



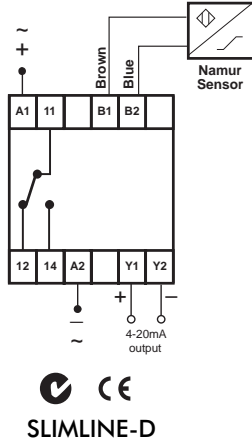
Rotational Speed Monitor (Tachometer Relay)

Pulse input via Namur sensor
Relay & 4-20mA Output

C320P



WIRING EXAMPLE



Application Examples

- **Pulse Frequency to Current conversion.**
- Back-up system for tacho generators on mine hoists
- Over-speed detection on mine loco's, fork lift trucks etc.
- Sequence starting on interdependent conveyor belts
- Starter motor disabling on diesel engines
- Conveyor belt slip detection
- Conveyor belt tearing detection
- Indication of production speed or manufacturing feed rates
- Indication of rotational speed
- Low power signal to DIN 19234

ORDERING CODE

TYPE	SUPPLY VOLTAGE	AC/DC	RELAY CONTACTS	Fn
C320PD	230	A	S	2

Technical Specification

Power Supply:

AC: 12, 24, 115, 230 (ie. 220-240), 400 (ie. 380-415)V $\pm 15\%$
 Isolation (sensor input to power supply): 2kV
 DC: 10-30V, 48, 60, 110V $\pm 15\%$
 Isolation (sensor input to power supply): no galvanic isolation.

Proximity Sensor Input:

Type: NAMUR (DIN 19234) eg. Rhomberg RI0-1805F
 Short circuit current: 8mA DC.

Open circuit voltage: 8.2 VDC

Hysteresis: 6% (fixed)

Start-up delay: 0-30 seconds

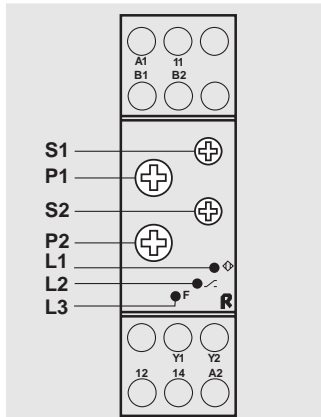
Repeatability: <1%

Analogue output:

Fn	Range	Max. load
1	0 - 1mA DC	8k ohms
2	4 - 20mA DC	400 ohms
3	0 - 20mA DC	400 ohms

Range [RPM]	Response time [sec]
10-100	0.7 - 6.1
50-500	0.22 - 1.3
100-1000	0.16 - 0.7
500-5000	0.11 - 0.22
1000-10000	0.11 - 0.16

Description of Controls



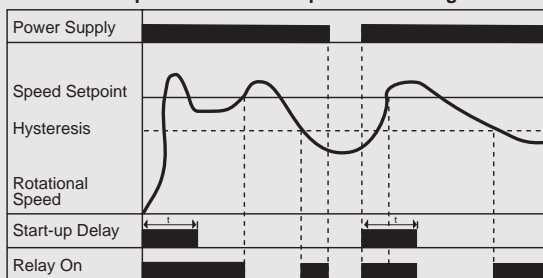
- P1: **The Start-up delay** is set on P1. This time is adjustable from 0 to 30 seconds.
- P2: **The Overspeed/Underspeed Setpoint** is set on P2. Maximum setting of 100% corresponds with the speed selected on S2.
- S1: **The Mode of Operation** is set on S1. If set to "OS" the unit operates as an over-speed detector. If set to "US" the unit provides under-speed detection.
- S2: **The RPM Speed Range** is set on S1.
- L1: The green "Input Sensing" LED illuminates when the NAMUR sensor detects a target. It also illuminates if the sensor is disconnected or the sensor leads are severed (open circuit).

- L2: The yellow "Relay ON" LED illuminates when the relay is energised.
- L3: The red "Cable Fault" LED illuminates when:
 - a short circuit occurs on the sensor leads.
 - an open circuit occurs on the sensor leads or the sensor is disconnected.

Note: An Open Circuit condition will cause both L1 as well as L3 to illuminate. A Short Circuit condition will cause only L3 to illuminate.

Operational Diagrams

Example of C320P Overspeed Monitoring



t = start-up delay (adjustable from 0 to 30 seconds)

Example of C320P Underspeed Monitoring

