL Incremental TTL _____ Impulses/rev.	
DD-2002-TSP	Torque-Speed	± _____ mV/V		5V TTL Incremental TTL _____ Impulses/rev.	
DD-2002-TAA	Torque-Angle	±5V ±10V		Incremental TTL _____ Impulses/rev.	
DD-2002-TAP	Torque-Angle	± _____ mV/V		Incremental TTL _____ Imp./r	
DD-2002-FDPI	Force-Displacement	± _____ mV/V		Incremental TTL _____ Imp./r	
DD-2002-FDPA	Force-Displacement	± _____ mV/V		Potentiometric 0 .. 10V	

Please mark with a cross and fill out: Max. 3 different output cards for each display possible!

Options	Art.-No.	Function
CDC10	106248	Interface card RS485
CDC20	106249	Interface card RS232
CDL10	106250	Analog output: Torque / Force 0 .. 10V 0V = _____ 10V = _____ 0 .. 20 mA 0 mA = _____ 20 mA = _____ 4 .. 20 mA 4 mA = _____ 20 mA = _____ Analog output: Speed / Angle / Displacement 0 .. 10V 0V = _____ 10V = _____ 0 .. 20 mA 0 mA = _____ 20 mA = _____ 4 .. 20 mA 4 mA = _____ 20 mA = _____
CDS10	106251	2 Limit value relays switch-over-contacts / per channel: Torque / Force GW1 _____ GW2 _____ 2 Limit value relays switch-over-contacts / per channel: Speed / Angle / Displacement GW1 _____ GW2 _____
CDS20	106252	4 Limit value relays A-contact / per channel: Torque / Force GW1 _____ GW2 _____ GW3 _____ GW4 _____ 4 Limit value relays A-contact / per channel: Speed / Angle / Displacement GW1 _____ GW2 _____ GW3 _____ GW4 _____
CDS30	106253	4 Limit value transistor outputs NPN / per channel: Torque / Force GW1 _____ GW2 _____ GW3 _____ GW4 _____ 4 Limit value transistor outputs NPN / per channel: Speed / Angle / Displacement GW1 _____ GW2 _____ GW3 _____ GW4 _____
CDS40	106254	4 Limit value transistor outputs PNP / per channel: Torque / Force GW1 _____ GW2 _____ GW3 _____ GW4 _____ 4 Limit value transistor outputs PNP / per channel: Speed / Angle / Displacement GW1 _____ GW2 _____ GW3 _____ GW4 _____
EXT-2	106240	2 external control inputs: Torque / Force Control input 1 zeros display / tare reset Min. and Max. value programming blockade Control input 2 reset display programming blockade 2 external control inputs: Speed / Angle / Displacement Control input 1 zeros display / tare reset min. and max. value programming blockade Control input 2 Reset display programming blockade
HS	106241	Speed Measurement up to 300 kHz
SD	106239	Direct sensor signal output (by active sensor)
TR28	42373	Lifting-handle

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