

SmartPlug SPF1-AP6X / SPF1-AN6X

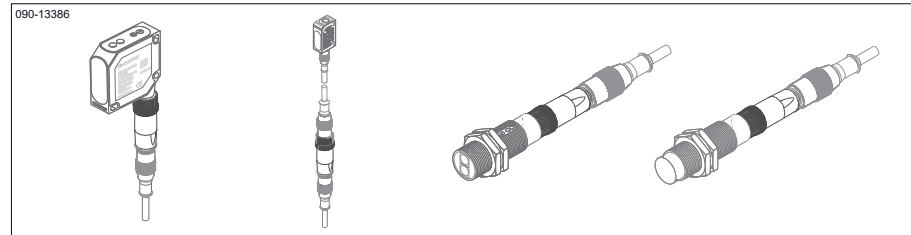
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Programmable over or under speed monitor

- direct adaptation between sensor and connecting cable
- teachable speed limit
- simple setting by external teach-input
- no additional wiring required
- frequency range 0,015 Hz - 1kHz
- output load up to 150 mA



The SPF1 SmartPlug is a frequency threshold modul for the direct adaptation to sensors with a standard M12 connection.

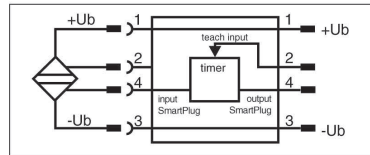


The SPF1 SmartPlug is available in 2 versions:

- PNP input - PNP output SPF1-AP6X (for use with PNP sensors)
- NPN input - NPN output SPF1-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)).



Function:

The SmartPlug SPF1 observes the frequency of the signal at the pin "input SmartPlug". The output is activated if the setup frequency falls below appr. 5%.

Setting for under speed monitoring:

1. Set sensor up to sense object with SmartPlug SPF1 connected. Make sure sensor is sensing properly and output is switching.
2. Move object or set rotation to nominal speed.
3. Connect + voltage +Ub to "Teach Input" and then disconnect (turn off) voltage +Ub. (Pulse +Ub to Teach Input, > 1 full cycle of senses object - e.g. >1 full revolution).
4. Done, if speed or frequency drops by 5% or 95% of nominal speed, then SmartPlug is activated.

Setting for over speed monitoring:

(note: over speed output will be inverted. i.e. output activated for normal speed & output off for over speed.)

1. Set sensor up to sense object with SmartPlug SPF1 connected. Make sure sensor is sensing properly and output is switching.
2. Move object or set rotation to 106% plus X% over speed allowance of nominal speed.
3. Connect + voltage +Ub to "Teach Input" and then disconnect (turn off) voltage +Ub. (Pulse +Ub to Teach Input, > 1 full cycle of senses object - e.g. >1 full revolution).
4. Done. If speed or frequency goes above setpoint, then SmartPlug output goes off.

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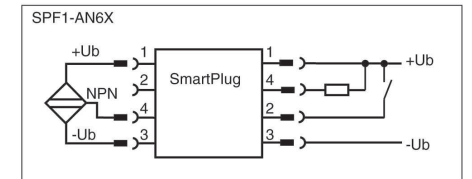
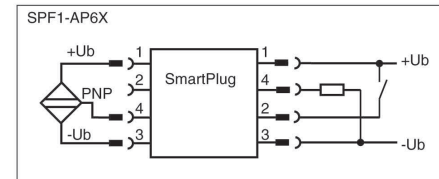
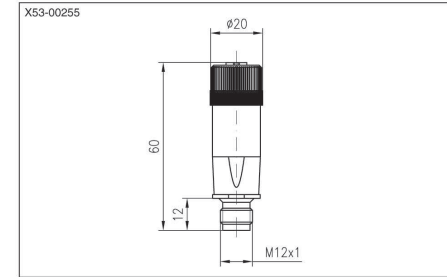
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Technical Data:

Operating voltage: 10 ... 30 V DC, residual ripple of max. 10 %
 Own current consumption: < 10 mA
 Input resistance: > 10 kOhm
 Max. input frequency: 10 kHz
 Min. response time: 0.1 ms
 Max. output current: 150 mA short-circuit proof
 Ambient temperature range: 0 ... +60 °C
 Storage temperature range: -20 ... +60 °C

Display: red LED
 Housing material: plastic PBTP/PA
 Protection standard: IP 67
 Dimensions: ø20 x 60
 Connection Input: 4-pin socket M12
 Connection Output: 4-pin connector M12
 Protection class (only if both ends connected):
 Weight: 15 g



Applications:

- jam detection
- R. P. M. observation
- conveyor built back detection
- cooling fan motion control

| Function | SmartPlug | Setting |
|--|----------------|---------------------|
| N.C./N.O. inverter | SPC1 | Interval counter 1 |
| Flip Flop | SPC1 | Interval counter 2 |
| Divider (1 pulse per evolution) | SPC1 | Pulse counter n |
| Count parts (count down) | SPC1 | Pulse counter n |
| Amplifier 150 mA | SPC1 | Pulse counter 1 |
| Off delay | SPT1 | Off delay n |
| On delay | SPT1 | On delay n |
| PNP / NPN converter | SPN1-AP6-ARN6X | Factory setting |
| NPN / PNP converter | SPN1-AN6-ARP6X | Factory setting |
| PNP / NPN converter and N.C./N.O. inverter | SPN1-AP6-ARN6X | Setup: N.O. -> N.C. |
| NPN / PNP converter and N.C./N.O. inverter | SPN1-AN6-ARP6X | Setup: N.O. -> N.C. |
| Motion monitor | SPF1-AP6X | |
| Spin monitor | SPF1-AP6X | |
| Jam monitor | SPF1-AP6X | |



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.

Subject to change without prior notice

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