

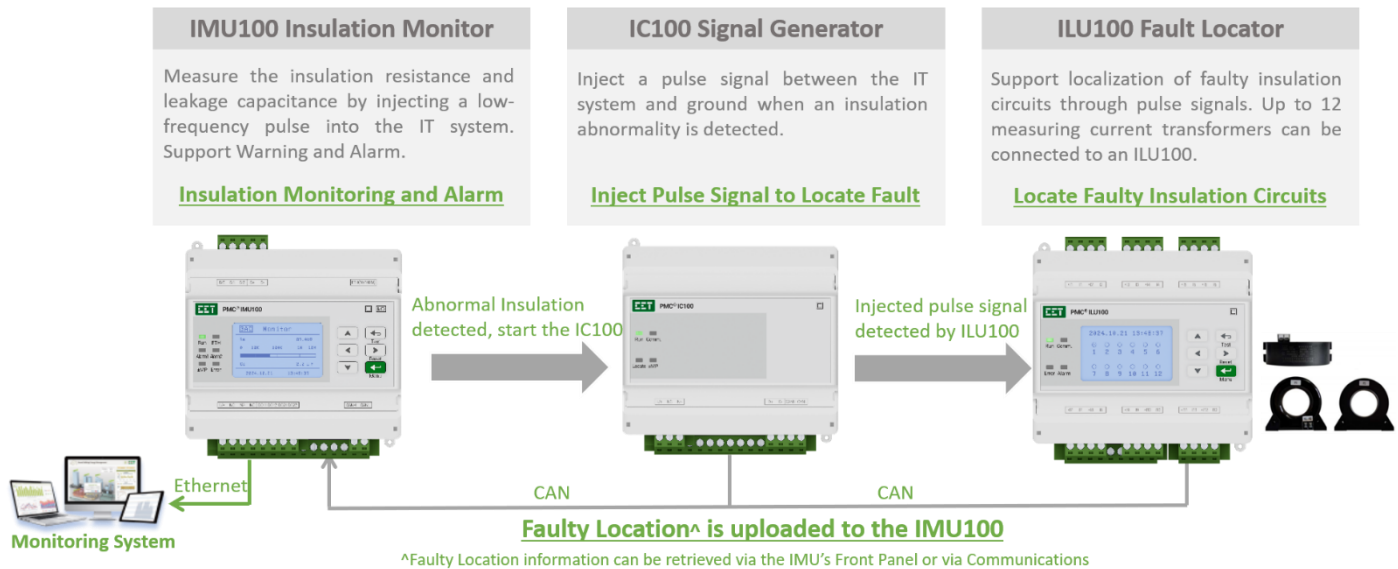


Insulation Monitoring Solution for Industrial IT Systems

Ungrounded or isolated-earth (IT) systems for electrical supply networks offer guaranteed continuity under fault conditions but require the installation of permanent insulation monitoring devices. These devices are critical for monitoring and alerting when faults occur, as unaddressed faults can lead to dangerous network conditions.

Overview

CET offers effective Insulation Monitoring and Fault Location solutions for most of modern IT systems in an optimum way which fulfill the relevant standards. The devices can be used in the most flexible way for AC and DC systems even with large leakage capacitance to earth. The Insulation monitoring devices continuously monitor the insulation resistance of IT systems (unearthed systems) and issue an alarm if the value falls below a response value, locate the faults quickly, therefore to avoid unwanted events, such as interruptions to operation, costly damage to property or even physical injuries. The solution consists of IMU 100 Insulation Monitor, IC100 Signal Generator, and ILU100 Fault Locator.



Features

IMU100

- Large, backlit, easy to read LCD display
- Insulation monitoring in accordance with IEC 61557-8
- Automatic adaptation to the system leakage capacitance
- Insulation monitoring for unearthed AC (0-690V) or DC (0~1000V) system
- The monitoring range for Insulation Resistance is between 500 Ω and 10 M Ω
- 2xDI and 2xDO
- 1x100BaseT Ethernet, 1xCAN and 1xRS-485
- Two separate configurable warning and alarm with range from 1k Ω to 10 M Ω
- Disconnection Monitoring
- Self-Diagnostics
- 256 SOE events time-stamped to 1ms resolution
- Easy installation with DIN-Rail mounting, no tools required

IC100

- Compliance with IEC 61557-9
- Applied to unearthed AC (0-690V) or DC (0~1000V) system
- Peak Value of Pulse Current for Fault Location @ 10mA / 20mA / 40mA
- 1xCAN and 1xRS-485
- Self-Diagnostics
- 256 SOE events time-stamped to 1ms resolution
- Easy installation with DIN-Rail mounting, no tools required

ILU100

- Compliance with IEC 61557-8
- Large, backlit, easy to read LCD display
- Response time for collecting the fault-location pulse signal < 10s
- 1xCAN and 1xRS-485
- Configurable Alarm Threshold
- CT Disconnection detection
- Self-Diagnostics
- 256 SOE events time-stamped to 1ms resolution
- Easy installation with DIN-Rail mounting, no tools required

Applications

The CET's Industry-specific Insulation Monitoring Solutions for:

- Non-earthed DC / AC and mixed IT Systems
- Uninterruptible Power System (UPS)
- Networks with frequency inverters
- Battery networks
- Networks with DC drives
- Substations, Main circuits, and Control circuits
- Earth fault clearing in unearthed mining
- Photovoltaic systems
- Hybrid and battery-powered vehicles

Benefits

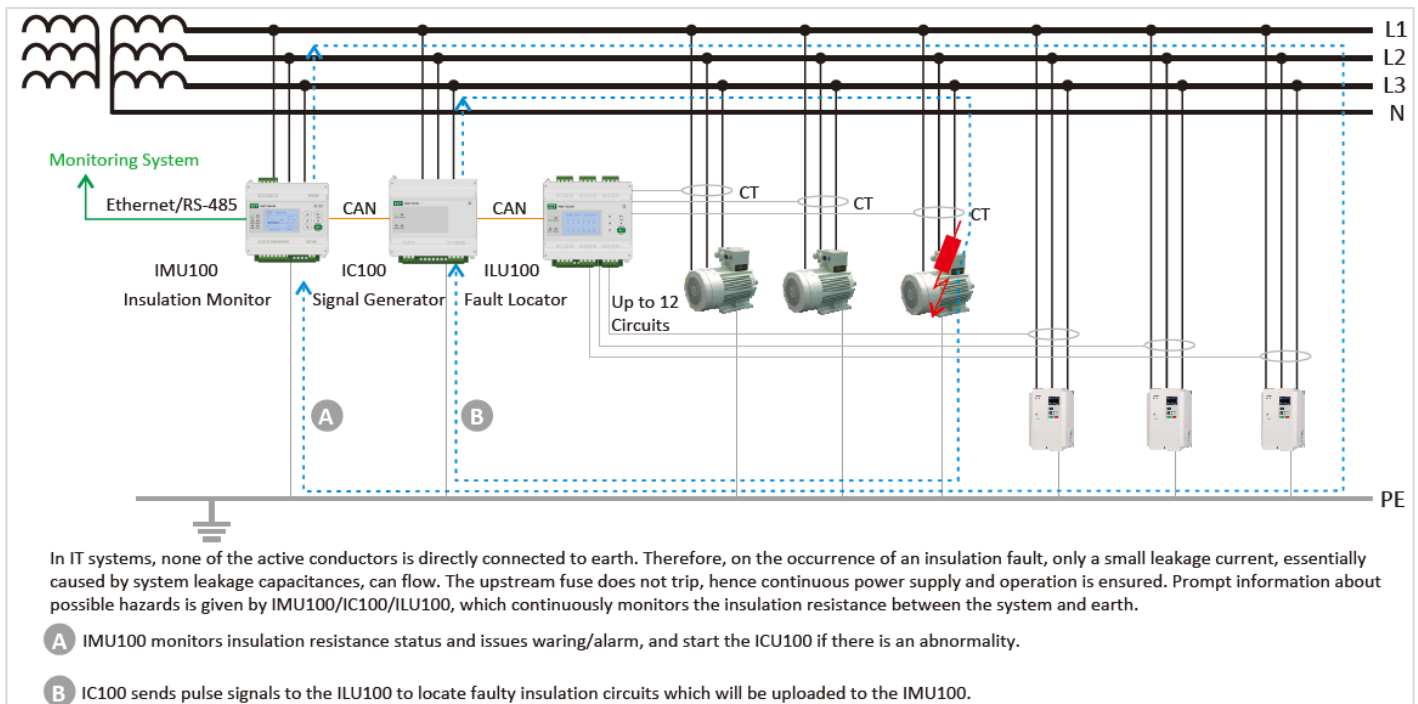
- Early detection and reporting of insulation faults
- Automatic localization of faulty current paths
- Optimized use of time and personnel resources
- Reducing time and staff expenses for maintenance

Standards

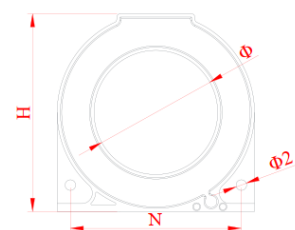
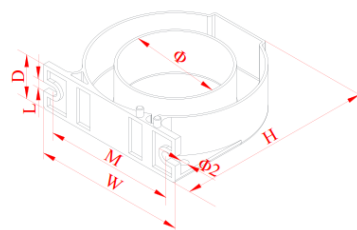
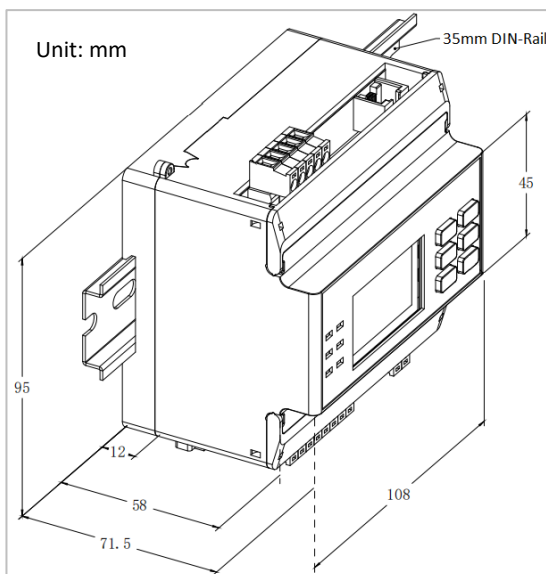
The CET's Insulation Monitoring devices are designed according to the following standards:

- IEC 61326-2-4
- IEC 61557-8: 2014
- IEC 61557-9: 2023

Typical Wiring Diagram



Dimensions and Installation



Model	I _{normal} Of Circuit (A)	Dimensions (mm)			Aperture (mm)	Installation (mm)			
		W	H	D	Φ	M	N	L	Φ2
CT517103	0-100	76	67	25	30	69	58	5	3
CT517203	0-160	98	86	28	46	87	72	5	5
CT517303	0-250	124	105	28	65	110	95.7	6	5
CT517403	0-400	140	129.5	32	80	122	105.4	6	6
CT517603	0-1000	188	172	32	120	170	142	6	6
CT517703	0-1250	225	206	32	150	205	177.9	6	6
CT517803	0-1500	296	274	40	200	278	226	6	8



Technical Specification

	IMU100	IC100	ILU100
Power Supply	95~250V AC/DC, 47~440Hz		
Burden	<7W	<2W	<2W
IT System			
Nominal Voltage U_n	0~690V AC/3AC, 0~1000V DC		
(AC) Nominal Frequency f_n	50Hz/60Hz		
Communications			
Port	1xRS-485 + 1xEthernet + 1xCAN	1xRS-485 + 1xCAN	1xRS-485 + 1xCAN
Protocol	Modbus-RTU, Modbus-TCP	Modbus-RTU	Modbus-RTU
Inputs and Outputs			
Digital Inputs (DI1, DI2, DIC)	24VDC internally wetted	-	-
Digital Outputs (DO11, DO12, DO21, DO22)	8A @ 250VAC or 24VDC	-	8A @ 250VAC or 24VDC
Measuring Circuit			
Measuring Voltage U_m	±40V	-	-
Measuring Current I_m	≤317.46μA	-	-
Internal DC Resistance R_i	≥126kΩ	-	-
Permissible Extraneous DC voltage U_{fg}	≤480V	-	-
Insulation Monitoring			
Insulation Resistance			
Range	500Ω~10MΩ	-	-
Accuracy	500Ω~10kΩ: ±1Ω 10kΩ~10MΩ: ±10%	-	-
Leakage Capacitance			
Range	AC/3AC: 0~300uF; DC: 0~200uF	-	-
Accuracy	±10uF or ±10%	-	-
Voltage			
Range	0~690V AC/3AC, 0~1000V DC	-	-
Accuracy	±5V or ±5%	-	-
Response Time (Ce=1μF)	<10s	-	-
Warning & Alarm Range	1kΩ~10MΩ	-	-
Fault Detection			
Peak Pulse Current	-	10mA / 20mA / 40mA	-
Location Current		-	2mA~10mA
Response Time	-	-	<10s
Environmental Conditions			
Operating Temp.	-25°C~+70°C		
Storage Temp.	-40°C ~+85°C		
Humidity	5%~95%		
Atmospheric Pressure	70 kPa~110 kPa		
Impulse Voltage/Pollution Degree	9.6/III		

Accessories



Model	I_{normal} of Circuit	Primary	Secondary	Accuracy	Overload
CT517103	0-100A	1A	0.5mA	0.5	10
CT517203	0-160A	1A	0.5mA	0.5	10
CT517303	0-250A	1A	0.5mA	0.5	10
CT517403	0-400A	1A	0.5mA	0.5	10
CT517603	0-1000A	1A	0.5mA	0.5	10
CT517703	0-1250A	1A	0.5mA	0.5	10
CT517803	0-1500A	1A	0.5mA	0.5	10



Ordering Information

Product Code	Description
IMU100 Insulation Monitor	
Locating Current Integration	
X	No locating current injector
System Type	
3	3AC
System Voltage	
2	690V AC, 40-460Hz, 1000V DC
Power Supply	
B	95-250V AC/DC, 47-440Hz, 7W
Installation	
A	DIN-Rail
Communications	
A	1xEthernet Port + 1xCAN Port + 1xRS-485 Port
Display Language	
E	English
IMU100 - X 3 2 B A A E	IMU100-X32BAAE (Standard Model)

Product Code	Description
IC100 Signal Generator	
System Type	
3	3AC
System Voltage	
2	690V AC, 40-460Hz, 1000V DC
Power Supply	
B	95-250V AC/DC, 47-440Hz, 2W
Installation	
A	DIN-Rail
Communications	
A	1xCAN Port + 1xRS-485 Port
Display Language	
E	English
IC100 - 3 2 B A A E	IC100-32BAAE (Standard Model)

Product Code	Description
ILU100 Fault Locator	
Locating Current Integration	
X	No locating current injector
Circuits Number	
E	12xCircuit
Power Supply	
B	95-250V AC/DC, 47-440Hz, 2W
Installation	
A	DIN-Rail
Communications	
A	1xCAN Port + 1xRS-485 Port
Display Language	
E	English
ILU100 - X 3 B A A E	ILU100-X3BAAE (Standard Model)



Your Local Representative

CET Electric Technology Inc.

E: sales@cet-global.com

W: www.cet-global.com

Revision Date: May 22, 2025