

DC LINEAR INTEGRATOR



TECHNICAL SPECIFICATION

INPUT

Rated value In	0-1 / 5 / 10 / 20 & 4-20 mA
Voltage drop	20mV
Rated value Un	0-20mV.....10V
Impedance	100 kOhm / V
Working range	0-125%
Overload continuous	1.5 x Un 4 x In

OUTPUT

Contact	volt free closure
Pulse rate	100.....5000 pulse/hr
Pulse width	250 msec

RELAY

Voltage	50 V DC / 250 V AC
Rating	10W
Contact material	Ruthonium
Initial resistance	200 mOhm
Initial capacitance	0.4 pF
Electrical life	5 x 10 ⁶ (250 V DC / 10mA / resistance load)
Test voltage	coil to contacts 4kV

ADJUSTMENT

Zero	± 2%
Span	± 10%

AUXILIARY

A.C. Voltage	115 / 230 / 400 V (± 25% / 45-65Hz / <2 VA)
D.C. Voltage	24 / 48 / 110 V ± 20% galvanically isolated / < 3 W

WEIGHT & CASE SIZE Approx. 0.4 kg. 55mm case

SELECTION GUIDE

M100-DI1	Single relay output
M100-DI2	Double relay output

TYPICAL APPLICATIONS

The M100-DI1 is a linear integrator which accepts D.C. Inputs, and integrates the input with respect to time. An output is provided via a relay which gives a pulsed output, the frequency of which is directly proportional to the amplitude of the input signal.

One of the main uses of the M100-DI1 is the measurement of Watt and Kilowatt hour. This is achieved by feeding the output of a watt transducer (M100-WA series) into the M100-DI1. The input signal is integrated against time and the resulting output pulses from the relay are proportional to the kW.h being consumed. These pulses then can be fed to an electromechanical counter, digital counter or a computer, where the kW.h consumed can be stored. Another use is the measurement of Ampere hours.

The M100-DI2 is the same as M100-DI1 with the additional feature of having 2 relay outputs, this allows the user to feed one set of pulses to a counter on a switchboard whilst feeding the other set of pulses to a remote computer in a control room.

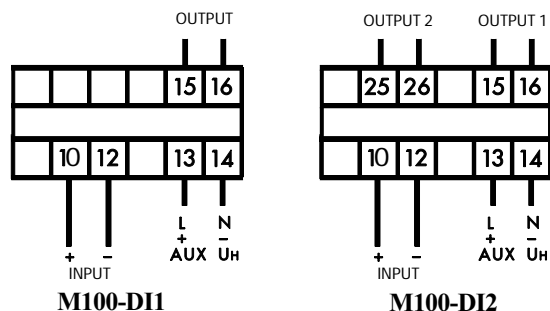
ORDERING INFORMATION

Product Code	Input In	Pulse Rate	Aux. Freq. Opt.
M100-DI1	10mA	100/hour	230V 50Hz

OPTIONS

1. Non standard inputs / outputs only as far as technically acceptable.
2. A.C. Auxiliary in range 57.7 to 450 volts
3. Calibration at temperature other than 23°C

CONNECTION DIAGRAMS



Panel Components & Systems

GENERAL SPECIFICATIONS

ENVIRONMENTAL

Working temperature	0 to +60 deg C
Functional temperature	-25 to +70 deg C
Storage temperature	-55 to +85 deg C
Temperature coefficient	0.02% per deg C (100 ppm / °C)
Relative humidity	95% non condensing
Class of climate	HSE complying with DIN 40040 -3 complying with VDE/VDI 3540

INSULATION

Test voltage	4kV RMS 50Hz 1min. between Input / Case / Auxiliary / Output
Impulse test	EMC 5kV transient complying with IEC 801 / EN55020
HF interference test	EHF 2.5kV 1MHz complying with IEC 255-4
Protection class	II complying with IEC 348 BS 4753 / DIN 57411 / VDE 0411

APPLIED STANDARDS

General	IEC 688 / BS 6253 / VDE/ VDI 2192
Safety	BS EN61010 DIN 57411 / VDE 0411 ANSI C37
Surge withstand	IEC 801 / EN 55020 ANSI C37-90a
Radio screening	RFI degree N complies with VDE 0875
EMC	Emissions EN50081-2 Immunity EN50082-1

ACCURACY

Class	±0.2 % complying with IEC 688
Calibration temperature	23°C
Temperature coefficient	0.01% / °C (100 ppm / °C)
Stability	0.05 % per annum non cumulative
Warm up time	<15 min

OUTPUT

Rated value	See individual product pages	
Load resistance mA	1mA	<15 kOhm
(Unless otherwise stated)	5mA	<3 kOhm
	10mA	<1.5 kOhm
	20mA	< 0.75kOhm
	4-20mA	< 0.75kOhm
Load resistance volts	1, 5 & 10 volts	>1 kOhm
(M100-VA1,VA3 only)	1, 5 & 10 volts	> 50kOhm
Load influence	<0.1 %	
Ripple	<0.5% peak-peak at full load	
Response time	<200 msec for 0-99 % at full load	
Overload	<2 x rated value at full load	
No load voltage	<27 V	

ENCLOSURE

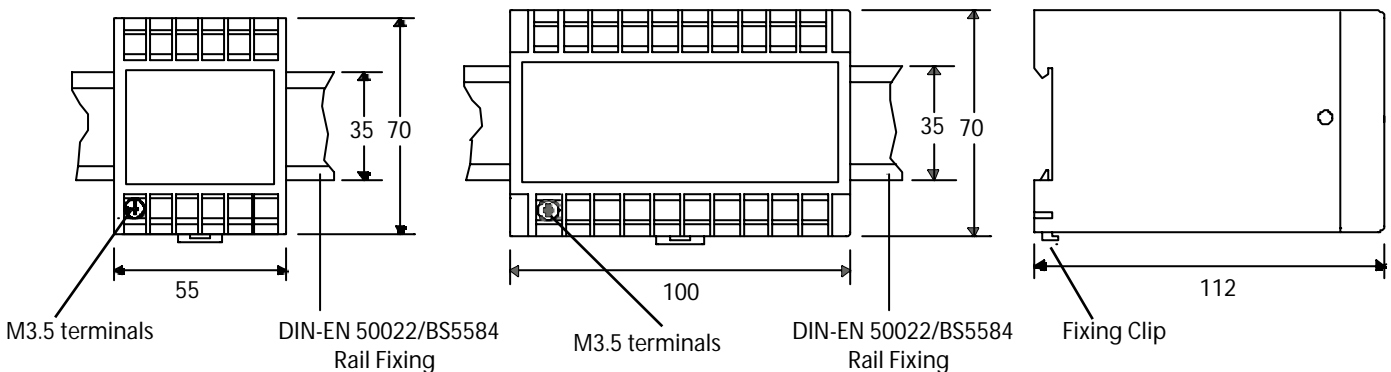
Fixing	Snap on to DIN rail 35 x 7.5 mm complies with DIN-EN 50022 BS 5584
Mounting	Any position
Enclosure Code	Case IP 50 / terminals IP 30 Complies with IEC 529 BS 5490 DIN 40050

APPROVALS

cU.L. Approval	File No E157034
----------------	-----------------

CASE DIMENSIONS

All Dimensions in mm



Panel Components & Systems

