MTL5521 FREQUENCY TO CURRENT CONVERTER AND TRIP AMPLIFIER

CE

The MTL5521 converts a frequency or rotational speed signal from a proximity detector located in the hazardous area into a 0/4–20mA current signal suitable for driving safe area loads. A display located on the top indicates the frequency.

The analogue output provides either a 0–20mA or 4–20mA signal that is proportional to the rotational speed or frequency of the input. A relay output is provided, with two configurable set points, allowing monitoring of the input frequency. When the input frequency is within this window the relay is energised and a yellow LED is illuminated. A start-up delay is triggered by a NO contact allowing the system to start up without creating false alarms.

Configuration settings are made by two push button switches located on the front of the unit allowing the following parameters to be displayed and configured:

- Output current either 0–20mA or 4–20mA
- 0/4mA and 20mA frequency values
- Line fault detection: Off, wire-break and/or short circuit
- Upper and lower threshold values of the set point relay (including hysteresis)
- Start uptime delay 0 to 1000s
- Filter time constant
- Scaling factors

A line fault detect facility detects open and/or short circuits in the field. When a fault is detected the relay de-energises and the yellow LED changes to red.

SPECIFICATION

Number of channels
One, with a configurable alarm

Location of delay switch
Zone 0, IIC, T6 hazardous area
Div. 1, Group A hazardous location

Location of proximity detector
Zone 0, IIC, T4–6 hazardous area if suitably certified
Div. 1, Group A hazardous location

Hazardous-area input (Rotation sensor)

Frequency input	0 to 10kHz
Pulse width	20µs
Start-up delay	0 to 1000s (adjustable)
Input circuits	Input conforms to NAMUR/DIN 19234

Voltage applied to sensor
8.2V from 1kΩ

Input characteristics

Switching threshold	1.55mA
Open-circuit threshold	<0.1mA
Short-circuit threshold	>6mA

Safe-area output

Signal range	0/4 to 20mA
Safe-area load resistance	0 to 500Ω
Filter time constant	0 to 60s in 80ms increments

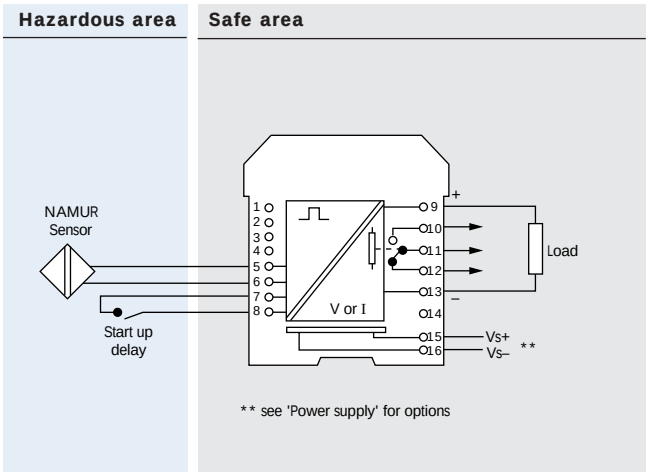
Relay type
Single-pole changeover relay

Relay characteristics

Switching voltage	<250V ac/120V dc
Switching current	<2A
Switching capacity	<500VA/60W

LED indicators

Green	Power
Yellow K1	Set point relay status
Yellow (Red)	Pulse indication (fault)



Terminal	Function
5	Namur Sensor +ve
6	Namur Sensor –ve
7	Start up delay +ve
8	Start up delay –ve
9	0/4–20mA output +ve
10	Speed Monitor
11	Speed Monitor
12	Speed Monitor
13	0/4–20mA output –ve
15	Supply +ve
16	Supply –ve

Power supply

230V ac nominal, 184–264V ac, 48–62Hz	**(MTL5521-11-230)**
115V ac nominal, 98–126V ac, 48–62Hz	**(MTL5521-11-115)**
24V dc nominal, 19–29V dc, <10% ripple	**(MTL5521-11-24)**

Power consumption
<5VA/5W

Isolation
250V rms between input, output and power supply terminals, tested at 2.5kV rms between safe and hazardous terminals

Terminals
Each terminal will accommodate 2x2.5mm^2 conductors

Mounting
On 35mm (top hat) rail

Location of units
Safe area

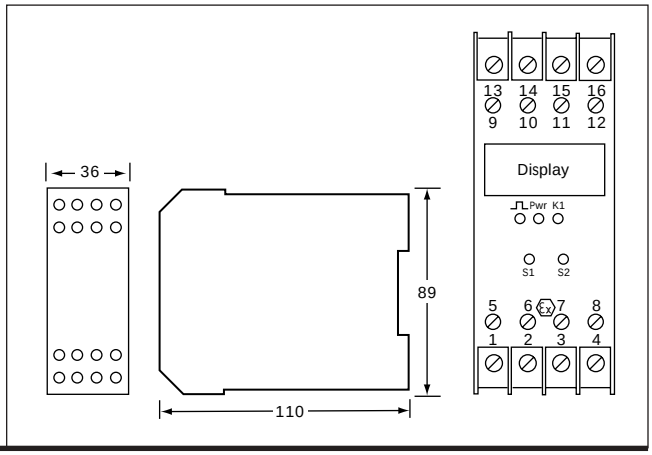
Ambient temperature limits
Operating temperature –20°C to +60°C

Dimensions

Height (above rail)	105mm
Width	89mm
Rail length required	36mm

Safety description
13V, 30mA (terminals 5–8)
U_m = 250V ac

DIMENSIONS (mm)



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June 2004