

EGR

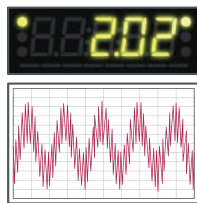
Earth Leakage | Ground Fault Protection Relay

Digital Ground Fault Relay

EcoEtruxure™
Innovation At Every Level

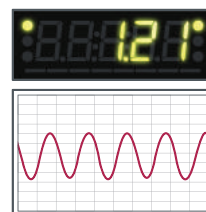
Noise Filtering

Communication



Noise Filter OFF

FILTER



Noise Filter ON

Schneider
Electric

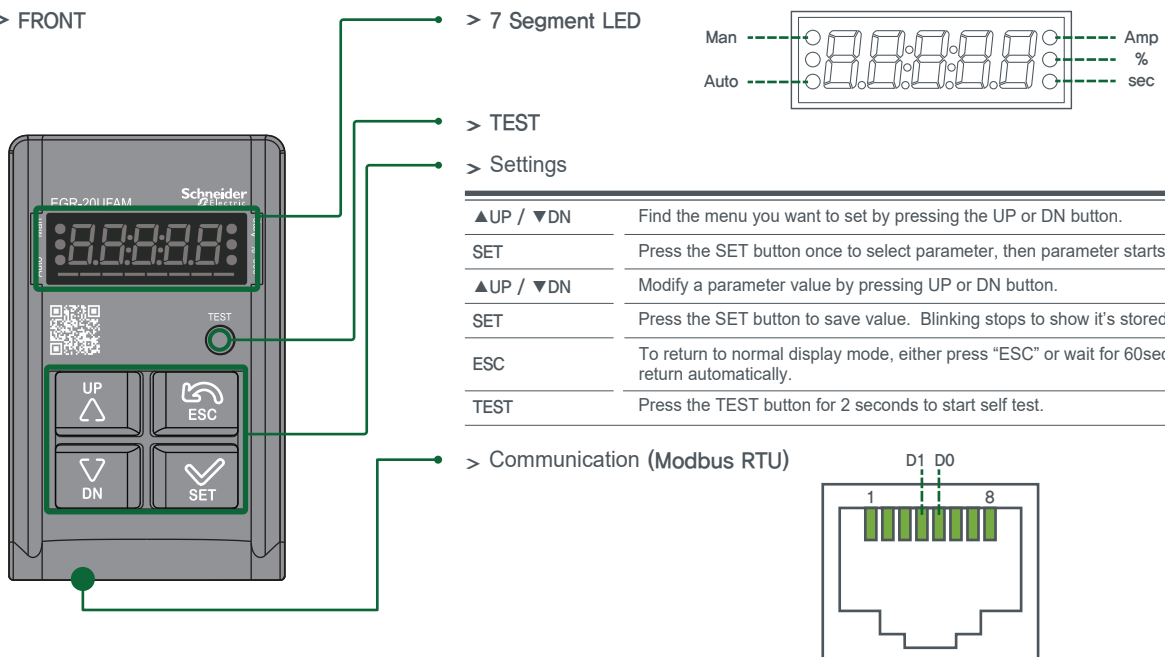


Function and features

- Leakage, Ground Current Measurement and Protection
- Digital Display (Leakage current measurement, set value)
- Current type (mA), Voltage type (mV), ZCT (zero-phase current transformer) available
- Wide Setting Range (0.03 ~ 20A)
- Instantaneous operation protection (30mA, 30msec)
- Save fault history:
 - Save operation history (5 times)
 - Possible to analyse incident time (RTC built-in)
- Installation compatibility with existing products:
 - 8-pin socket and flush mounted mounting
- IP52 rating: When protective cover is installed
- Communication support (Modbus-RTU)
- Noise filter function:
 - Harmonics reactive component filtering, due to inverter, UPS, DC power converter, etc.
 - Suitable for a noisy environment

Display

> FRONT



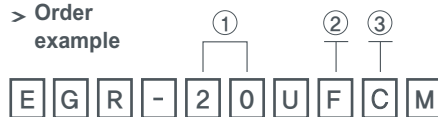
Specifications

Function and characteristic		Rated specification
Detection current range	Current type	0.03~20A (ZCT rating 200mA/1.5mA)
	Voltage type	0.1~10A (ZCT rating 200mA/100mV)
Time setting	Ground fault trip time	0.03, 0.05, 0.1 ~ 10sec
	Ground fault delay time	0 ~ 30sec
Power supply	Rated voltage	100 ~ 240Vac/dc (operating voltage 85 ~ 264Vac/dc)
	Frequency	50/60Hz
Output relay	Form	1-SPDT(1c)
	Rating	3A / 250Vac (Resistive load)
Tolerance	Electric current	0.1 A or less ± 0.02 A, 0.1 A or more ± 1% (± 1% f.s)
	Time	±3% or 0.02s
Reset Method		Manual reset
		Auto reset
Environment	Temperature - Operation	-20~60°C
	Storage	-40~80°C
	Humidity	30~85% Rh (without condensation)
Insulation Resistance	Between case & circuits	DC 500V, 10MΩ or more
	Between case & circuits	2kV, 50/60Hz, 1min
Dielectric strength	Between contacts	1kV, 50/60Hz, 1min
	Between circuits	1.5kV, 50/60Hz, 1min
Electrostatic Discharge (ESD)	IEC61000-4-2	Level 3: Air Discharge: ±8kV, Contact Discharge: ±6kV
Radiated Electromagnetic Field Disturbance	IEC61000-4-3	Level 3: 10V/m, 80~1000MHz
EFT / Burst	IEC61000-4-4	Level 3: ±2kV, 1min
Surge	IEC61000-4-5	Level 3: 1.2×50μs, ±4kV
Conducted Electromagnetic Field Disturbance	IEC61000-4-6	Level 3: 10V, 0.15~80MHz
Emission	CISPR11	Class A (conducted and radiated)
IP rating		IP 52 (when protective cover is installed)
Mounting method		8-pin Socket or Flush Panel Mounted

How to order

Reference	Current range	Operating voltage	ZCT type	Comments
EGR-20UFCM	0.03 ~ 20	100 ~ 240Vac/dc	200mA/1.5mA or 200mA/100mV	Flush Panel Mount, MODBUS-RTU
EGR-20USAM	0.03 ~ 20	100 ~ 240Vac/dc	200mA/1.5mA	Socket type, MODBUS-RTU
EGR-10USVM	0.1 ~ 10	100 ~ 240Vac/dc	200mA/100mV	Socket type, MODBUS-RTU

> Order example



No	Item	Type	Scope of protection
①	Current setting	20	0.03 ... 20A
		10	0.1 ... 10A
②	Mounting	F	Flush panel mount (recessed)
		S	Socket type
③	ZCT (Zero-Phase CT)	C	Voltage/Current type
		A	Current type
		V	Voltage type

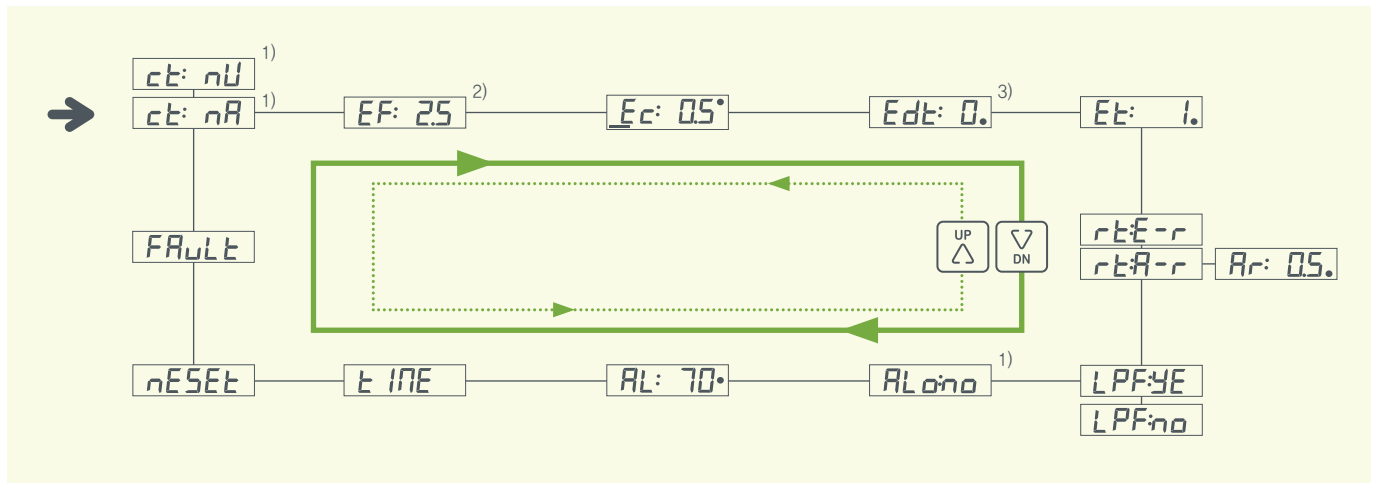
> Recommended ZCT
Refer EIC

> Recommended socket
(8-pin)



Model 8PFA or KH-TDR-R8

Setting Sequence



* Press the UP / DN button to select the mode to set

- 1) Socket type not shown
- 2) Voltage type not shown
- 3) Visible only when Mot: yE is selected in Hidden Menu

Setting Menu

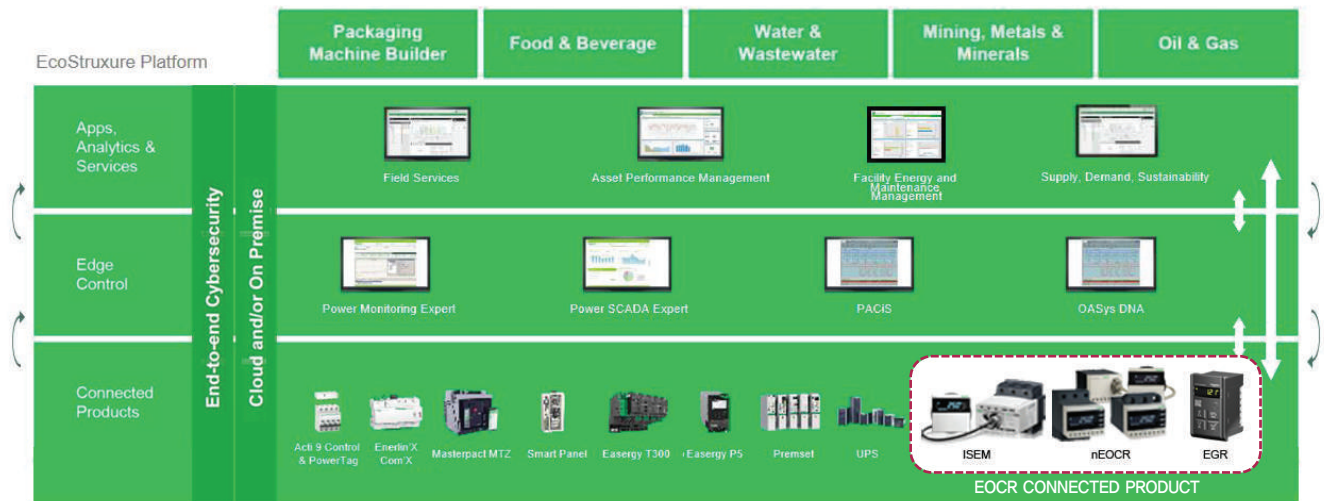
Order	Setting item	MODE	Description	Setting range	Initial value
1	ZCT	ct: nV ¹⁾ ct: nA ¹⁾	Current detection sensor (ZCT) type selection mode Choice of voltage type mV (CT: nV) or current type mA (CT: nA)	nV, nA	nA
2	Ground fault current range	EF: 25 ²⁾	Select the value according to the operating current setting range: EF: 2.5 → 0.03 ~ 2.5A EF: 20 → 1 ~ 20A	2.5, 20	2.5
3	Ground fault threshold	Ec: 05°	Mode to set operating current value. Set ground fault current means ZCT primary current.	2.5 : off, 0.03~2.5A 20 : off, 1~20A ct: nV : off, 0.1~10A	0.5 20 10
4	Ground fault start delay	Edt: 0. ³⁾	Mode to set operation delay time. Applies to the load of the motor. Set time according to startup characteristics.	0~30s	0
5	Operating time	Et: 1.	Mode to set the ground fault operating time. Set the desired operating time at the current over EC setting value.	0.03, 0.05, 0.1~10s	1
6	Reset	rtE-r	Manual Reset Reset by ESC button or power off	E-r, A-r	E-r
		rtA-r	Auto-Reset A trip recovery after the time A-r passes		
	Auto reset timer	Ar: 05.	Mode to set the auto reset time. Time to return contact after operation (rt: A-r)	0.5s~20n	5s
7	Noise filter	LPF:yE LPF:no	LPF:yE Filtered current value measurement LPF:no Unfiltered current value measurement	yE, no	yE
8	Alert output setting	ALo: F ¹⁾	Flickering(ALo: F) - Output contact (07/08) will open and close repeatedly when the detected current exceeds the Alert setting (%)	F, H, no	no
		ALo: H ¹⁾	Holding(ALo: H) - If the detected current exceeds the Alert setting, the output contact (07/08) is closed. If it is less, then the contact is open.		
		ALo:no ¹⁾	No(ALo:no) - Alert output is not used when selected		
9	Alert setting	AL: 70°	Mode to set alarm output value. It is set as a percentage of the EC setting value. 07/08 contact is activated. * Shown only when Alo: F or Alo: H is selected.	70~100%	70

10	Time setting		Set current time		
		 	Set year, month, day, hour, minute, second		
11	Network settings		Communication setting mode		
			Modbus slave address setting.	1~247	1
		 	Set Baudrate (bps) - Select 9.6kbps or 19.2kbps or 38.4kbps. Set Parity - Non, Evn, odd can be selected or changed and stop bit becomes 1.	96, 192, 384 Non, Evn, odd	192 Evn
12	Fault history		Up to 5 recent fault histories are saved. The first LED on the right side of the bar graph is the recent fault and the LEDs are divided into numbers in the order of LED lighting. Display the time information of the fault occurrence in the order of year, month, day, hour, minute, and second.		

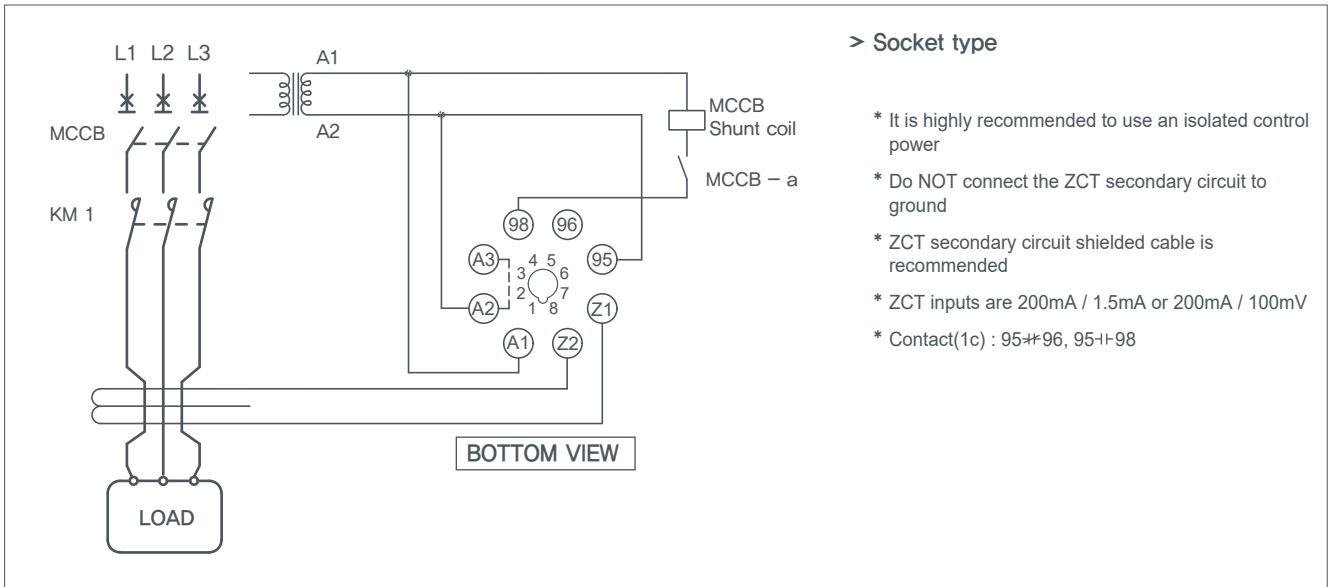
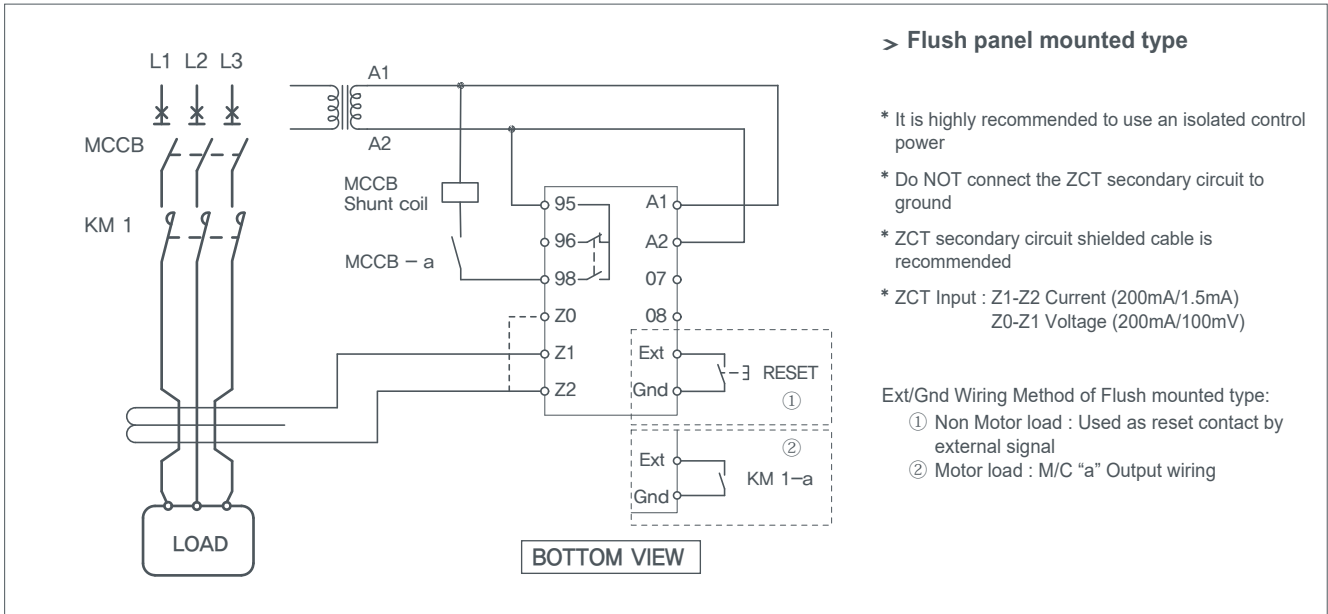
Hidden Menu

If you press the ESC and SET buttons simultaneously for more than 3 seconds, the Hidden Menu appears and the following items are displayed.

Order	Setting item	MODE	Description	Setting Range	Initial value
1	Version Information		Display firmware version and reference code		
2	Time-current characteristic		Time-current characteristic . Select dE or no Tcc:dE - Definite time type Tcc:no - None, Only measure the ground current	dE, no	dE
3	Calibration		Calibration function Calibration by percentage (Current X 70~130% = Set current)	70~130%	100
4	Frequency		Select 50 or 60Hz	50Hz, 60Hz	60
5	Motor Load		Mot:no - Non Motor Mot:yE - Motor Load * Enable Edt function when set in Mot: yE	no, yE	no
6	Factory reset		Factory reset mode Initialize each function setting to factory default (except time setting)	no, yE	no

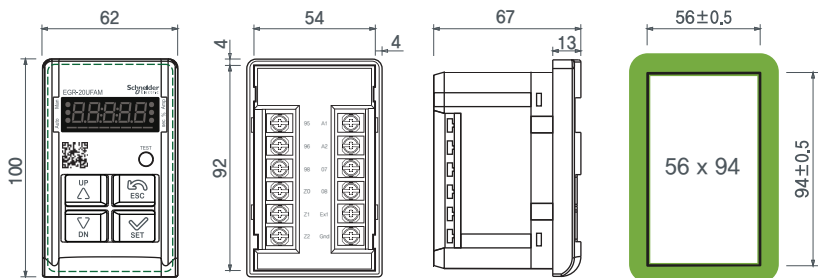


Wiring Diagram



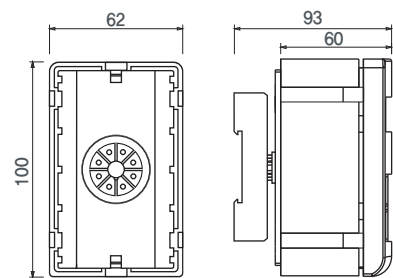
Dimensional drawing

Flush mounted type (EGR-20UFCM)



> Panel cutting size

Socket type (EGR-20USAM / EGR-10USVM)



A1	A2	07	08	Ext	GND	Z2	Z1	Z0	98	96	95
1	2	3	4	5	6	7	8	9	10	11	12

A1	A2	A3	98	96	95	Z1	Z2
1	2	3	4	5	6	7	8