Frequency to Current Converter (Microprocessor Based)

WE M/Ex-FSU

The input pulses entering the frequency to current converter are shaped to a particular amplitude and then integrated. The resultant voltage is directly proportional to the input frequency. A converter changes this voltage into a pre-determined direct current and this analouge output can be read as a 4-20mA signal proportional to 0-100% value of input frequency (Speed of a motor).

FEATURES:

- Manufactured according to European standard EN 50014 and EN 50020.
- Intrinsically Safe circuit is galvanically isolated from both main input and output control circuitry-1500V, 50Hz.
- Suitable for connection to 2 wire Proximity Switches of NAMUR type.
- Wide input frequency range from 0.001Hz. upto 999Hz.
- Field programmble to match 0-20mA or 4-20mA corresponding to different input frequencies (i.e., to match different speeds of motors).

METHOD OF ACTUATION

- N-type Proximity Switches.
- Contact closure.
- Passive Switched Transistors.

APPLICATION:

As converter for digital frequency signals to analog current signals, speed indicators, flow rate indicator, display driver.

INPUT FREQUENCY CALIBRATION IN HERTZ

--It can be done by four thumbwheel switches, which display the actual value in numbers. First three thunbwheel switches set the frequency. Switch IV sets the multiplier and the number itself shows the negative exponent Fifth switch adjust time lag between input signal and output to match process parameters.

ORDERING INFO:

ART. NO. WAA 008A (110V AC) WAA 008B (220V AC)

Technical Details Power Supply

Supply Voltage 110V / 220 AC, -10% + 15%,

45-65Hz

Current Consumption approx. 3,5VA

Hazardous Area Section

Inputs (Intrinsically Safe)

Nominal data as per DIN 19234 equipment with suffix NAMUR

Open circuit voltage approx. 8 V.DC short circuit current approx. 8 mA

Switching point / Hysteresis 1.2 mA...2.1 mA / ≈ 0.2 mA

Lead breakage monitoring J < 150uA **Parameters**

Permissible Capacitance ≤ 415nF Permissible Inductance

Safe Area Section

Output

Analog Output Current 0-20mA or 4-20mA (Programable)

<2mH

Analog Output Load 0-1000 Ohm

Pulse Output $U \le 30V DC \& I \le 10mA$ (Short circuit proof current limited to 10mA)

Analog Output Voltage 0-200 mV DC ≤ 1.5 KHz Input Frequency Operating Range 0.001 to 999 Hz

Temperature Drift ≤0.1% Calibration Error ≤ 1% Linearity Error ≤ 1% **Ambient Temperature** Max. 55°C

Housing Material NORYL SE O (Self Extinguishing) The unit can be a clipped onto 35mm rail as per DIN 46277.

CMRS for Intrinsic Safety Ex ia IIC conforming to IS-5780-1980.







