

# Speed control

## → Speed control relay - 35 mm

- Control of overspeed, underspeed, operating rate, stopping
- Measurement via discrete sensors - 3-wire PNP or NPN, Namur, voltage 0-30V or volt-free contact type
- Works with either NO or NC sensors
- Time between pulses adjustable from 0.05 s to 10 min.
- Power-on inhibit time, adjustable from 0.6 to 60 s
- Inhibit time can be managed via an external contact



HSV

### Part numbers

Type	Nominal voltage (V)	Code
HSV	24 → 240 V $\sim$	84874320

### Product adaptations



- Customisable colours and labels
- Possible to delete settings
- Fixed threshold in the generic measurement range
- Fixed or adjustable time delay

### Accessories

Description	Code
Removable sealable cover for 35 mm casing	84800001

### General characteristics

Supply	
Supply voltage Un	24 V → 240 V $\sim$
Voltage supply tolerance	-15% / +10%
Operating range	20.4 V → 264 V $\sim$
Polarity with DC voltage	No
$\sim$ supply voltage frequency	50 / 60 Hz $\pm$ 10%
Galvanic isolation of power supply/measurement	Yes
Power consumption at Un	5 VA in $\sim$ / 3 W in $\text{---}$
Immunity from micro power cuts	50 ms
Inputs and measuring circuit	
Input circuit 3-wire sensors	PNP or NPN, 12V, 50 mA max.
Input circuit NAMUR sensor	12 V / 1.5 K $\Omega$ *
Input circuit Contact	12 V / 9.5 K $\Omega$
Input circuit Voltage input	0 V min. / 30 V max. / 9.5 K $\Omega$ High state 4.5 V min. Low state 1 V max.
Minimum pulse time	5 ms in high and low state
Frequency of measured signal	1.5 m Hz minimum, 22 Hz maximum
Measurement ranges	0.5 s - 1 s - 5 s - 10 s - 1 mn - 5 mn - 10 mn
Threshold adjustment	10 → 100% of the range
Fixed hysteresis	5% of displayed threshold
Display precision	$\pm$ 10% of full scale
Repetition accuracy with constant parameters	$\pm$ 0.5%
Measuring error with voltage drift	< 1% across the whole range
Measuring error with temperature drift	$\pm$ 0.1% / °C max.
Timing	
Maximum threshold crossing response time	15 ms
Reset time S2	50 ms minimum (in memory mode)
Reset time	In memory mode (power break) : 1500 ms minimum
Inhibit time delay	On energisation: 0.6 → 60 s (0, +10% of full scale)
Repetition accuracy with constant parameters	$\pm$ 0.5%
Delay on pick-up	50 ms
Display precision	$\pm$ 10% of full scale

## General characteristics

### Output

Type of output	1 single pole changeover relay
Type of contacts	No cadmium
Maximum breaking voltage	250 V $\sim$ / $\text{---}$
Max. breaking current	5A $\sim$
Min. breaking current	10 mA / 5 V $\text{---}$
Electrical life (number of operations)	1 x 10 <sup>5</sup>
Breaking capacity (resistive)	1250 VA $\sim$
Maximum rate	360 operations/hour at full load
Operating categories acc. to IEC 60947-5-1	AC 12, AC 13, AC 14, AC 15, DC 12, DC 13, DC 14
Mechanical life (operations)	30 x 10 <sup>6</sup>

### Insulation

Nominal insulation voltage IEC 60664-1	250 V
Insulation coordination (IEC 60664-1 / 60255-5)	Overvoltage category III: degree of pollution 3
Rated impulse withstand voltage IEC 60664-1/60255-5	4 kV (1.2 / 50 $\mu$ s)
Dielectric strength IEC 60664-1/60255-5	2 kV AC 50 Hz 1 min
Insulation resistance IEC 60664-1 / 60255-5	> 500 M $\Omega$ / 500 V $\text{---}$

### General characteristics

Display power supply	Green LED
Display relay	Yellow LED
Inhibit display	Yellow LED
Casing	35 mm
Mounting	On 35 mm symmetrical DIN rail, IEC/EN 60715
Mounting position	All positions
Material: enclosure plastic type VO to UL94 standard	Incandescent wire test according to IEC 60695-2-11 & NF EN 60695-2-11
Protection (IEC 60529)	Terminal block: IP20 Casing: IP30
Weight	120 g
Connecting capacity IEC 60947-1	Rigid: 1 x 4 <sup>2</sup> - 2 x 2.5 <sup>2</sup> mm <sup>2</sup> 1 x 11 AWG - 2 x 14 AWG Flexible with ferrules: 1 x 2.5 <sup>2</sup> - 2 x 1.5 <sup>2</sup> mm <sup>2</sup> 1 x 14 AWG - 2 x 16 AWG
Max. tightening torques IEC 60947-1	0.6 $\rightarrow$ 1 Nm / 5.3 $\rightarrow$ 8.8 Lbf.In
Operating temperature IEC 60068-2	-20 $\rightarrow$ +50°C
Storage temperature IEC 60068-2	-40 $\rightarrow$ +70°C
Humidity IEC 60068-2-30	2 x 24 hr cycle 95% RH max. without condensation 55°C
Vibrations according to IEC/EN60068-2-6	10 $\rightarrow$ 150 Hz, A = 0.035 mm
Shocks IEC 60068-2-6	5 g

### Standards

Marking	CE (LVD) 73/23/EEC - EMC 89/336/EEC
Product standard	NF EN 60255-6 / IEC 60255-6 / UL 508 / CSA C22.2 N°14
Electromagnetic compatibility	Immunity EN 61000-6-2/IEC 61000-6-2 Emission EN 61000-6-4/EN 61000-6-3 IEC 61000-6-4/IEC 61000-6-3 Emission EN 55022 class B
Certifications	UL, CSA, GL pending
Conformity with environmental directives	RoHS, WEEE

### Comments

The IEC 60947-5-6/1999-12 NAMUR standard does not impose the operating voltage (open circuit voltage) or the load resistance (source resistance of the control amplifier), but it defines the test conditions for which, using the sensor voltage/current characteristics with high and low impedance, the normal operating zones are specified. The great majority of NAMUR sensors use a 12 V supply voltage. Matching the load resistance to the operating voltage allows the nominal switching distance to be maintained.