

design 48 x 48 x 106.6

pulse and elapsed-time counter  
timer

- ✓ 5-digit LED-display, approx. 8mm high
- ✓ suppression of predecimal points
- ✓ up/down programmable to 10kHz
- ✓ different programmable counting modes
- ✓ input A and B 90° in phase quadrature
- ✓ programmable scale factor
- ✓ auxiliary voltage 24V DC in AC-operation
- ✓ data memory > 10 years via EEPROM
- ✓ various elapsed-time and time delay relay functions
- ✓ also available with digital outputs



**counter with 1 or 2 preset values  
floating relay outputs**

#### description

The programmable counters of the **CM03** series, featuring an LED display, can be used in all applications where pulses have to be counted, paths have to be measured or times have to be recorded. One and/or two programmable presets control the relay or transistor outputs.

Two tracks which are adjustable in their function are controlled by sensors or pulse generators. The pre-set counters can be optionally supplied for DC or AC voltages. The easy to read LED display has five digits. The decimal point can be set on an individual basis.

When using only one of the counter inputs, control can take place for example via an inductive sensor or a through-beam sensor. A decisive advantage with these counters however is that they can be connected with twin track sensors. The devices offer the possibility of selecting between one, two and four flank evaluation.

With the counters in this series, use as a time counter and/or

time relay is also possible. The user can select between four different counting ranges.

The counter's programming is carried out via the film keyboard. For example, the position of the decimal point, the length of the timed output for the switch outputs, the counting mode and the function of the reset button can all be programmed. All set parameters are stored in an EEPROM for at least 10 years.

#### application examples

- ▶ reproducible pre-set lengths for automatic trimming devices
- ▶ reliable wear and tear/maintenance counter
- ▶ process visualization in mechanical engineering and plant construction
- ▶ pulse counters with a position display

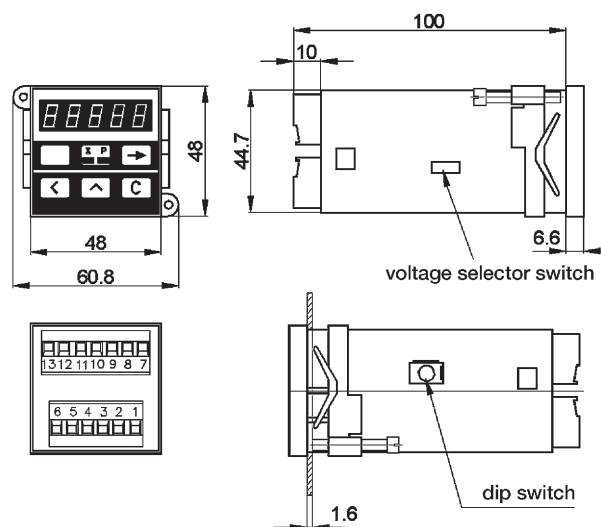
TECHNICAL DATA	1 PRESET
display	LED, 5 decades, 7.6mm high
counting range	-9,999 ... 99,999
operating voltage	24V DC or 115/230V AC $\pm$ 10%
power consumption	7VA 4.5W
output	relay, change-over contact 1A/250V AC and npn or pnp 24V DC; 50mA
timed output	0.01 ... 9.99sec
power supply	24V DC +10% -50%, 50mA
signal input	pnp or npn programmable, Re 1.65k $\Omega$
data storage	> 10 years via EEPROM
scale factor	0.001 ... 99.999
counting mode	up/down, difference (A-B), sum (A+B), input A and B 90° phase quadrature
time delay relay functions	on delay, off delay, holding time without stop, holding time with stop
time ranges	999.99sec / 99min 59.9sec / 999min 59sec / 999h 59min
housing material	polycarbonate, polyester
system of protection (EN 60529)	IP65 (front side)
ambient temperature	0 ... +50°C
frequency of count	15Hz; 10kHz programmable
connection	pluggable screw terminals

### connection

counter with 1 preset	terminal
free	1
operating voltage	2
operating voltage	3
relay make contact floating	4
relay center contact floating	5
relay break contact floating	6
signal input A	7
signal input B	8
reset	9
electronic output pnp or npn	10
coding input (pnp bridge 11/12, npn 11/13)	11
power supply (0V)	12
power supply (+24V)	13

fig. 1

CM030140, CM034440



minimum center distance for installation 55mm

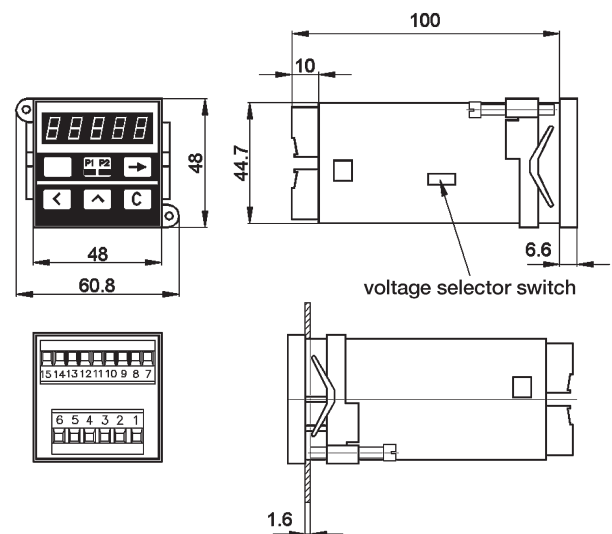
### PROGRAMMING OF THE DIP SWITCHES

dip switch	s1 counting mode	s2 reset	s3 frequency of count	s4 programming
off	adding	automatic with timed contact	10kHz	disabled
on	subtracting	external with latching contact	15Hz	free

TECHNICAL DATA	2 PRESETS
display	LED, 5 decades, 7.6mm high
counting range	-9,999 ... 99,999 (999)
operating voltage	12 ... 30V DC or 115/230V AC $\pm$ 10%
power consumption	5VA, 4W
output	relay, 1A/250V AC and/or pnp, 25mA, nc/no programmable
timed output	0.01 ... 99.99sec
power supply	12 ... 26V DC, 60mA
signal input	pnp or npn programmable, Re 3k $\Omega$
data storage	> 10 years via EEPROM
scale factor	0.0001 ... 999.99
counting mode	up/down, difference (A-B), sum (A+B), input A and B 90° phase quadrature
time delay relay functions	operating hours counter
time ranges	999.99sec / 99min 59.9sec / 999min 59sec / 999h 59min
housing material	polycarbonate, polyester
system of protection (EN 60529)	IP65 (front side)
ambient temperature	0 ... +50°C
frequency of count	3Hz; 25Hz; 10kHz programmable
connection	pluggable screw terminals

**connection**

counter with 2 presets	terminal
operating voltage	1
operating voltage	2
relay 1 make contact and/or break contact floating	3
relay 1 center contact floating	4
relay 2 make contact and/or break contact floating	5
relay 2 center contact floating	6
signal input A	7
signal input B	8
control input 1	9
control input 2	10
free	11
power supply (+24V)	12
power supply (0V)	13
RS485 interface (on request)	14
RS485 interface (on request)	15

**fig. 2**
**CM030942, CM034942, CM030943**


minimum center distance for installation 55mm

This multi-functional counter is available with an optional RS485 interface.

article-no.	design	description	notes	housing	voltage	output	current	display	fig.
CM030140	48x48x106.6	multi-function	1 preset, 15Hz/10kHz	polycarb.	24V DC	1 relay*	1A	LED, 5-digit	1
CM034440	48x48x106.6	multi-function	1 preset, 15Hz/10kHz	polycarb.	115+230V AC	1 relay*	1A	LED, 5-digit	1
CM030942	48x48x106.6	multi-function	2 presets, 3Hz/25Hz/10kHz	polycarb.	12 ... 30V DC	2 relays	1A	LED, 5-digit	2
CM034942	48x48x106.6	multi-function	2 presets, 3Hz/25Hz/10kHz	polycarb.	115+230V AC	2 relays	1A	LED, 5-digit	2
CM030943	48x48x106.6	multi-function	2 presets, 3Hz/25Hz/10kHz	polycarb.	12 ... 30V DC	2 x pnp	25mA	LED, 5-digit	2

\* additional pnp-, npn-output

The functions and programming of the multi-function counter are explained in detail in the operating instructions enclosed with the counter..

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

