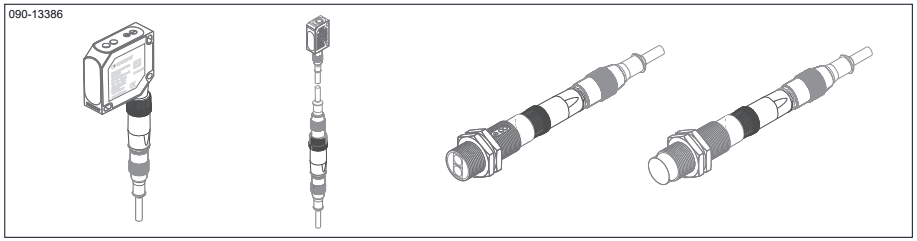
SmartPlug SPC1-AP6X / SPC1-AN6X

Programmable pulse or interval counter

- direct adaptation between sensor and connecting cable
- counting of pulses or intervals
- simple setting by external teach-input
- no additional wiring required
- counting range from 0 to 65535
- switching amplifier up to 150 mA
- NC/NO inverter

The SPC1 SmartPlug is a freely programmable counter for the direct adaptation to sensors with a standardized M12 connection.

090-13386

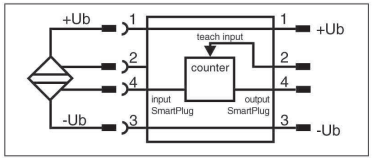


The SPC1 SmartPlug is available in 2 versions:

- PNP input - PNP output SPC1-AP6X (for use with PNP sensors)
- NPN input - NPN output SPC1-AN6X (for use with NPN sensors)

Connection:

The SmartPlug is very easy to connect: it is plugged onto the M12 connector of a sensor and the connecting cable is connected to the other side of the SmartPlug. The sensor configuration has to meet the standards (1 +Ub (BN) 3 -Ub (BU) 4 output (BK)).

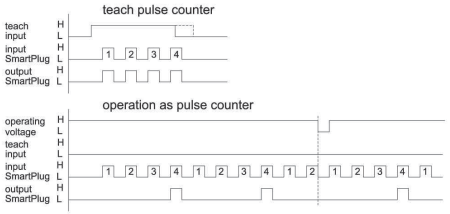


Setting:

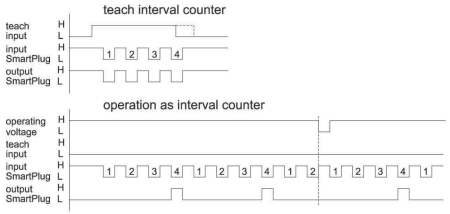
The setting of the preset number is made by using the signals „teach input“ and „input SmartPlug“. If for example 4 pulses have to be counted, the setting can be made as follows (operating voltage being switched on):
1. Connect teach input with + Ub
2. Actuate the sensor 4 times (= 4 pulses) (the SmartPlug recognizes automatically 4 pulses at the „input SmartPlug“)
3. Disconnect teach input from + Ub -> READY

After this setting, the output of the SmartPlug is activated every fourth pulse.
This setting is maintained when the sensor is switched off.

E55-00065



E55-00066



H= input or output active; L = input or output inactive

When switching on the operating voltage, the counting procedure is reset. The initial state of the preset number is 1 (pulse counter).

TURCK,Inc. 3000 Campus Drive Minneapolis, MN 55441 Phone 800-328-0580 Fax 763-553-0708

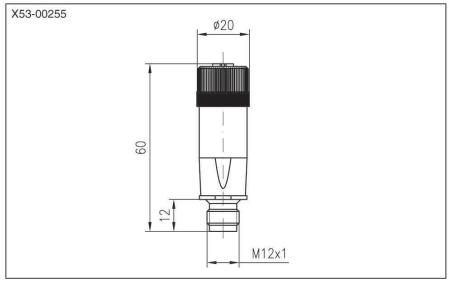
SmartPlug SPC1-AP6X / SPC1-AN6X

Programmable pulse or interval counter

Technical Data:

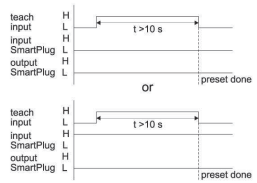
Operating voltage:	10 ... 30 V DC, residual ripple of max. 10 %	Display:	red LED
Own current consumption:	< 10 mA	Housing material:	plastic PBTP/PA
Input resistance:	> 10 kOhm	Protection standard:	IP 67
Max. input frequency:	10 kHz	Dimensions:	ø20 x 60
Min. response time:	0.1 ms	Connection Input:	4-pin socket M12
Max. output current:	150 mA short-circuit proof	Connection Output:	4-pin connector M12
Ambient temperature range:	0 ... +60 °C	Protection class (only if both ends connected):	
Storage temperature range:	-20 ... +60 °C	Weight:	15 g

X53-00255

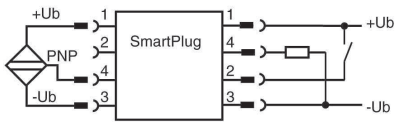


Preset to factory setting 1 pulse counter

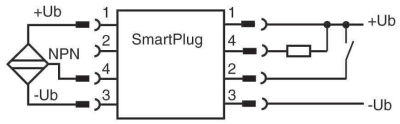
E55-00075



SPC1-AP6X



SPC1-AN6X



Examples:

1. **Gearwheel/Divider:** On a gearwheehl with 100 teeth, one pulse per rotation is to be measured.
a) A suitable sensor with standardized M12 connection is mounted in a way that each tooth is safely recognized.
b) A SmartPlug SPC1 is connected between sensor and sensor connecting cable.
c) The preset number 100 is taught into the SmartPlug, -> connect teach input with +Ub, turn round the gearwheel exactly one time.
d) Disconnect „teach input“ from +Ub. READY

At the output of the SmartPlug, one pulse per rotation is measured!

2. **Counting parts:** Bulk material is filled into cartons by means of a conveyor belt. The task is to specify the excact number of parts required to fill up the carton.
a) A suitable sensor with standardized M12 connection is mounted in a way that all parts are safely recognized.
b) A SmartPlug SPC1 is connected between sensor and sensor connecting cable.
c) The „teach input“ stays connected to +Ub until the desired number of parts has passed the sensor (= until the carton is full).
d) Disconnect „teach input“ from +Ub. READY

At the output of the SmartPlug, one pulse is measured when the preset quantity of parts has been reached; the carton is full!

3. **Switching amplifier:** Most sensors have a maximum output current of 100 mA. By using a SmartPlug, the maximun output current can be increased to 150 mA
a) A SmartPlug SPC1 is connected between sensor and sensor connecting cable.
b) The „teach input“ stays connected to +Ub until the sensor has been actuated once (preset number 1).
c) Disconnect „teach input“ from +Ub. READY

At the output of the SmartPlug every input pulse is measured, the output can be charged with 150 mA

4. **NC/NO inverter:** Teach the SmartPlug as interval counter "1". A input NC signal will be inverted into a NO signal and reverse.

CE

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

These units are not suited for safety related applications.

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Subject to change without prior notice

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