Current/Voltage-to-Frequency Converter
MS38-T

- Conversion of a current or voltage signal into a frequency
- Digitally adjustable frequency in a range of 0...166.66 Hz
- Defined pulse duty factor
- Optional wire-break monitoring of the analogue input

The voltage or current-to-frequency converter, type MS38-T, generates a frequency, which is proportional to the input signal, with a defined pulse duty factor. The converter is equipped with two short-circuit protected and isolated outputs for connection of control and processing devices. Analogue voltage signals of 0/2...10 V or current circuits of 0/4...20 mA may be connected to the input circuit.

The time base for the output frequency is selectable, i.e. „pulses per hour“ (without jumper between terminals 13/14) or „pulse per minute“ (with jumper between terminals 13/14). The adjusted time base is extendable (by factor 1, 10, 100).

The window range for the frequency range is defined by an adjustable end and start value.

The end value of the frequency range is adjusted by the two rotary switches ( ). The start value is adjusted by the two rotary switches ( ). The start value can be divided by factor 10 by linking terminals 12/13.

Linking terminals 15/16 converts the input circuit from 0...20 mA to 4...20 mA, or from 0...10 V to 2...10 V. Live-zero operation activates input circuit monitoring for wire-break. If the input signal drops below 4 mA/2 V, the preset minimum frequency is signalled.

If the input signal exceeds 20 mA or 10 V, the actual frequency is indicated, irrespective of the preset range.
## Current/Voltage-to-Frequency Converters

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### Supply Voltage $U_\text{B}$
- **Line frequency/ripple** $W_{\text{PP}}$ $\leq 10\ %$
- **Power/current consumption** $\leq 2.5\ W$

### Input Circuits
- **Current input**
  - **Input resistance** $50\ \Omega$
  - **Operating characteristics** $0/4...20\ mA$ (max. $50\ mA$)
- **Voltage input**
  - **Input resistance** $50\ k\Omega$
  - **Operating characteristics** $0/2...10\ V$

### Transfer Characteristics
- **Ambient temperature sensitivity** $\leq 0.005\ %/K$ of final value
- **Wire-break threshold** $\leq 2\ mA / 1\ V$

### Output Circuits
- **2 potential-free transistor outputs**, operated parallel
  - **Switching voltage** $\leq 30\ VDC$
  - **Switching current** $\leq 100\ mA$
  - **Frequency range** $0...10.000\ min^{-1} / 0...166.66\ Hz$
  - **Defined pulse duty factor** $f \geq 1\ Hz$: $50\ %$
  - $f < 1\ Hz$: switch-on time limited to $0.5\ s$

### LED Indications
- **Power "ON"** (dual colour LED)
  - **Power "ON"**: green – wire-break: red
  - **Switching status** yellow

### Housing
- **50 mm wide, Polycarbonate/ABS**
- **Mounting** panel mounting or snap-on clamps for top-hat rail (DIN 50022)
- **Connection** $2 \times 8$ self-lifting pressure plates
- **Connection profile** $\leq 2 \times 2.5\ mm^2$ or $2 \times 1.5\ mm^2$ with wire sleeves
- **Degree of protection** (IEC 60529/EN 60529) IP20
- **Operating temperature** $-25...+60\ ^\circ C$