Multifunctional Display Module MOD 21

Display module for simultaneous operation of two encoders, absolute or incremental in any combination 8 control inputs and 16 control outputs, 40 cam switches

SSI-Interfaces

For operation of absolute single- or multiturn- encoders with resolution up to 30 bit with serial SSI-Interface.

Incremental-Inputs

For operation of incremental encoders with 3 or 6 output channels, RS422 line driver or push-pull outputs. Optically insulated with optocoupler.

Display-Scaling

Scale factor, adjustment values and counting direction are separatly programmable for both encoders.

Programmable Control-Inputs

8 optically insulated control-inputs are programmable for various functions, e.g. storing of display data or enable of counter.

Programmable Control-Outputs

16 optically insulated control-outputs, which can be programmed separately by 40 cam switches as a comparator, cam switch or pulse switch. The cycle time is only 500 µs.

Analogue-Output

1 optically insulated programmable analogue-output, which can be used as voltage or current output. High precision D/A-converter with 16 bit resolution. For data source of the analogue output position or velocity of one encoder can be selected.

Serial Interfaces

RS232C	One display module can be connected to a PC for programming and reading data.
RS422/485	Up to 31 display modules can be connected to a PC.
CANBUS	Up to 32 display modules can be connected with CANBUS.

Type explanation

MOD 21

MOD 21-	1	2
Analogue output		X
Serial interface	X	X
Programmable control inputs	X	X
Programmable control outputs	X	X
Display scaling	X	X
Incremental input	X	X
SSI interface	X	X

Technical data

Technical Data	
Supply voltage	+10 ... 35 VDC
Power consumtion	< 150 mA (ohne Last / without load)
Cycle time	500 µs
Display range	-9999999 ... 99999999
Display	rote 7-Segment-LED-Anzeige 8-stellig mit 14 mm Ziffernhöhe *8-digit 7-segment red LED display, 14 mm high*
Data memory	EEPROM
Operating temperature	0 ... +50°C
Connections	Klemmleiste / *Terminal block* max. 1,5 mm^2 Sub-D-Stecker /*Sub-D connector*
Weight	< 0,7 kg
Protection class	Frontplatte / *front*: IP 50 mit Schutzgehäuse / *with protective cover*: IP 54 Rückseite / *rear*: IP 20

Incremental input	
Circuit	Optokoppler
Input level 5 VDC	High +2,8 ... +5 VDC Low 0 ... +0,8 VDC
Input level 24 VDC	High +10 ... 35 VDC Low 0 ... +5 VDC
Input restistance	3 kOhm, U_{in} = 24 V 350 Ohm, U_{in} = 5 V
Input frequency	max. 150 kHz
Pulse width signal M	min. 2 µs

SSI interface	
Clock frequency	125 kHz, 139 kHz
Clock output	RS422
Clock input	Optokoppler RS485

Control inputs	
Circuit	Optokoppler
Input level Low	0 ... +5 VDC
Input level High	+10 ... 35 VDC
Input restistance	1,8 kOhm, U_{in} = 24 V

Control outputs	
Circuit	Optokoppler mit NFET-Treiber
Supply voltage	max. +35 VDC
Output voltage	min. Vcc -2 V, I_{out} = 50 mA
Output current	max. 500 mA, kurzschlussfest / *short-circuit proof*

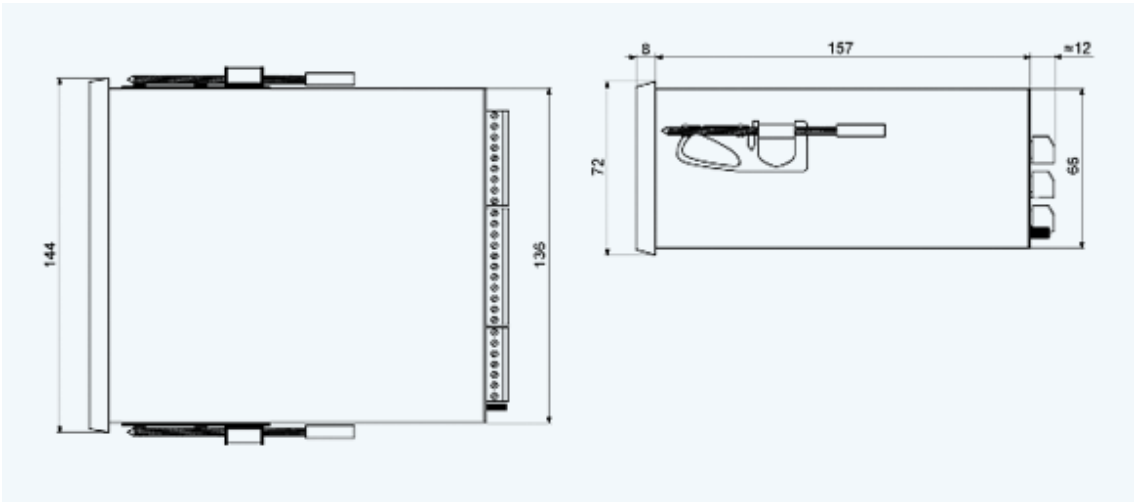
Analogue Voltage-Output	
oltage range	-10 ... +10 VDC
Resolution	305 µV = 16 Bit
Temperature stability	max. 20 ppm / °C
Output current	max. 12 mA, kurzschlussfest / *short-circuit proof*

Analogue Current-Output	
Current range	-20 ... +20 mA
Resolution	610 nA = 16 Bit
Temperature stability	max. 20 ppm / °C
Burden	max. 550 Ohm

Serial interfaces	
RS232C	Baudrate 9600 .. 57600 Bit/s
RS422/485	Baudrate 9600 .. 57600 Bit/s

CANBUS	
Protocol	AP-Link
PDOs	1 Eingang, 1 Ausgang, 64 Bit breit *1 Input, 1 Output, 64 Bit length*
Baud rate	20 kBit/s .. 1 MBit/s

Outline drawing



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Go back

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