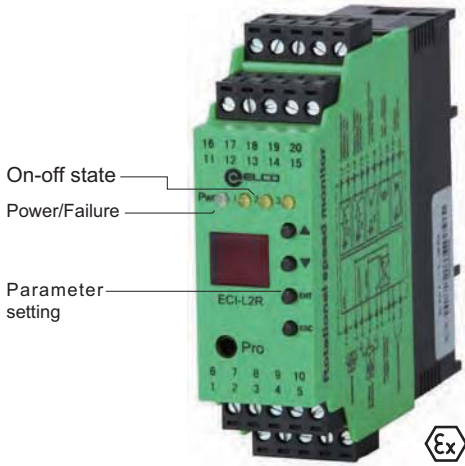


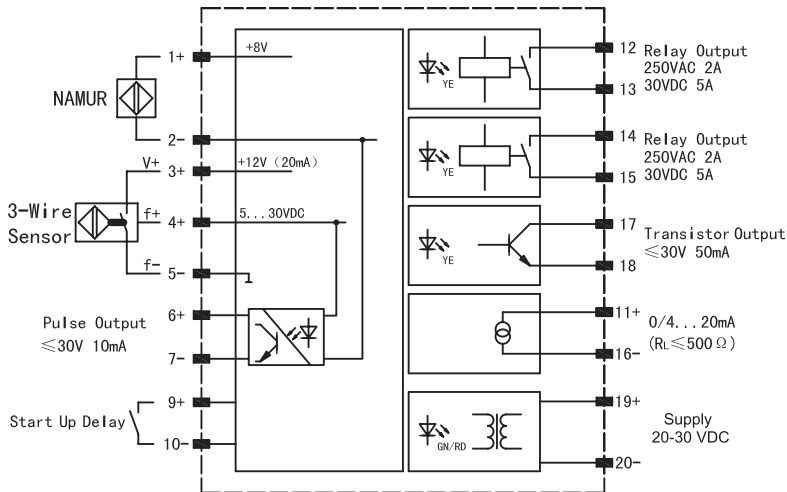
# Rotational Speed Monitor

## ECI-L2R

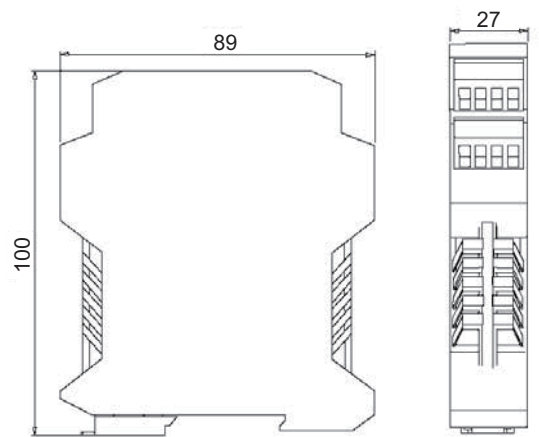


- 1-channel speed monitor
- Frequency-current converter
- Over-speed and under-speed detection plus windows function
- Detection range 1mHz...10KHz (0.06...600 (0.06...600 000 pulse/min-1)
- Used to connect a standard sensor according to EN60947-5-6 (NAMUR)
- Used to connect 3-wire system sensor and external signal source for 5...30V pulse level
- Current output 0/4...20mA (Reversible output)
- 2 relay output and 1 transistor output can be configured as follows:
  - Alarm output
  - 2-point controller (On-off point)
  - Pulse distribution (Only for transistor output)
- Pulse output
- Input loop failure can be programmed as analogue signal output
- Parameter can be easily and freely configured, and measured values can be viewed via the four buttons on product panel
- Measured values are stored in ring storage

### Wiring diagram:



### Mechanical drawing:



## Rotation Speed Monitor

### Main Technical Parameter :

### ECI-L2R

Model	ECI-L2R
Power consumption	≤ 3W (Single stage)
Galvanic isolation	Between input loop, output loop and power supply 250Vrms. Testing voltage is 2.5KVrms
Speed monitoring	Underspeed/Superspeed
Monitoring range/adjustable range	0.06...600000 min <sup>-1</sup> (Digital adjustment)
– Input frequency	≤ 1200000 min <sup>-1</sup> (20 kHz)
Interval time	≥ 0.02 ms
Pulse time	≥ 0.02 ms
Start delay time	0...1000 s (Adjustable)
Input loop	
NAMUR input	According to EN60947-5-6 (NAMUR)
– Working feature	$U_0 = 8.2V$ ; $I_k = 8.2mA$
– Switch threshold	1.55 mA
– Switch hysteresis	0.2 mA
– Break release point	≤ 0.1 mA
– Short-circuit release point	≥ 6 mA
3-wire sensor	
– Voltage	12 V
– Current (No load current)	≤ 20 mA
External signal source	
– 0-signal	0...3 V
– 1-signal	5...30 V
– Input impedance	26 KΩ
Output loop	Two relays/one transistor
Relay output	Two variable contacts
– Switch voltage	≤ 250 V
– Switch current	≤ 2 A
– Switch capacity	≤ 500 VA/60W
– Switch frequency	≤ 5 Hz
– Contact material	Ag-alloy + 3 μm Au
Pulse output	
– External voltage	< 30 V
– Current	≤ 10 mA
Transistor output	Passive, shortcircuit protection
– Switch voltage	≤ 30 VDC
– Switch current per output	≤ 50 mA
– Switch frequency	≤ 10 kHz
– Voltage drop	≤ 1.3 V
Current output	0/4...20 mA (Reversible)
Measured value storage	
Number of measured point	8000
Front trigger/rear trigger length	
Minimum...Maximum (Incremental amplitude)	1st range: 0 s...600 s (1 s), 2nd range: 10 min...600 min (1 min) 3rd range: 10 h...600 h (1 h)

- ECI-L2R is designed to monitor the speed of a motor shaft, gear and turbine. It is used for over-speed and under-speed. A real time speed is displayed on the display screen of front panel.

- On-off state of output relay or transistor corresponded to it is displayed by yellow LED. Normal working state is displayed by green LED. Input pulse is displayed on the screen.

- Input signal may be of a sensor, 3-wire sensor or an external signal source (DC 5...30V) in accordance with EN60947-5-6 standard. When a NAMUR sensor is used, a short circuit and/or wire breakage monitoring function of circuit can be fulfilled.

- If input loop fails, and relay is not exited and transistor is not conducted, the displayed light (Pwr) of power supply LED will become red. Working voltage 12V (520mA) can be provided for 3-wire pnp sensor by a speed monitor.

- External signal source must have a signal range of 5...30VDC. Input signal is provided for other processors by passive pulse output.

- To provide fast response time under lower speed state, equipment is based on digital pulse principle. High-speed monitoring is based on time window application. Response time depends on pulse interval at lower speed.

- Menu parameter setting can be carried out by four buttons. Setting process is indicated on the screen.

- All outputs can be independently programmed to monitor not only over-speed and but also under-speed. Two relay outputs can be programmed as windows function to combine over-speed and under-speed. Transistor output may be used as pulse distributor.

- Measured values can be permanently written into the ring storage with 8000 measuring points. Write program must be stopped by a prior defined triggering value, that is, when a certain limited value is exceeded, a recorded signal will be read.

- Hysteresis of switch is depended on settable ON and OFF point of switch. One independent off time can be set for each output to avoid shutdown of equipment due to sudden pulsation within short time. Locking function is set to prevent relay from becoming exciting once more.

- Output is NO mode, that is, when speed is within allowable range, output is in NO state of switch.

- Actual speed and limited value are displayed by Hz. All settings and displayed units may be adjusted by adjusting time based and setting pulse number per turn. Please consider that, if min<sup>-1</sup> replaces Hz as displayed unit, time based number is adjusted to 60.