

# CI200120

Counters  
Pulse counters



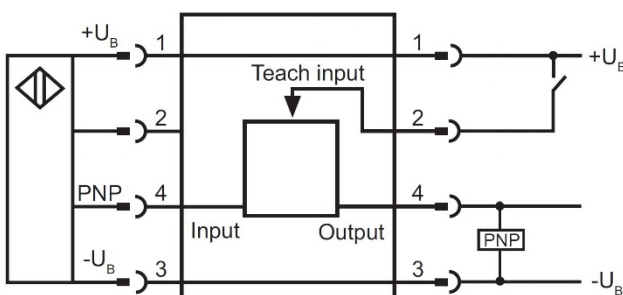
- / counting pulses or pauses**
- / direct adaption between sensor and cable socket**
- / factory setting preset 1**

**easy programming via external teach-in  
no additional installation necessary**

## TECHICAL DATA

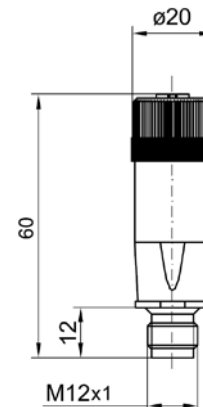
dimensons	Ø20 x 60mm
counting range	1 ... 65535ms
operating voltage	10 ... 30V DC
residual ripple	≤ 10% of U <sub>B</sub>
current consumption (w/o load)	< 10mA
input resistance	> 10kΩ
switching output	PNP transistor
output current (max. load)	150mA
short-circuit protection	+
display (function)	LED red
input frequency (pulse:interval = 1:1)	≤ 10kHz
temperature (operating)	0 ... 60°C
temperature (storage)	-20 ... +60°C
degree of protection	IP 67 (EN 60529)
housing	plastic PBTP / PA
connection	M12-socket / M12-connector, 4-pin

## Connection



Colors: 1 brown, 2 white, 3 blue, 4 black

## Dimensional drawing



## Adjustment and programming

- Pulse counter:**
1. Connect the sensor with the M12-socket of the counter and switch on the operating voltage. The connection can be made by a 4-wire cable socket, e.g. VK200321.
  2. Connect the teach input A (PIN 2, white) to +U<sub>B</sub> (PIN 1, brown).
  3. Activate the sensor for the number of events you would like to count.
  4. Disconnect the teach-input from +U<sub>B</sub>.
  5. The switching output will be switched on with every set pulse for the corresponding pulse time.

- Interval counter:**
1. Connect the sensor with the M12-socket of the counter and switch on the operating voltage. The connection can be made by a 4-wire cable socket, e.g. VK200321.
  2. Activate the sensor.
  3. Connect the teach input A (PIN 2, white) to +U<sub>B</sub> (PIN 1, brown).
  4. Disconnect the sensor for the number of intervals you would like to count.
  5. Disconnect the teach-input from +U<sub>B</sub>.
  6. The switching output will be switched on with every set interval for the corresponding interval time.

**Reset to factory settings:** Connect the teach input A (PIN 2, white) for at least 10s with +U<sub>B</sub> (PIN 1, brown). During this time the sensors's state must not be changed! The device operates now with the preset number 1.

## Examples

### 1. Gearwheel / Divider:

**On a gearwheel with 100 teeth, one pulse per rotation is to be measured.**

- a.) Mount a sensor with standardized M12-connection in a way that each tooth is safely recognized.
- b.) Connect the counter CI200120 between sensor and connection cable.
- c.) Teach the counter to preset „100“ → Connect the teach input to +U<sub>B</sub>, turn the gearwheel exactly one time.
- d.) Disconnect the teach-input from +U<sub>B</sub>.

At the counter's output, one pulse per rotation is measured!

### 2. Counting parts:

**Produced bulk goods parts are filled in boxes by means of a conveyor. The task is to specify the exact number of parts required to fill up the box.**

- a.) Mount a sensor with standardized M12-connection in a way that all parts are safely detected.
- b.) Connect the counter CI200120 between sensor and connection cable.
- c.) The "teach-input" stays connected to +U<sub>B</sub> until the desired number of parts has passed the sensor (until the box is full).
- d.) Release the teach-input from +U<sub>B</sub>.

At the counter's output an impulse is measured as soon as the number of parts is reached; the box is full!

**3. Inverter N.C. / N.O.:**

**The CI200120 can also operate as converter. If the sensor detects an object, the output switches off.**

- a.) Connect the counter CI200120 between sensor and connection cable.
- b.) Teach the counter as described under „interval counter“ with the preset number „1“.
- c.) Release the teach-input from +U<sub>B</sub>.

**SAFETY WARNINGS:**

This product may only be used in combination with a proximity switch according to EN 60947-5-2.

Before initial operation, please make sure to follow all safety instructions that may be provided in the product information!

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