

Two-Channel Digital Display

DD-2002

Areas of Application:

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 Interface
- 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.

Designation	Function	Sensor 1	Sensor 2
DD 2002 TSA	Torque-Speed	0...±5 V, 0...±10 V	5 V TTL, Incremental TTL
DD 2002 TSP	Torque-Speed	±0.5...2.2 mV/V	5 V TTL, Incremental TTL
DD 2002 TAA	Torque-Angle	0...±5 V, 0...±10 V	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...10 V

TECHNICAL DATA:

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...250 V AC 50/60 Hz 30 VA					
Meas. Rate	20 Measurements/s					
Analog Input						
Resolution	16 Bit					
Input Signal	0 ±5 V 0...±10 V	±0.5...2.2 mV/V	0...±5 V 0...±10 V	±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	0.2 s for display of 99% of final value, max. 0.7 at external trigger					
Analog Input	max. 0.6 s at external trigger					
Digital Input						
Display	5-digit, height 14 mm, red LED					
Max. Count Rate	30 kHz	30 kHz	20 kHz	20 kHz	20 kHz	Input 0...10 V
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	24 V 50 mA	10 V 80 mA 5 V 30 mA	24 V 50 mA	10 V 80 mA 5 V 30 mA	10 V 80 mA 5 V 30 mA	10 V 80 mA 10 V 30 mA
Signal Input / Impedance	1 MΩ 5 V TTL	100 MΩ 5 V TTL	1 MΩ 5 V TTL	100 MΩ 5 V TTL	100 MΩ 5 V 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
Dim. (W x H x D)	186 x 155 x 264 mm
Weight	approx. 2.5 kg
Level of Protect.	IP21

Options	Art. No.	Function
DD CDC10	106248	Interface RS485, multipoint, programmable
DD CDC20	106249	Interface RS232, half duplex, programmable
DD CDL10	106250	Analog output 0...10 V or 0...20 mA, 4...20 mA / per channel
DD CDS10	106251	2 Limit value relays change-over-contact 3 A 28 V / per channel
DD CDS20	106252	4 Limit value relays A-contact 3 A 28 V / per channel
DD CDS30	106253	4 Limit value transistor outputs NPN / per channel
DD CDS40	106254	4 Limit value transistor outputs PNP / per channel
DD EXT-2	106240	2 external control inputs NPN / PNP programmable max. 30 V / per channel
DD SD	106239	Direct sensor signal output (only for active sensors)
DD HS	106241	Speed measurement up to 300 kHz
TR28	42373	Lifting and assembly handle
PAX-DP	110067	2 galvanically separated input channels (by active sensors)
PAX-XLS	106872	Measurement Software for Excel®, applicable with option RS232, only

For further specifications see data sheet PAX respectively PAX-DP.

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Customer Specific Adjustments

Please mark with a cross and / or 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	0...±5 V 0...±10 V		5 V TTL Incremental TTL _____ Impulses/rev.	
DD 2002 TSP	Torque-Speed	± _____ mV / V		5 V TTL Incremental TTL _____ Impulses/rev.	
DD 2002 TAA	Torque-Angle	0...±5 V 0...±10 V		Incremental TTL _____ Impulses/rev.	
DD 2002 TAP	Torque-Angel	± _____ 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...10 V	

Please mark with a cross and / or fill out: Max. 3 Different Output cards for Each Display Possible!

Options	Art. No.	Function
DD CDC10	106248	Interface RS485
DD CDC20	106249	Interface RS232
DD CDL10	106250	Analog Output: Torque / Force 0...10 V 0 V = _____ 10 V = _____ 0...20 mA 0 mA = _____ 20 mA = _____ 4...20 mA 4 mA = _____ 20 mA = _____ Analog Output: Speed / Angle / Displacement 0...10 V 0 V = _____ 10 V = _____ 0...20 mA 0 mA = _____ 20 mA = _____ 4...20 mA 4 mA = _____ 20 mA = _____
DD CDS10 or ↓	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 _____
DD CDS20 or ↓	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 _____
DD CDS30 or ↓	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 _____
DD 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 _____
DD 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
DD SD	106239	Direct Sensor Signal Output
DD HS	106241	Speed Measurement up to 300 kHz
TR28	42373	Lifting and Assembly Handle

Direct Contact Person for queries, Company _____

Mr. / Mrs. _____ Phone _____ 080564_DD-2002_costumer_specific_adjustment