WES for the Elevator Market

CONTACTLESS MONITORING SOLUTION FOR ELEVATORS

Warner Electric Sensor (WES)

The WES is a contactless monitoring solution, providing reliable detection of the smallest strokes, especially on spring applied brakes with noise damping systems. With no sensitive mechanical parts, it outmatches the electromechanical solutions by far regarding functional safety and lifecycle expectance.

The WES features a temperature compensated sensor able to operate from -40°C up to 105°C. It offers 4 types of outputs. An NPN type (Version 1) with an integrated pull-up resistor that simplifies the integration in almost all PLC based installations, a highly isolated SSR relay type NC and NO outputs (Version 2 and 4) that provides backward compatibility with almost all dry contact switches of the market, and an optional analog ratiometric output (Version 3) which offers a real time wear detection that measures the brake air gap.

- Compact design
- Accurate sensing : Hysteresis < 0.05 mm over the full range of temperature
- No “relaxation” areas are needed
- NPN output (integrated pull-up resistor)
- NO/NC electrical function compatible with standard mechanical µ-switches (depending on Voltage and Current)
- Analog output for wear sensor
- Operating temperature -40°C to 105°C

Elevator Applications

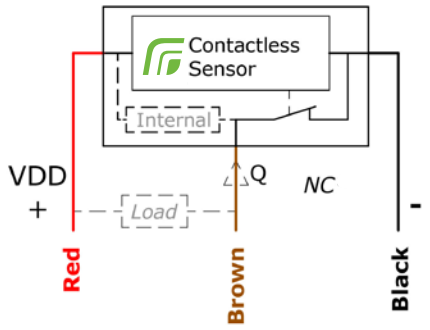
- Gearless Motors
- Gear Motors

www.warnerelectric.com

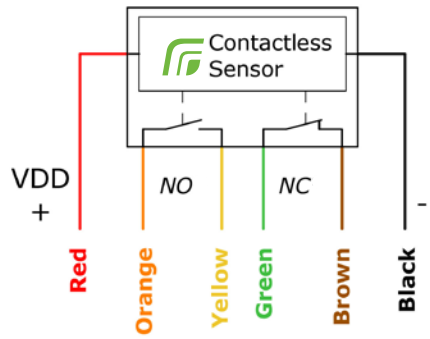
WARNER ELECTRIC™
A REGAL REXNORD BRAND

WES

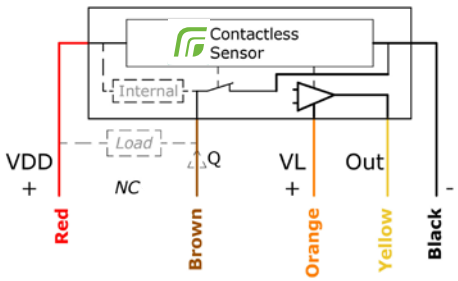
VERSION 1



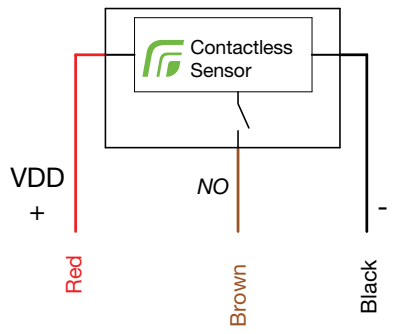
VERSION 2



VERSION 3



VERSION 4



State Detection - NC

NPN Output (Sink) - 3 wires

Parameter	Symbol	Values			Note/Conditions
		Min	Typ	Max	
Supply Voltage	VDD	4 VDC	24 VDC	30 VDC	Reverse Voltage Protected
Supply Current				10 mA	
Operating Temperature		-40 °C		105 °C	
Output Voltage	Q	0.5 VDC	24 VDC	30 VDC	
Output Current	Q	< 1mA		30 mA	DC Current ESD protection to IEC 61000-4-2, level 4
Output Saturation Voltage				0.6 V	
Output Fall Time		50 µs			Depending on Load
Output Rise Time		50 µs			

State Detection - NO/NC

SSR Outputs -6 wires

Parameter	Symbol	Values			Note/Conditions
		Min	Typ	Max	
Supply Voltage	VDD	4 VDC	24 VDC	30 VDC	Reverse Voltage Protected
Supply Current	IDD			25 mA	
Operating Temperature		-40 °C		85 °C	
Output Voltage				60 VDC Peak	AC or DC allowed
Output LOAD Current				100 mA	AC or DC allowed
Output ON Resistance				16Ω	
Output OFF State Leakage Current				1 µA	
Output Fall Time				10 ms	VL = 10V
Output Rise Time				10 ms	

State Detection - NC + Brake Air Gap Measurement

NPN Output (Sink) - Analog Output - Ratiometric 5 VDC output - 5 wires

Parameter	Symbol	Values			Note/Conditions
		Min	Typ	Max	
Supply Voltage	VDD	4 VDC	24 VDC	30 VDC	Reverse Voltage Protected
Supply Voltage	VL	4.5 VDC	5 VDC	5.5 VDC	Reverse Voltage Protected
Supply Current				10 mA	
Operating Temperature		-40 °C		105 °C	
Output Voltage	Q	0.5 VDC	24 VDC	30 VDC	
Output Current	Q	< 1 mA		30 mA	DC Current ESD protection to IEC 61000-4-2, level 4
Output Voltage	Out	0.375 VDC	2.5 VDC	4.625 VDC	Out(Typ) = -S*Airgap(mm) + 2,5
Output Current	Out			1 mA	
Output Voltage Sensitivity	S	0.95 V/mm	1 V/mm	1.048 V/mm	

State Detection - NO

SSR Outputs - 3 wires

Parameter	Symbol	Values			Note/Conditions
		Min	Typ	Max	
Supply Voltage	VDD	4 VDC	24 VDC	30 VDC	Reverse Voltage Protected
Supply Current	IDD			25 mA	
Operating Temperature		-40 °C		85 °C	
Output Voltage				60 VDC Peak	AC or DC allowed
Output LOAD Current				100 mA	AC or DC allowed
Output ON Resistance				16Ω	
Output OFF State Leakage Current				1 µA	
Output Fall Time				10 ms	VL = 10V
Output Rise Time				10 ms	