

dimensions 48 x 48 x 106.6mm

pulse and elapsed-time counter  
timer

- ✓ LED display 5-digit, approx. 8mm high
- ✓ leading zero suppression
- ✓ counting up/down, programmable up to 10kHz
- ✓ different types of programmable counting
- ✓ input A and B, phase-shifted by 90°
- ✓ adjustable scale factor
- ✓ auxiliary voltage 24V DC with AC operation
- ✓ data memory > 10 years via EEPROM
- ✓ different time counting and time relay functions
- ✓ also available with digital outputs

**counter with 1 or 2 presets  
potential-free relay outputs**



**description**

The programmable counters of model series **CM03** with LED display can be used in any situation where pulses need to be counted, distances measured or times recorded. One or two programmable presets actuate the relay or transistor outputs. Two in their function adjustable tracks are activated by sensors or pulse generators. The preset counters are optionally available for DC or AC voltage.

The 7.6mm high LED display has five digits. A decimal point can be adjusted individually.

If only one count input is being used, actuation can take place via an inductive sensor or a light barrier, for example. A decisive advantage of this counter is the option of connecting two-lane transducers. The devices provide a facility for choosing between one, two and four edge evaluation.

The counters in this model series can also be used as elapsed-time counters or time delay relays. Four different time

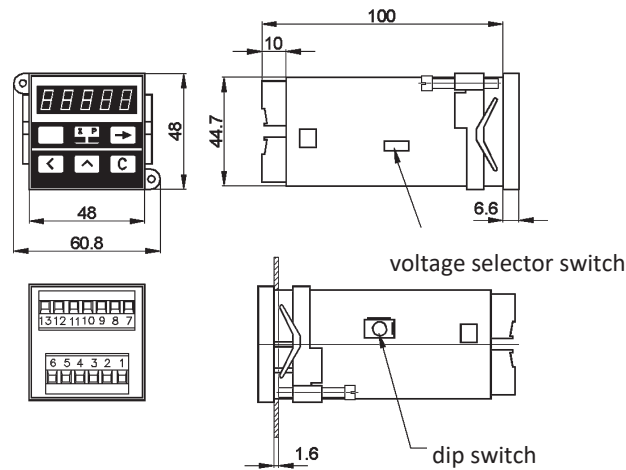
ranges are available for selection.

The counters are programmed using the membrane keyboard. For example, the position of the decimal point, the duration of the timed output for the switching outputs, the counting method and the reset button function can be programmed. All adjustable parameters are saved in an EEPROM for up to 10 years.

**application examples**

- ▶ Reproducible length preselection for automatic cutting devices
- ▶ Reliable wear and maintenance counter
- ▶ Process visualization in mechanical engineering/plant construction
- ▶ Pulse counter with position display

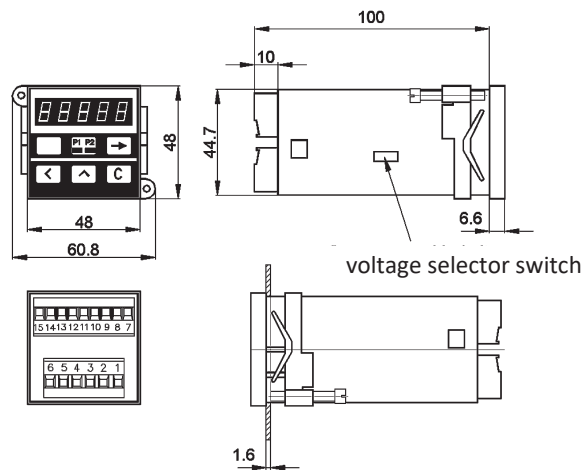
article-no.	CM030140	CM034440
function	preset counter, 1 preset	preset counter, 1 preset
operating voltage	24V DC	85 ... 265V AC
input	pnp, npn	pnp, npn
output signal	pnp, relay	pnp, relay



**TECHNICAL DATA**

version	pulse counter, 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-shifted
output signal	relay, change-over contact 250V AC/110V DC/1A or pnp 24V DC; 50mA timed output: 0.01 ... 99.99s
input	pnp or npn programmable
counting range	-9,999 ... 99,999
operating voltage	see above
power consumption	5W or 5VA
transducer power supply	24V DC +20%, 100mA
data storage	> 10 years via EEPROM
scale factor	0.001 ... 99.999
output function (time delay relay)	ON delay, OFF delay, holding time without stop, holding time with stop
time ranges	999.99s / 99min 59.9s / 999min 59s / 999h 59min
input frequency	5Hz, 10kHz programmable
dimensions	48x48x108mm
housing material	Makrolon
front screen material	polyester
operating temperature	0 ... +50°C
humidity	80% non-condensing
degree of protection (EN 60529)	IP 65 (front side)
connection	pluggable screw terminals

article-no.	CM034942
function	preset counter, 2 presets
operating voltage	85 ... 265V AC
input	pnp, npn, AC
output signal	relay



**TECHNICAL DATA**

version	pulse counter, 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-shifted
output signal	relay, change-over contact 250V AC/110V DC/1A or optocoupler (without short-circuit protection) timed output: 0.01 ... 99.99s
input	pnp, npn or AC programmable
counting range	-9,999 ... 99,999
operating voltage	see above
power consumption	5W or 5VA
transducer power supply	AC: 24V DC +20%, 100mA / DC: 9 ... 28V DC/100mA
data storage	> 10 years via EEPROM
scale factor	0.001 ... 99.999
output function (time delay relay)	elapsed hour counter with preset
time ranges	999.99s / 99min 59.9s / 999min 59s / 999h 59min
input frequency	3Hz, 25Hz, 10kHz programmable
dimensions	48x48x108mm
housing material	Makrolon
front screen material	polyester
operating temperature	0 ... +50°C
humidity	80% non-condensing
degree of protection (EN 60529)	IP 65 (front side)
connection	pluggable screw terminals

### connection CM030140, CM034440

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

### PROGRAMMING THE DIP SWITCHES CM030140, CM034440

DIP switch	s1	s2	s3	s4
	counting mode	reset	counting frequency	programming
off	adding	automatic with timed contact	10kHz	blocked
on	subtracting	external with permanent contact	15Hz	free

### connection CM034942

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

This data sheet only contains the available standard variants. For other output / connection variants, we kindly ask that you contact us.

We are happy to supply the right cable socket for the plug equipment. You will find a list in the "accessories" section of the catalog under **ipf-SENSORFLEX**® "cable sockets" or in the search window on our homepage [www.ipf-electronic.com](http://www.ipf-electronic.com) (using the search term "VK").

**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)