

dimensions 48 x 48 x 91mm

pulse counter  
frequency counter  
elapsed-time counter

- ✓ pulse, frequency and elapsed-time counter in one device
- ✓ different types of programmable counting
- ✓ entry of presets via buttons or teach-in
- ✓ backlit 2 x 6-digit LCD display
- ✓ simultaneous display of counter reading and preset value
- ✓ scalable display
- ✓ integrated totalizing counter
- ✓ potential-free relay outputs
- ✓ multi-colored display
- ✓ data memory > 10 years via EEPROM



**counter with 2 presets  
potential-free relay outputs**



**description**

The new programmable multi-function counter of model series **CM03** can be used in any situation in which pulses need to be counted, distances need to be measured or times need to be recorded up to a maximum frequency of 60kHz.

With a two-line, backlit LCD display, the counter is easy to read and easy to program using neatly arranged cursor keys. Even more complex controls can be implemented using a batch counter or grand total function.

The two presets which can be programmed using the buttons on the front or taught in using the teach function actuate the relay.

The two presets are either programmed using the front buttons or taught in using the teach function. When the counter reaches the preset value, the relevant relay is actuated.

Two inputs with adjustable functionality are actuated by the sensors or the pulse generators. The display has 2 varicolored LCD displays for the counter reading and the preset value. A decimal point can be adjusted individually.

A decisive advantage of these counters is the option of connecting two-lane transducers, e.g. magnetic distance measuring

systems or encoders. The device can also be used as a frequency counter or tachometer.

Different output operations such as addition, subtraction etc. are also available for the different counting methods. A new 3-stage keyboard locking facility makes a wide range of uses possible.

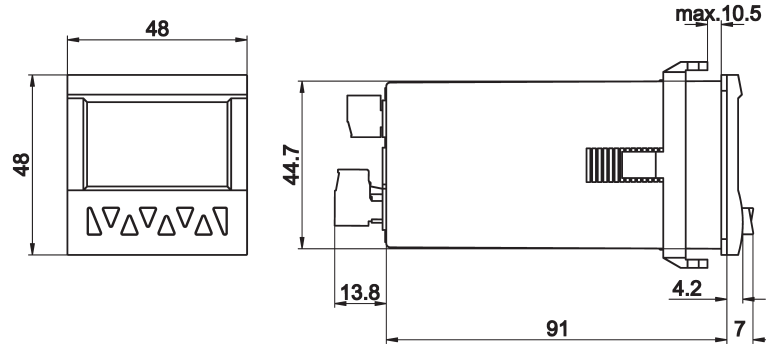
The new **CM03** counters are supplied with three pre-defined parameter settings. The multi-function counters are optionally available for DC or AC voltage.

This device can be used in industrial processes and controllers. In production lines in the metal, wood, plastic, paper, glass and textile industries and the like.

**application examples**

- ▶ Reliable wear and maintenance counters
- ▶ Process visualization in mechanical engineering/plant construction
- ▶ Sum counters
- ▶ Timing relay functions
- ▶ Frequency counters, tachometers

article-no.	<b>CM030980</b>	<b>CM034980</b>
operating voltage	<b>10 ... 30V DC</b>	<b>90 ... 260V AC</b>
output signal	<b>2 relays</b>	<b>2 relays</b>
preset	<b>2</b>	<b>2</b>

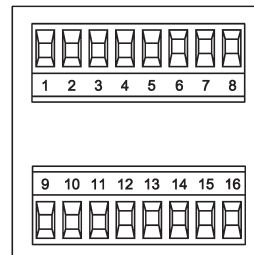


**TECHNICAL DATA**

function	pulse counter: max. 55kHz * frequency counter: 0.01 ... 60000Hz * elapsed-time counter: sec., min., h	pulse counter: max. 55kHz * Frequency counter: 0.01 ... 60000Hz * elapsed-time counter: sec., min., h
output signal	relay 1: no / nc, 3A AC/DC, 750VA/90W relay 2: change-over contact, 3A AC/DC, 750VA/90W	relay 1: no / nc, 3A AC/DC, 750VA/90W relay 2: change-over contact, 3A AC/DC, 750VA/90W
input	count input A and B: pnp / npn, programmable MPI, Lock, Gate, Reset	count input A and B: pnp / npn, programmable MPI, Lock, Gate, Reset
input (signal level)	0,6xU <sub>B</sub> ... 30VDC	12 ... 30VDC
operating voltage	U <sub>B</sub> : 10 ... 30V DC	U <sub>B</sub> : 90 ... 260V AC
power consumption	4.5W	9VA
transducer power supply	s. operating voltage, 80mA	24V DC ±15%, 80mA
display (counter reading)	LCD, 6 decades, 9mm high	LCD, 6 decades, 9mm high
display (preset value)	LDC, 6 decades, 7mm high	LCD, 6 decades, 7mm high
data storage	> 10 years via EEPROM	> 10 years via EEPROM
dimensions	48x48x91mm	48x48x91mm
housing material	polycarbonate	polycarbonate
temperature (operation/storage)	-25 ... +65°C / -25 ... +75°C	-25 ... +65°C / -25 ... +75°C
degree of protection (EN 60529)	IP 65 (front side)	IP 65 (front side)
shock resistance	100G / XYZ	100G / XYZ
vibration resistance	10 ... 55Hz / 1 min. / XYZ	10 ... 55Hz / 1 min. / XYZ
connection	pluggable screw terminals	pluggable screw terminals
mounting	front panel installation	front panel installation
mounting accessories	adapter plate <b>AC000028</b>	adapter plate <b>AC000028</b>

\* the max. value of the input frequency may be lower depending on the setting.

connection		terminal
transducer power supply	(see article list)	1
transducer power supply	(see article list)	2
INP A	(signal input A)	3
INP A	(signal input B)	4
reset	(reset pulse)	5
LOCK	(keyboard locking)	6
GATE	(gate input)	7
MPI	(user input)	8
relay 1	central contact	9
relay 1	normally open	10
relay 2	central contact	11
relay 2	normally open	12
relay 2	normally closed	13
AC	N	14
DC	10 ... 30V DC	
AC	L	15
DC	GND	

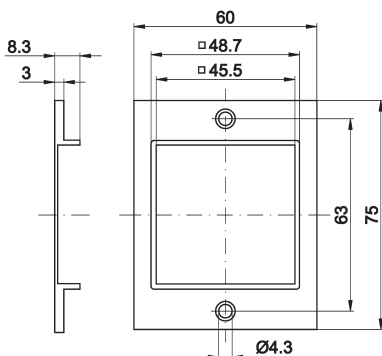


**note:**  
You will receive operating instructions when the counters are delivered. These explain the functions and programming of the device in detail.

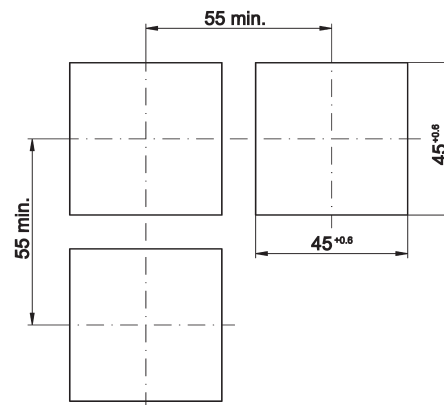
**types of counter input:**

pulse counter:	direction of counting
	difference (up, down)
	addition A+B (up, down)
	phase discriminator (1-way, 2-way, 4-way evaluation)
	ratio (A/B)
	ratio in %
	$((A-B)/A*100\%)$
frequency counter:	A, A-B, A+B, quad, A/B, $(A-B)/A*100\%$
elapsed-time counter:	4 start modes: FrErun, Auto, Inp A.Int B, Inp B.Int B

**adapter plate AC000028**



**Installation opening**



**ACCESSORIES**

article-no.	description	note
AC000028	mounting frame 60x75	plastic

This data sheet contains only the available standard versions. Please contact us for other output and connection versions.

**Warning:** Never use these devices in applications where the safety of a person depends on their functionality.

This data sheet as well as your personal contact can be found at [www.ipf-electronic.com](http://www.ipf-electronic.com)

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**NOTES**

A large grid area for taking notes, consisting of a 20x30 grid of small squares. The grid is empty and occupies the majority of the page.