

Models Available

EF12U Self Powered Uni-polar Output

EF12B Self Powered Bi-Polar Output

Product Features

- Isolated DC mA or DC voltage output
- Accurate to $\pm 0.1\%$ of centre frequency
- Adjustable 'span' and 'zero'
- DIN rail mounting enclosure
- 4kV rms 50Hz 1 minute test isolation between input / output / case / (auxiliary)
- Screw type terminals
- Fingerproof terminal cover included

Frequency Transducers

Frequency transducers measure frequency either directly or through a voltage transformer. The transducer converts the AC frequency signal to either a DC mA or DC voltage output which is directly proportional to the input signal value.

The output is directly proportional to the frequency deviation around a specified nominal frequency. All frequency transducers are self powered.

The 4kV isolated output signals can then be fed to remote counters, data loggers, PLC's or building management systems.

For converting frequency to a proportional DC mA or DC voltage output

Specification

Reference Standard:

- IEC 688, BS 6253, VDE/VDI 2191

Accuracy:

- $\pm 0.1\%$ of centre frequency

Input Voltage, U_n :

- 50V to 550V direct connected
- or VT operated

Overload:

- $1.2 \times U_n$ continuous
- $1.5 \times U_n$ for 1 second

Working Range:

- $80 - 120\% U_n$

Centre Frequency, F_n :

- 44 to 65Hz
- 400Hz

Frequency Deviation:

- $\pm 1, 2, 3, 5$ Hz (centre 44 to 65Hz)
- $\pm 10, 20, 30, 40$ Hz (centre 400Hz)

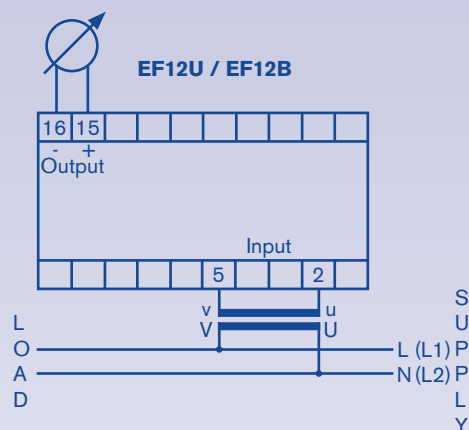
Burden:

- Voltage circuit $< 3VA$

Weight:

- EF12U, EF12B 600g

Connections



Ordering information

Model	Code	Description
	EF12U	Self Powered - Uni-Polar Output
	EF12B	Self Powered - Bi-Polar Output

Input Voltage	Code	Description
	P1	110Vac
	P2	230Vac
	P3	415Vac
	PX	50 to 550Vac (specify)

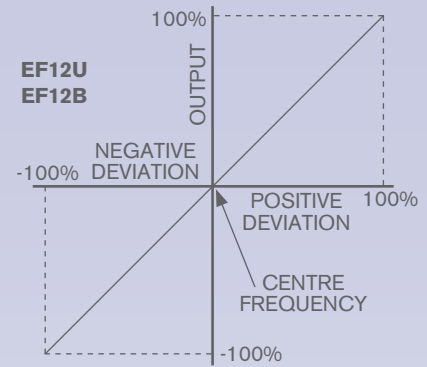
Output	Code	Description
		EF12U EF12B
	X1	0-1mA ±1mA
	X2.5	0-2.5mA ±2.5mA
	X5	0-5mA ±5mA
	X10	0-10mA ±10mA
	X10B	N/A 0-5-10mA
	X20	0-20mA ±20mA
	XA	4-20mA N/A
	XB	N/A 4-12-20mA
	XV	Voltage ±Voltage (specify up to 15Vdc)

Centre Frequency	Code	Description
	F50	50Hz
	F60	60Hz
	F400	400Hz
	FX	44 to 65Hz (specify)

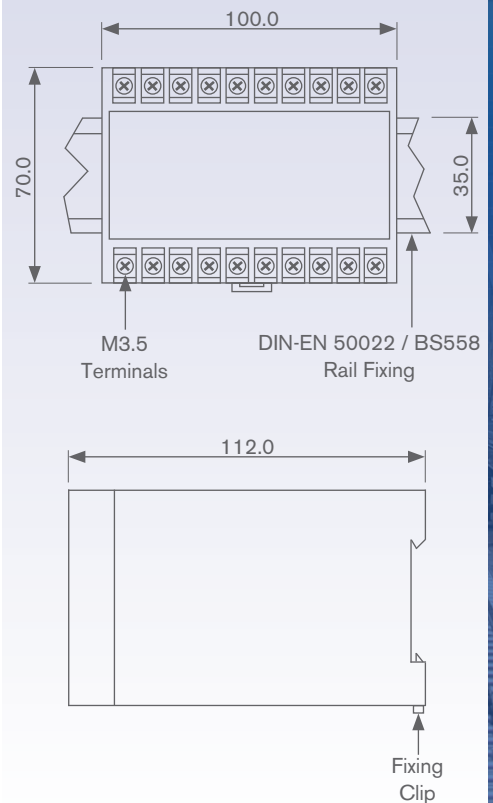
Frequency Deviation	Code	Description
	D1	±1Hz
	D2	±2Hz
	D3	±3Hz
	D5	±5Hz
	DX	±1 to ±8Hz (specify)
	DX	±10 to ±40Hz (F400 - specify)

Example EF12U - P1- XA - F50 - D5

Function Graph



Dimensions



All dimensions in mm

General Specification

Output

Response Time:	< 400ms for 0-90% of input value
Warm Up Time:	< 15 minutes
Residual Output Ripple:	< 1% peak full scale
Long Term Drift:	±0.25% per year non-cumulative
Maximum Load:	1mA < 10kohm 2.5mA < 6kohm 5mA < 3kohm 10mA < 1.5kohm 20mA < 750ohm Voltage output >1kohm

Self powered voltage and current transducers have an adjustable span while all other units have an adjustable zero and span accessible from the front panel.

Auxiliary

AC:	110 / 230 / 415V (±20%) (others upon request)
DC:	24 / 48 / 110V (±20%)

Environmental

Operating Temperature:	-20°C to 65°C
Storage Temperature:	-40°C to 75°C
Variation With Temperature:	0.03%/°C (±0.5% maximum)
Relative Humidity:	0 - 95% non-condensing

Burden

Input Circuits:	See individual specifications
Auxiliary Power Supply:	7VA combined Watt/Var transducers (4VA all other transducers)

EMC Compliance

Directive 89/336/EEC:	Electrostatic discharge IEC801.2 (8kV) Electromagnetic fields IEC801.3 level 3 Fast transient bursts IEC801.4 level 4 Surge withstand IEC255-5
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Enclosure

Enclosure:	Grey ABS plastic with finger proof terminal covers
Enclosure Code:	Case IP50, terminals IP10 to IEC529 and BS5490
Test Isolation:	4kV rms 50Hz 1min (to IEC 414) between input / output / case / AC auxiliary (2kV rms 50Hz 1 min for EK energy transducers) 1kVdc / 600Vac between Watt & Var outputs (EPQ units)
Continuous Operation Isolation:	800V rms 50Hz / 1kVdc between input / output / case / AC auxiliary 150Vdc output / DC auxiliary
Mounting:	35mm DIN rail (DIN-EN 50022)
Markings:	CE marked

Specification subject to change without notice.

Options

Non Standard Calibration

All transducers are supplied calibrated to standard input values as detailed in the individual specifications, however non-standard calibration input values can be specified (subject to technical viability).

Wide Output Adjust Switch on Power Transducers

All power transducers are available with a ten position switch accessible from the front panel which provides coarse adjustment of the output signal between 50% and 200% of the nominal.

Calibration Certificate

Calibration certificates traceable to national standards can be supplied on all transducers.

Conformal Coating

A conformal coating can be applied to the transducer circuitry during manufacture for transducers that will be operating in harsh environmental conditions.