Innovate

Design

Deliver

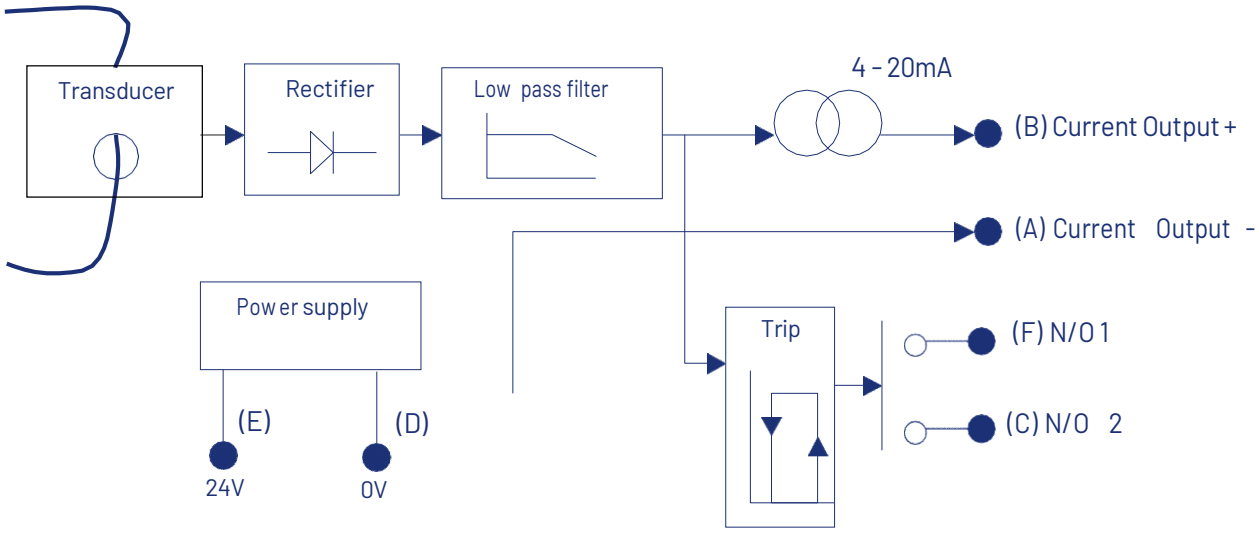
Small Signal Current Monitoring (NIC)

Non-instrusive Current Monitors (NIC's) are used for wayside applications to assist in preventative maintenance in signalling AC and DC currents.

Indicating signalling and other wayside equipment requires repair or replacement before failure.

The NIC Unit has 4-20mA current loop output and volt-free contacts which activate when the threshold of the device is reached.

Functional block diagram

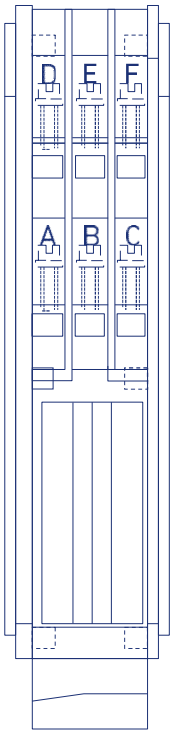


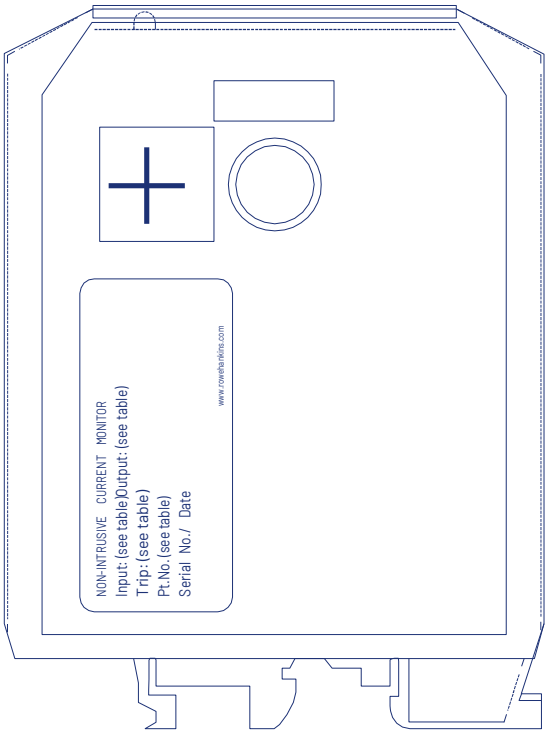
The current carrying conductor of the circuit that requires to be monitored is passed through the aperture of the NIC Unit, internally the conductor passes through a current transducer which provides a voltage proportional to the current being measured. The signal output is then passed through signal processing circuitry (amplification, full wave rectification and filtration) to then provide a 4-20mA current output proportional to the current range being measured.

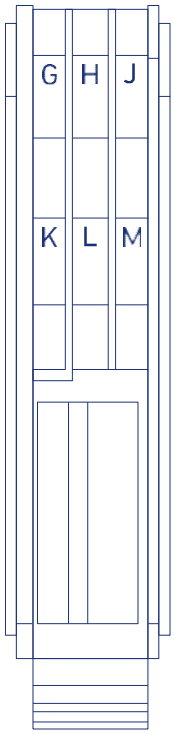
Innovate

Design

Deliver







Features & Benefits

- Intelligent infrastructure initiative for remote condition monitoring and proactive maintenance.
- Ability for equipment to be 'fixed before failure'.
- Enables significant reduction in manual routine inspections.
- Non-contact measurement of DC currents up to ±600mA.
- 4 to 20mA current output.
- Current trip with relay output.
- LED trip level indicator.
- 24V DC power supply.
- Reverse Supply Polarity protection.
- DIN rail mounting.
- Unipolar versions are also available.
- Network Rail approved.
- The product is RoHs and WEEE Compliant.

Primary Current Ipmax	Value	Units	Notes
	± 100	mA	Type 1
	± 200	mA	Type 2
	± 400	mA	Type 4
	± 600	mA	Type 6
	± 600	mA	Type 6a. This is a unipolar monitor.
Output Current			
at Ip=0	4	mA	
at Ip=IpMax	20	mA	
Low resistance max	500	ohms	
Trip Level (Optional)	5 to 90% of Ipmax	%	Factory set
Hysteresis	30	%	
Trip LED	Red		
Relay Output (Optional)			Only available if trip level set
Voltage	110V dc max	V	
Current	500 mA max	mA	Resistive load
Power Supply			
Volts	24V dc ±10%	V	
Current	< 100mA	mA	@20mA load
Power on LED	Green		
Frequency Response	DC to 40Hz DC to 5Hz (Type 6a)	Hz	3dB
Step response	50 ms typical	ms	To 90%
Accuracy	± 2	%	
Operating temperature	-20 to +85	°C	

Electrical Connections

Signal	Terminal	Notes
+24V	E	
0V	D	
Output O/P+	B	
Output O/P-	A	
Relay Output N/O1	F	Connections only available if unit has trip setting
Relay Output N/O2	C	
Primary Current	N/A	Cable passed through side hole

Mechanical Data

Case - DIN Rail	Value	Units	Notes
Width	22.5	mm	
Depth	60.5	mm	
Height	98	mm	
Primary cable hole diameter	11	mm	
Material	Polyamide		
Mass	110	g	Maximum