6000

SYSTEM

EUROTHERM
PROCESS
AUTOMATION

15   16
+   −
OUTPUT

~
=
E1-FREQ

L
N

AUX SUPPLY
~   ~
2   5   13   14

Eclipse series

AC frequency

transducers

Product

Specification

ECLIPSE SERIES AC FREQUENCY TRANSDUCER

- **Fully isolated and CE compliant**

- **High accuracy Class 0.01Fn**

- **Many non-standard options**

- **Current and voltage output options**

- **DIN rail mounting**
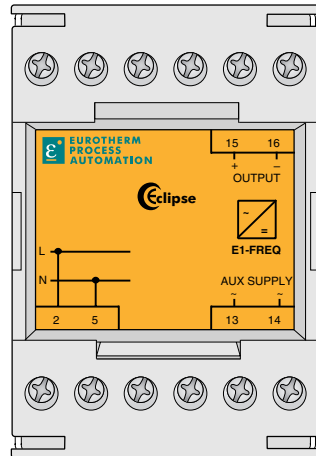
INTRODUCTION

Exceptional accuracy and stability has been achieved by using the latest technology in converter integrated circuits, dc amplifiers and reference circuits. Immunity to spikes and waveform distortion is very high. The output can be used to drive meters, digital instruments, computer inputs or process control systems.

FUNCTIONAL DESCRIPTION

The measured input is isolated via internal transformers, filtered, squared-up and offered to a precision frequency-to-current converter.

The current is then amplified and compared to an accurate reference. A symmetrical dc amplifier system then converts the resultant signal into the required current or voltage output.
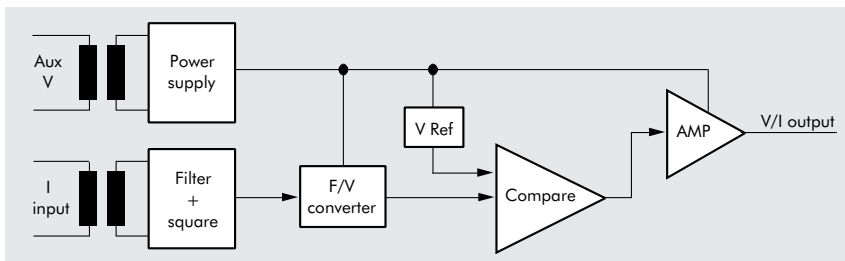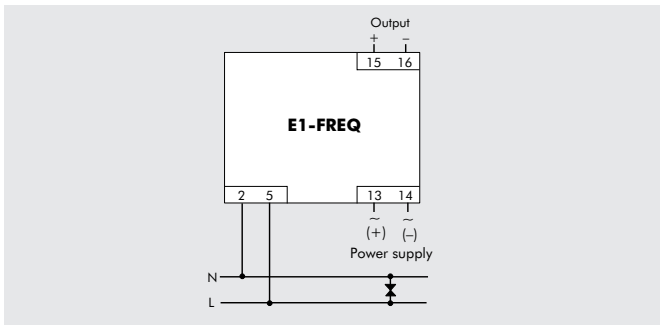
Frequency transducer

STANDARDS

BS EN 60688:1992	Designed to comply with Electrical measuring transducers for converting ac electrical quantities to analogue or digital signals.
IEC414:1979	Safety, high voltage insulation
IEC521:1988	Impulse voltage 5kV waveform 1,2/50uS
IEC255-21-1/3	High frequency disturbance 2.5kV common, 1kV series mode
EN50081-2	Emissions:– Industrial
EN50082-2	Immunity:– Industrial

CONNECTION AND INSTALLATION

Frequency transducer

WARNING: The voltage inputs may be direct or VT connected and for safety reasons one side of the VT secondary should be earthed. We recommend that the Voltage inputs and power supply should be fused.

It is recommended that the transducer is housed in an enclosure (e.g. Control Panel) that does NOT allow unauthorised access as high voltages can be present on the terminals.

SPECIFICATIONS

Inputs

Frequency ranges:	45-55Hz, 45-65Hz
Voltage:	110V, 220V, 230V, 240V, 380V, 400V, 415V
Voltage burden:	1.2VA
Power supply burden:	1.8VA

Outputs

Outputs	0-1mA into 10kΩ max
	0-10mA into 1kΩ max
	0-20mA into 500Ω max
	4-20mA into 500Ω max
	0-10V into 2kΩ min
Accuracy:	Class 0.01Fn
Isolation test:	2kV for 1 minute

Drive capability

|	
Current outputs:	20mA
Voltage outputs:	10V

General specifications

Temperature range:	–10 to +60°C
Temperature drift:	0.03%/°C
Ripple:	<1% peak-to-peak
Stability:	±0.05% per annum non-accumulative
Auxiliary supply:	110, 240V ±20% , 415V +15% -20%
Response:	0 to 80% in 300mS
Storage temperature:	–40 to 70°C
Humidity:	Up to 90% non-condensing

Mechanical

Weight:	390gm approx
Dimensions:	55W × 70H × 114D mm
Housing:	Moulded grey ABS plastic case self extinguishing to VDE0304 Degree 1, with moulded polycarbonate terminal assembly. The case is snap mounting on top-hat rail DIN 4677-3 (CENELEC EN 50-022)

HOUSING DETAILS

E1-FREQ

DIN Rail
DIN 46277-3

70

55

114
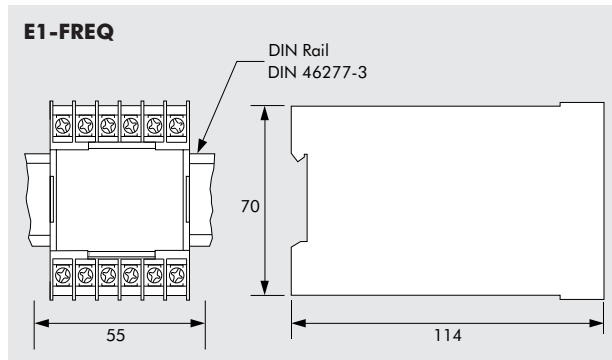
ORDERING INFORMATION

AC frequency transducer

Base unit	Input range	Input voltage	O/P range & units	Auxiliary supply	Options
E1-FREQ	45-55Hz	230V	0-1mA	230V	4kV isolation tested

Example

Base unit	Code
AC frequency transducer	E1-FREQ

Input range	
45-55Hz	45-55Hz
45-65Hz	45-65Hz
Other 35Hz-10kHz	Specify

Input voltage	
110V	110V
220V	220V
230V	230V
240V	240V
380V	380V
400V	400V
415V	415V
Other 10V-415V	Please specify

Output range and units	Code
0-1mA	0-1mA
0-10mA	0-10mA
0-20mA	0-20mA
4-20mA	4-20mA
0-10V	0-10V

Auxiliary supply	
110V ±20%	110V
230V ±20%	230V
400V ±20%	400V
24V dc	24V

Options	
4kV isolation tested	

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