SR 2V1 SPEED RELAY

STANDARD SERIES CE EU DIRECTIVES

ROTECH

FOR ROTATION MONITORING

THE SR 2V1 SERIES SPEED RELAY MODULES ARE INTENDED FOR USE WITH ALL ROTECH MOTION SENSORS, SHAFT ENCODERS, WHEEL SENSORS, VIBRATION SENSORS AND PROXIMITY PROBES TO DETECT IF THE SPEED OF A ROTATING SHAFT RISES OR FALLS BELOW A PRESET LEVEL.

FEATURES:

DUAL AC SUPPLY STANDARD (OPTIONAL - 12/24 VOLT DC)

EASY SETTING OF REQUIRED TRIP/ALARM SPEED DIRECTLY IN RPM

EXTENSIVE RANGE OF OPTIONAL FEATURES INCLUDING AUTOMATIC START DELAY (REFER TO ADDITIONAL INFORMATION ON AUTOMATIC START DELAY OPERATION)

MULTIPLE RANGES, FIXED START DELAY, ETC.

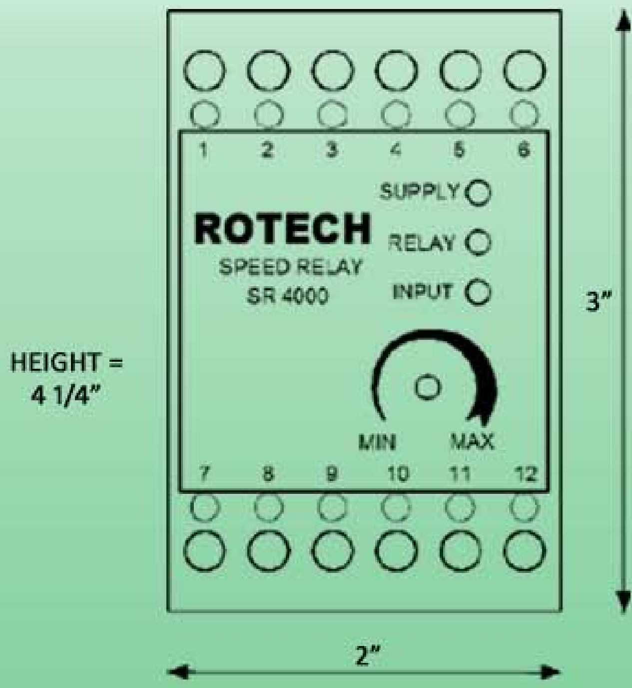
THREE SPEED RANGES ARE AVAILABLE ON EACH MODULE. STANDARD RANGES ARE 1-10 RPM, 1-100RPM AND 1-1000 RPM. THE REQUIRED RANGE BEING SELECTED BY LINK ON THE TERMINAL RAIL. OTHER MODULES ARE AVAILABLE WITH RANGES COVERING THE SPEEDS 0.01 RPM TO 10,000 RPM.

IN NORMAL OPERATION THE OUTPUT RELAY OF THE MODULE IS ENERGISED IF THE SPEED OF THE SHAFT IS ABOVE THE SET LEVEL AND DE-ENERGISED IF SPEED IS BELOW THE SET LEVEL.

FRONT MOUNTED LED'S INDICATE POWER ON, RELAY ENERGISED, INPUT SIGNAL STATUS.

Dimensions and Installation Information

DIMENSIONS SHOWN IN IMPERIAL



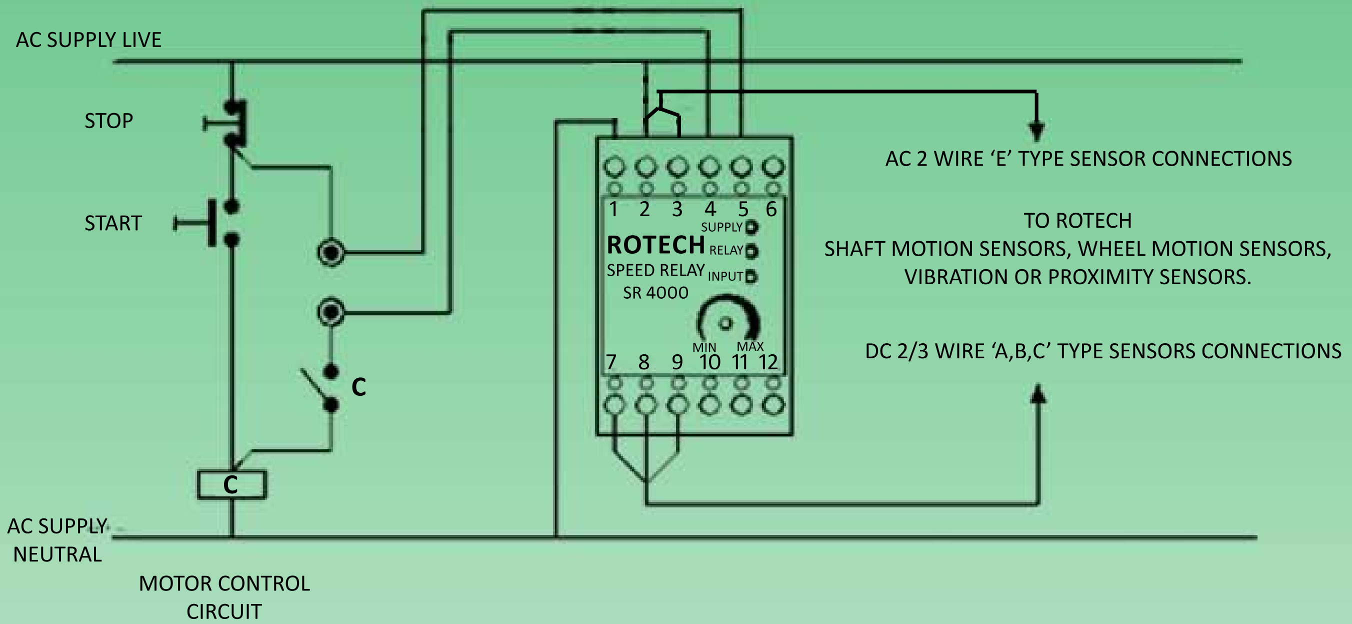
CONNECTIONS: DC 2/3 WIRE SENSORS

1 2 3	NEUTRAL 110 / 120V 50/60 Hz 220/240V 50/60Hz		AC MAINS POWER SUPPLY	1 2	12/24VDC-POSITIVE 12/24VDC-NEGATIVE DC POWER SUPPLY
4 5 6	N.O. COMMON N.C.		OUTPUT RELAY RATED 5A @ 250 VAC/ 30VDC		
7 8 9	0VDC INPUT +12VDC	BLUE BROWN 2 WIRE SENSORS	BLUE BLACK BROWN 3 WIRE SENSORS		
10 11 12	RANGE LINKS	NO LINKS =0 TO 10RPM LINK 10 TO 11 =0 TO 100RPM LINK 10 TO 12 =0 TO 1000RPM			

CONNECTIONS: AC 2 WIRE 'E'-TYPE SENSORS ONLY

1 2	NEUTRAL 110 / 120V 50/60 Hz	AC MAINS POWER SUPPLY	BROWN	ROTECH MOTION SENSOR
3	INPUT - AC 'E' TYPE 2 WIRE SENSOR		BLUE	
4 5 6	N.O. COMMON N.C.	OUTPUT RELAY RATED 5A @ 250 VAC/ 30VDC		
7 8 9	0VDC INPUT +12VDC			
10 11 12	RANGE LINKS	NO LINKS =0 TO 10RPM LINK 10 TO 11 =0 TO 100RPM LINK 10 TO 12 =0 TO 1000RPM		

TYPICAL INSTALLATION SHOWN FOR 110/120 V AC SUPPLY



MOUNTING: DIN 35x7.5mmRAIL
PROTECTION: IP50
TEMPERATURE: -14 DEG F TO +158 DEG F

ROTECH
Your Material Handling Specialists
4B ELEVATOR COMPONENTS LIMITED
729 Sabrina Drive . East Peoria, Illinois 61611 USA. Telephone 309.698.5611 . Fax 309.698.5615

SPEED RELAYS SR2V1
COMMISSIONING AND TESTING

COMMISSIONING AND TESTING MUST ONLY BE CARRIED OUT BY A QUALIFIED AND COMPETENT TECHNICIAN WHO IS FULLY FAMILIAR WITH THE PLANT TO WHICH THE "ROTECH" EQUIPMENT IS INSTALLED.

1 The SR2V1 Speed Relay monitors the speed of a drive and gives a signal if the speed of the drive falls below or rises above its normal running speed, the output relay of the SR2V1 can be connected to give a variety of control functions.

- 1.1 The output relay can be connected to sound an alarm, bring on a warning light, etc
- 1.2 It can be connected into the motor control circuit to switch off / trip out the drive motor.
- 1.3 It can be connected into the motor control circuit of a conveyor, machine, etc, proceeding the drive to which it is fitted, to stop the delivery of material, etc to the drive that has slowed down or stopped.
- 1.4 With the use of additional control relays and / or timers the above functions can be combined, plus many others created.

2 Use of the start up delay is optional, this feature is normally only required when the SR2V1 is connected as in 1.2 above and the time taken to reach normal, running speed is several seconds longer.

SETTING UP

1 Check that all connections are correct and any links fitted to select the running speed range.

2 Turn the potentiometer on the SR2V1 Speed Relay fully anti – clockwise.

3 Start the drive.

4 "Supply On" and "Relay On" indicators should be illuminated and "Input" indicator should be pulsing or partly illuminated.

5 Turn the potentiometer slowly clockwise until the "Relay On" indicator extinguishes.

6 Now turn potentiometer anti – clockwise until "Relay On" indicator just illuminates.

7 The SR2V1 Speed Relay is now set to de- energise if the speed of the drive decreases below that set on the potentiometer.

8 If the drive is subject to temporary short period decreases in speed that you wish to ignore, the potentiometer can be turned further anti- clockwise to say 80% or 70% etc, of normal speed, the SR2V1 Speed Relay will then only de – energise if the speed of the drive falls below this setting.

9 Test by starting and stopping the drive, when running normally "Relay On" indicator will be illuminated, observe that when the stop button is pressed, as soon as the drive speed decreases below that set on the potentiometer, the "Relay On" indicator extinguishes.

SPEED RELAYS SR2V1
TESTING AND TROUBLE SHOOTING

1. IMPORTANT- All connections and dis-connections must be made with mains power supply switched off.

2. Under normal running conditions "Supply On" and "Relay On" indicators should be illuminated.

3. "Input" indicator should be observed to pulse on and off when the drive is running slowly. At higher speeds on/off pulses become blurred and indicator is illuminated but not at full brightness. When fitted to higher speed drives the input can be tested by stopping drive and observing that at final few rpm before stopping "Input" indicator pulses on and off. When stopped "Input" indicator can be in either on or off condition. If no input signal is observed, check connections to shaft encoder are correct, if input signal is still not observed proceed to 6.

4. If input signal is present but the SR2V1 cannot be set up correctly then proceed as follows:-

   4.1 Turn potentiometer fully clockwise, if "Relay On " indicator does not extinguish, then the speed range selected is to low, change speed range links on terminals to select a higher range.
   4.2 Turn potentiometer fully anti-clockwise, if "Relay On" indicator is not illuminated then speed range selected is to high, change speed range links on terminals to select a lower range.

5. "Relay On" indicator extinguishes but does not stop drive motor, check correct connections have been made to SR2V1 relay terminals (no contacts 4 & 5) and that all external connections to motor control circuit are correct.

6. Testing the SR2V1 Speed Relay

   6.1 NON– E Types (DC Sensors) Only
   Disconnect shaft encoder connections to terminals 7, 8 & 9
   Disconnect any speed range links to terminals 10, 11 & 12
   Connect a small switch or push button between terminals 8 & 9
   Simulate input pulses by switching on and off
   "Input" indicator should illuminate / extinguish and "Relay on" indicator should illuminate.
   Set switch to off position, "Relay On" indicator should extinguish (on low speed units this may take several seconds)

   6.2 "E" Types (AC Sensors)
   Disconnect shaft encoder connections to terminals 1 or 2 & 3
   Disconnect any speed range links to terminals 10,11 & 12
   Connect a small, insulated switch or push button between terminals 2 & 3
   Simulate input pulses by switching on and off
   "Input" indicator should illuminate / extinguish and "Relay On" indicator should illuminate
   Set switch to off position, "Relay On" indicator should extinguish (on low speeds this may take several seconds)

7. Satisfactory completion of the above tests indicates that the SR2V1 Speed Relay is operating correctly

If when the shaft encoder is re connected the system is still not operational, then the problem is either with the installation cables or the shaft encoder

See shaft encoder installation data sheet for information on testing shaft encoders.

4B ELEVATOR COMPONENTS LIMITED
729 Sabrina Drive . East Peoria, Illinois 61611 USA. Telephone 309.698.5611 . Fax 309.698.5615