dimensions   **48 x 48 x 106.6mm**

**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**

✓ **adjustable 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.

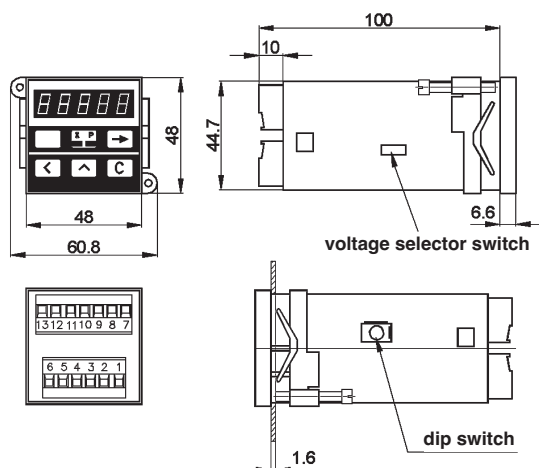With the counters in this series, use as a time counter and/or time relay is also possible. The user can select between four different counting ranges.

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

article-no.	CM030140	CM034440
function	counter with preset, 1 preset	counter with preset, 1 preset
operating voltage	24V DC	85 ... 265V AC
input	pnp, npn	pnp, npn
output signal	pnp, relay	relay

voltage selector switch

dip switch

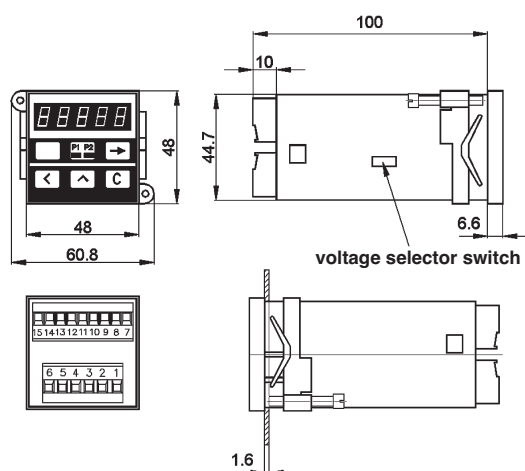## TECHNICAL DATA

version	pulse -/ elapsed-time counter
display	LED, 5 decades, 7.6mm high
function	up/down, difference (A-B), sum (A+B), input A and B 90° phase quadrature
output signal	relay, change-over contact 250V AC/110V DC/1A or pnp 24V DC; 50mA timed output: 0.01 ... 99.99sec
input	pnp or npn programmable
counting ranges	-9.999 ... 99.999
operating voltage	see above
power consumption	5W or 5VA
power supply	24V DC +20%, 100mA
data storage	> 10 years via EEPROM
scale factor	0.001 ... 99.999
time delay relay functions	on delay, off delay, holding time without stop, holding time with stop
time ranges	999.99sec / 99min 59.9sec / 999h 59 min
input frequency	5Hz, 10kHz programmable
dimensions	48x48x106.6mm
housing material	macrolon (polycarbonate)
front screen material	polyester
operating temperature	0 ... +50°C
air humidity	80% no condensation
system of protection (EN 60529)	IP65 (front side)
connection	pluggable screw terminals

article-no.	CM030942	CM030943	CM034942
function	counter with preset, 2 presets	counter with preset, 2 presets	counter with preset, 2 presets
operating voltage	12 ... 30V DC	12 ... 30V DC	85 ... 265V AC
input	pnp, npn, AC	pnp, npn, AC	pnp, npn, AC
output signal	relay	optocoupler	relay

voltage selector switch

TECHNICAL DATA

version	pulse -/ elapsed-time counter
display	LED, 5 decades, 7.6mm high
function	up/down, difference (A-B), sum (A+B), input A and B 90° phase quadrature
output signal	relay, change-over contact 250V AC/110V DC/1A or optocoupler (no short-circuit protection) timed output: 0.01 ... 99.99sec
input	pnp, npn or AC programmable
counting ranges	-9.999 ... 99.999
operating voltage	see above
power consumption	5W or 5VA
power supply	AC: 24V +20%, 100mA / DC: 9 ... 28V DC/100mA
data storage	> 10 years via EEPROM
scale factor	0.001 ... 99.999
time delay relay functions	operating hours counter with preset
time ranges	999.99sec / 99min 59.5sec / 999min 59sec / 999h 59min
input frequenz	3Hz, 25Hz, 10kHz programmable
dimensions	48x48x106.6mm
housing material	macrolon (polycarbonate)
front screen material	polyester
operating temperature	0 ... +50°C
air humidity	80% no condensation
system of protection (EN 60529)	IP65 (front side)
connection	pluggable screw terminals

1200   multi-function counter

connection CM030140, CM034440

counter with 1 prest	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

PROGRAMMING OF THE DIP SWITCHES CM030140, CM034440

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

connection CM030942, CM034942, CM030943

counter with 2 prests	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

This data sheet contains the available standard versions only.

You will receive an operating manual when the device is supplied. This will provide a detailed explanation concerning the functions and programming.

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