

## Data sheet

### FM 050 - Counter module (050-1BA50)

#### Technical data

<b>Order no.</b>	<b>050-1BA50</b>
Type	FM 050 - Counter module
Module ID	08C8 3804
<b>General information</b>	
Note	-
Features	1 Counter 32 bit (A, B) RS422 / TTL Counting frequency: max. 16 MHz (at 4-fold evaluation / RS422) Encoder connection: RS422 / TTL Encoder supply: DC 5V / 24V Encoder evaluation: 1-, 2-, 4-fold Counter modes: Encoder, Pulse/direction, Forwards/Backwards Additional functions: Gate, Latch, COIN, Filter, timestamp Measuring functions: Pulse frequency, pulse period, pulse duration Digital inputs and outputs with diagnostic function
<b>Current consumption/power loss</b>	
Current consumption from backplane bus	100 mA
Power loss	1.9 W
<b>Technical data digital inputs</b>	
Number of inputs	3
Cable length, shielded	100 m
Cable length, unshielded	-
Rated load voltage	-
Reverse polarity protection of rated load voltage	-
Current consumption from load voltage L+ (without load)	-
Rated value	DC 24 V
Permitted range	DC 20.4...28.8 V
Input voltage for signal "0"	DC 0...5 V
Input voltage for signal "1"	DC 11...28.8 V
Input voltage hysteresis	-
Signal logic input	Sinking input
Frequency range	-
Input resistance	-
Input current for signal "1"	2.3 mA
Connection of Two-Wire-BEROs possible	yes
Max. permissible BERO quiescent current	0.5 mA
Input delay of "0" to "1"	0.8 µs
Input delay of "1" to "0"	0.8 µs
Number of simultaneously utilizable inputs horizontal configuration	3
Number of simultaneously utilizable inputs vertical configuration	3
Input characteristic curve	IEC 61131-2, type 3
Initial data size	64 Byte
<b>Technical data digital outputs</b>	
Number of outputs	3

Cable length, shielded	100 m
Cable length, unshielded	100 m
Rated load voltage	DC 24 V
Permitted range	DC 20.4...28.8 V
Current consumption from load voltage L+ (without load)	20 mA
Output current at signal "1", rated value	-
Signal logic output	Sourcing output
Output delay of "0" to "1"	3 µs
Output delay of "1" to "0"	3 µs
Minimum load current	-
Lamp load	-
Parallel switching of outputs for redundant control of a load	-
Parallel switching of outputs for increased power	-
Actuation of digital input	yes
Switching frequency with resistive load	max. 10 kHz
Switching frequency with inductive load	max. 0.5 Hz
Switching frequency on lamp load	-
Internal limitation of inductive shut-off voltage	L+ (-55 V)
Short-circuit protection of output	yes, electronic
Trigger level	0.7 A
Number of operating cycle of relay outputs	-
Switching capacity of contacts	-
Output data size	16 Byte

## Technical data counters

Number of counters	1
Cable length, shielded	15 m
Cable length, unshielded	-
Counter width	32 Bit
Number of inputs	3 (A, B, C)
Input signals	RS422 (differential) / TTL single ended
Termination resistance (RS422)	150 Ohm
Maximum input frequency	-
Maximum input frequency (TTL)	1 MHz
Maximum input frequency (RS422)	4 MHz
Maximum count frequency	-
Maximum count frequency (TTL)	4 MHz
Maximum count frequency (RS422)	16 MHz
Encoder supply (output)	0 / DC 5 V/ DC 24 V (max. 300 mA)
Mode incremental encoder	yes
Mode pulse / direction	yes
Mode forwards/backwards	yes
Mode pulse	-
Mode frequency counter	yes
Mode period measurement	yes
Gate input available	yes
Latch input available	yes
Reset input available	yes
Counter output available	yes

## Status information, alarms, diagnostics

Status display	yes
Interrupts	yes, parameterizable
Process alarm	no
Diagnostic interrupt	yes, parameterizable
Diagnostic functions	yes, parameterizable
Diagnostics information read-out	possible
Module state	green LED
Module error display	red LED
Channel error display	red LED

## Isolation

Between channels	-
Between channels of groups to	-
Between channels and backplane bus	yes
Between channels and power supply	-
Max. potential difference between circuits	-
Max. potential difference between inputs (Ucm)	-
Max. potential difference between Mana and Mintern (Uiso)	-
Max. potential difference between inputs and Mana (Ucm)	-
Max. potential difference between inputs and Mintern (Uiso)	-
Max. potential difference between Mintern and outputs	-
Insulation tested with	DC 500 V

## Datasizes

Input bytes	64
Output bytes	16
Parameter bytes	110
Diagnostic bytes	20

## Housing

Material	PPE / PPE GF10
Mounting	Profile rail 35 mm

## Mechanical data

Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm
Net weight	56 g
Weight including accessories	56 g
Gross weight	76 g

## Environmental conditions

Operating temperature	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C

## Certifications

UL certification	yes (DC general use)
KC certification	yes
UKCA certification	-
ChinaRoHS certification	yes