Programmable Universal Counter Model CM 3101 up to 1 MHz

Characteristics

- LED-Display, red, 6 decades, 14 mm
- Display range -99999 .. 999999
- DIN Housing 96 x 48 mm
- Operating mode programmable
- Data storage at power fail
- Accessory power supply for the encoder
- 2 alarm relay, analog output, interface
- Plug-In screw terminal

Modes

- Incremental A 90° B x 1
  A 90° B x 2, A 90° B x 4
- UP/DOWN + Direction
- Puls counter A
  A-B, A+B, A/B, (A-B)/A, (B-A)/A
- Frequency/Rotation speed measurement A
  A-B, A+B, A/B, (A-B)/A, (B-A)/A
- Cycle duration measurement
- Pulse duration measurement
- Time meter about Start/Stop

Software functions

The universal counter is equipped with following functions:

- Scaling factor 0,00001 .. 9,99999
- Programmable offset value
- MIN/MAX value detection
- Auto-Reset for MIN/MAX value
- Displaytest and displayhold
- Setting of alarm points during measurement

Signal inputs

The signal inputs are programmable to several encoder output logic:

- PNP- or NPN-Logic
- 5 V (TTL), 12 V or 24 V signal level
- 25 Hz signal input filter

Push buttons at the front

The three push buttons could be programmed to following functions:

- No function
- Reseting Measured value or MIN/MAX value
- Displaying Measured-, MIN- or MAX-Value
- Manual alarm point reset
- Displaying and setting of alarm points

Digital Input Channel

These both input are low active and could be programmed to following functions:

- No function
- Reseting Measured- or MIN/MAX-value
- Displaying Measured-, MIN- or MAX-value
- Manual alarm point reset
- Displayhold or displaytest

Accessory power supply (only at AC-Version)

Build in power supply for encoders, 24 V DC/125 mA, isolated to the further electronic.

Alarm outputs

Two (Four at option) programmable alarm outputs with free allocation allows the monitoring of production operation.

Programmable parameters:

- Alarm point and hysteresis
- Relay function (high or low alarm)
- Alarm response time (Fall off and put on time)
- Data source (Measured-, Hold-, MIN- or MAX-value)

Option analog output

The option analog output is provided with a current output and a voltage output. Both output are isolated from the further electronic.

- To scale (offset and final value)
- Output 0(2) - 10 V or 0(4) - 20 mA
- Data source (Measured-, Hold-, MIN- or MAX-value)

Optionen serial interfaces

Addition to data communication or to a printer

- RS 485
- RS 232 (analog output not possible)
- Current-Loop, TTY (analog output not possible)
**Digital Panel Meter**

**Elektrical Datas**

- Counter increment: counter steps 24 Bit
- Count frequency: max. 1 MHz
- UP/DOWN-counter + direction: counter steps
- Pulse frequency: max. 1 MHz
- Frequency/rotation speed: 1-channel mode max. 1 MHz, 2-channel mode max. 1 MHz
- Cycle duration: 0.0001 s - 66 s
- Pulse duration: 0.0001 s - 66 s
- Time meter: 0.0001 s - 999999 s or 00.00.00 h - 99.59.59 h
- Accuracy: Frequency measurements < 0.01 %, Time measurements < 0.02 %
- Signal input filter: 25 Hz programmable
- Data storage: > 10 years (NOVRAM)
- Signal inputs: 4, input A, B, Reset, Tor
- Logic: PNP-, NPN
- Signal level: 5 V (TTL), 12 V, 24 V
- Digital user inputs: 2, programmable function
- Logic: NPN, max. 30 V
- Alarm outputs: 2 (4) Relays (programmable as opened contact or closed contact)
- Signaling: 2 LEDs at the front
- Switch voltage: 250 VA / 250 V DC
- Switch current: 5 A AC / 5 A DC
- Switch power: 750 VA / 100 W
- Analog output: resolution 16 bit
- Accuracy: ± 0.2% of final value
- Nonlinearity: ± 0.012 %
- Voltage: 0(2) - 10 V, max. 10 mA
- Current: 0(4) - 20 mA; max. 500 mA
- Isolation voltage: 3 kV / 1 min
- Interfaces: RS 485, RS 232, TTY
- Protocol: DIN 66 019 / ISO 1745
- Power supply voltage: AC: 95 V to 250 V AC
- Power supply: Current: 18 .. 36 V DC
- Power consumption: AC 9 VA, DC 70 mA
- Accessory power supply: 24 V DC / 125 mA (only at AC)
- Isolation voltage: 500 V / 1 min
- Power supply: 0 95 .. 250 V/AC
- Option interface: 0 1 Interface RS 485
- Options: 0 No options

**Environmental conditions**

- Operating temperature: 0 .. 50 °C
- Storage temperature: -20 .. 70 °C
- Humidity: < 80 %, not-condensing
- Protection: protective class II
- Field of application: class 2, overvoltage protection II
- CE: in conformance with 89/336/EWG NSR 73/23/EWG

**Ordering information**

<table>
<thead>
<tr>
<th>CM 3101:</th>
<th>Housing type</th>
<th>Front frame colour</th>
<th>Front design</th>
<th>Power supply</th>
<th>Option interface</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 Switch board</td>
<td>1 Panel-Clip</td>
<td></td>
<td>0 95 .. 250 V/AC</td>
<td>0 No interface</td>
<td>0 No options</td>
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<td></td>
<td></td>
<td>0 black</td>
<td>ERMA-Meter Logo</td>
<td>1 Interface RS 485</td>
<td>1</td>
<td>1 With analog output</td>
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<tr>
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<td></td>
<td></td>
<td>No Logo</td>
<td>2 Interface RS 232</td>
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<td>4 in addition two alarm outputs</td>
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<td></td>
<td></td>
<td>Customer defined Logo</td>
<td>3 Interface Current-Loop, TTY</td>
<td>0</td>
<td></td>
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</tbody>
</table>

**Dimensions and Mounting**

**Switch board mounting**

**Panel-Clip**

- Mosaic Systems: Siemens BRU (S50x25)
- Subkiel

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Technical Subjects To Change