

MULTIFUNCTIONAL DISPLAY MODULE MOD 21

Anzeigemodul für den gleichzeitigen Betrieb von zwei Drehgebern, absolut oder inkremental in beliebiger Kombination. 8 Steuereingänge und 16 Steuerausgänge, 40 programmierbare Nocken.

Module par opération simultanée par deux Codeur optique absolu avec SSI-interface et Codeurs optiques incrementaux 8 entrées des contrôles et 16 sorties de contrôles, 40 cames programmables.

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



MOD 21 - a programmable multifunctional display module for simultaneous operation of two encoders. Single- or multi-turn encoders with SSI interface and a resolution up to 30 bit or incremental encoders can be connected in any combination. MOD 21 has the usual standard function of a display module, but additional 16 control outputs, which can be programmed separately by 40 cam switches as comparator, cam switch or pulse switch. Easy programming by four front-panel keys or by PC with RS232 interface.

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 linedriver or push-pull outputs. Optically insulated with optocoupler.

Display-Scaling

Scale factor, adjustment values and counting direction are separately 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.

Product description MOD 21

	SSI-Interfaces						
	Incremental-Inputs						
	Display-Scaling						
	Programmable Control-Inputs						
	Programmable Control-Outputs						
	Serial Interfaces						
	Analogue-Output						
MOD 21- 1		•	•	•	•	•	•
MOD 21- 2	•	•	•	•	•	•	•

Allgemeine Daten

Versorgungsspannung	+10 ... 35 VDC
Stromaufnahme	<150 mA (ohne Last)
Zykluszeit	500 µs
Zählbereich	-9999999 ... 99999999
Anzeige	rote 7-Segment-LED-Anzeige 8-stellig mit 14 mm Ziffernhöhe
Datenspeicher	EEPROM
Betriebstemperatur	0 ... +50°C
Anschlüsse	Klemmleiste, max. 1,5 mm ² Sub-D-Stecker
Gewicht	< 0,7 kg
Schutzart	Frontplatte IP 50 mit Schutzgehäuse IP 54 Rückseite IP 20

SSI-Schnittstellen

Taktfrequenz	125 kHz und 139 kHz
Taktausgang	RS422
Takteingang	Optokoppler RS485

Inkremental-Eingänge

Schaltung	Optokoppler
Eingangspegel 5 VDC	high +2,8...+5 VDC, low 0...+0,8 VDC
Eingangspegel 24 VDC	high +15...+35 VDC, low 0...+5 VDC
Eingangswiderstand	3 kΩ bei 24 V / 350 Ω bei 5V
Eingangsfrequenz	max. 150 kHz
Impulslänge Kanal M	min. 2 µs

Steuereingänge

Schaltung	Optokoppler
Eingangspegel Low	0 ... +5 VDC
Eingangspegel High	+10 ... 35 VDC
Eingangswiderstand	1,8 kΩ bei 24 VDC

Steuerausgänge

Schaltung	Optokoppler mit NFET-Treiber
Versorgungsspannung	max. +35 VDC
Ausgangsspannung	min. Vcc - 2 V bei 50 mA
Ausgangsstrom	max. 500 mA, kurzschlussfest

Analoger Spannungsausgang

Spannungsbereich	-10 ... +10 VDC
Auflösung	305 µV = 16 Bit
Temperaturstabilität	max. 20 ppm / °C
Ausgangsstrom	max. 12 mA, kurzschlußfest

Analoger Stromausgang

Strombereich	-20 ... +20 mA
Auflösung	610 nA = 16 Bit
Temperaturstabilität	max. 20 ppm / °C
Bürde	max. 550 Ω

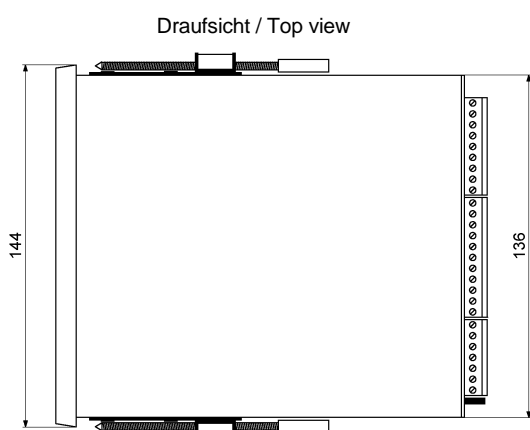
Serielle Schnittstellen

RS232C, RS422/485	Baudrate 9600 ... 57600 Bit/s
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CANBUS

Protokoll	AP-Link
PDOs	1 Eingang, 1 Ausgang, 64 Bit breit
Baudrate	20 kBit/s bis 1MBit/s

Gehäuseabmessungen



Technical data

Supply voltage	+10 ... 35 VDC
Power consumption	<150 mA (without load)
Cycle time	500 µs
Display range	-9999999 ... 99999999
Display	8 digit 7-segment red LED 14 mm high
Data memory	EEPROM
Operating temperature	0 ... +50°C
Connections	Terminal block, max. 1,5 mm ² Sub-D-connector
Weight	< 0,7 kg
Protection	front IP 50 with protective cover IP 54 rear IP 20

SSI-Interfaces

Clock frequency	125 kHz and 139 kHz
Clock output	RS422
Clock input	Optocoupler RS485

Incremental-Inputs

Circuit	Optocoupler
Input level 5 VDC	high +2,8...+5 VDC, low 0...+0,8 VDC
Input level 24 VDC	high +15...+35 VDC, low 0...+5 VDC
Input resistance	3 kΩ at 24 V / 350 Ω at 5V
Input frequency	max. 150 kHz
Pulse length channel M	min. 2 µs

Control-Inputs

Circuit	Optocoupler
Input level Low	0 ... +5 VDC
Input level High	+10 ... 35 VDC
Input resistance	1,8 kΩ at 24 VDC

Control-Outputs

Circuit	Optocoupler with NFET-driver
Supply voltage	max. +35 VDC
Output voltage	min. Vcc - 2 V at 50 mA
Output current	max. 500 mA, short-circuit proof

Analogue Voltage-Output

Voltage range	-10 ... +10 VDC
Resolution	305 µV = 16 Bit
Temperature stability	max. 20 ppm / °C
Output current	max. 12 mA, 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 Ω

Serial Interfaces

RS232C, RS422/485	Baudrate 9600 ... 57600 Bit/s
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CANBUS

Protocol	AP-Link
PDOs	1 Input, 1 Output, 64 Bit length
Baudrate	20 kBit/s up to 1MBit/s

Outline drawing

