ISOLTESTER-DIG-RZ

2CSM244000R1501

ISOLTESTER-DIG-RS

2CSM256833R1521

ISOLTESTER-DIG-PLUS

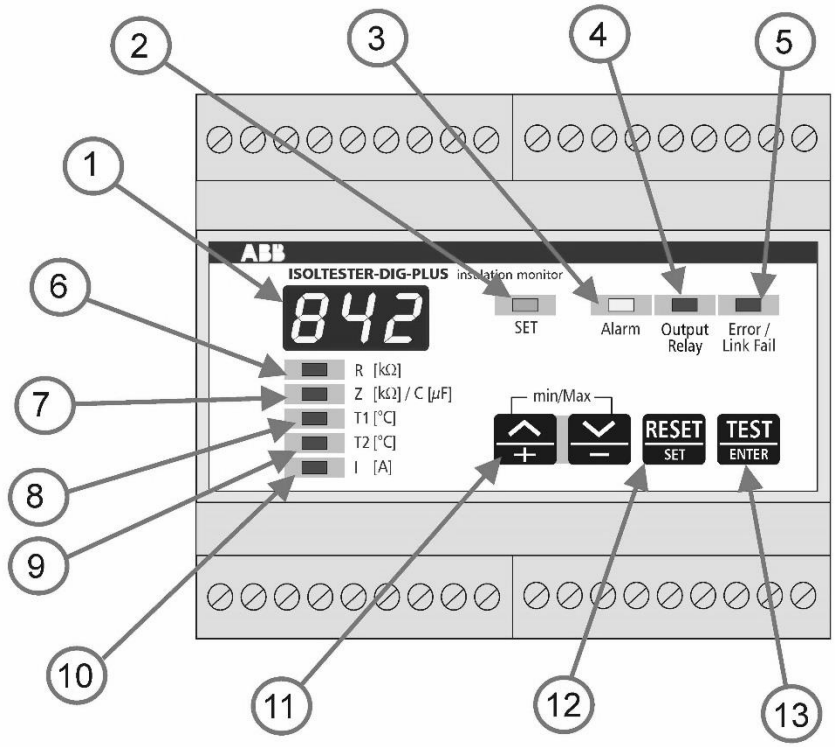
2CSM341000R1501

2CSM444016D0203

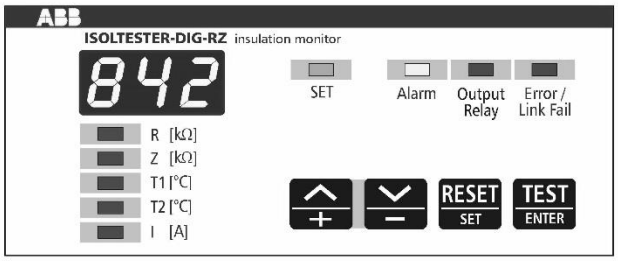
(UK) Main functions

ISOLTESTER-DIG is an insulation monitoring device for medical locations supplied by IT-M networks. It monitors thermal and electrical overloads in isolating transformers, sending a warning when one of the monitored parameters exceeds a set threshold value.
Error / Link-Fail is an auto-diagnostic system which checks if the device is working correctly, monitoring the prescence of voltage between terminals.

ISOLTESTER-DIG-PLUS/RS is available with a serial RS485 output using ModubusRTU protocol which allows bidirectional communication with control systems such as PLCs or LAN, etc…



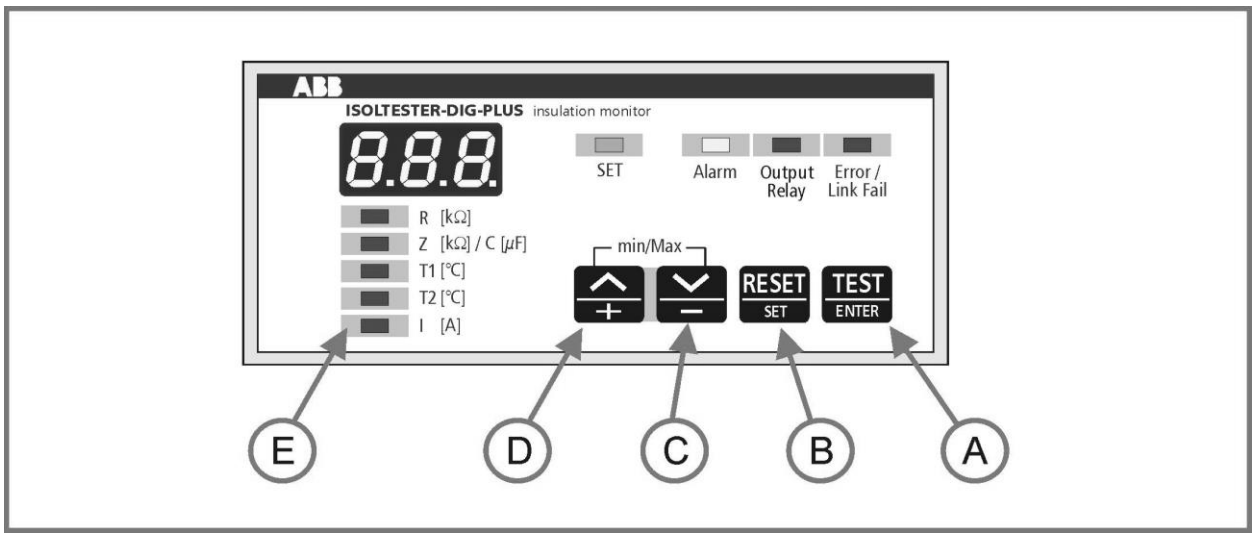
front panel
ISOLTESTER-DIG-RZ



UK Legend

1. Display with 3 digits
2. Green LED, SET: program status
3. Yellow LED, Alarm: alarm due to one of the monitored parameter threshold values being exceeded
4. Red LED, Output Relay: auxiliary relay status
5. Red LED, Error / Link Fail: alarm due to failure, open circuit device, PT100 sensor failure
6. Red LED, R: insulation resistance (kΩ)
7. Red LED, Z: insulation impedance (only available for ISOLTESTER-DIG-PLUS)
8. Red LED, T1: isolating transformer temperature
9. Red LED, T2: isolating transformer temperature
10. Red LED, I: rated current
11. +/- | UP/DOWN: parameter selection, settings adjustment and max/min values visualisation (only available for ISOLTESTER-DIG-PLUS/RS)
12. RESET | SET: device program menu, alarms snooze function and cancellation of max/min values
13. TEST | ENTER: device and panel periodic test and SETUP settings acknowledgement

Signalling LEDs (points 6, 7, 8, 9, 10) flash when a given parameter is over the set threshold value.

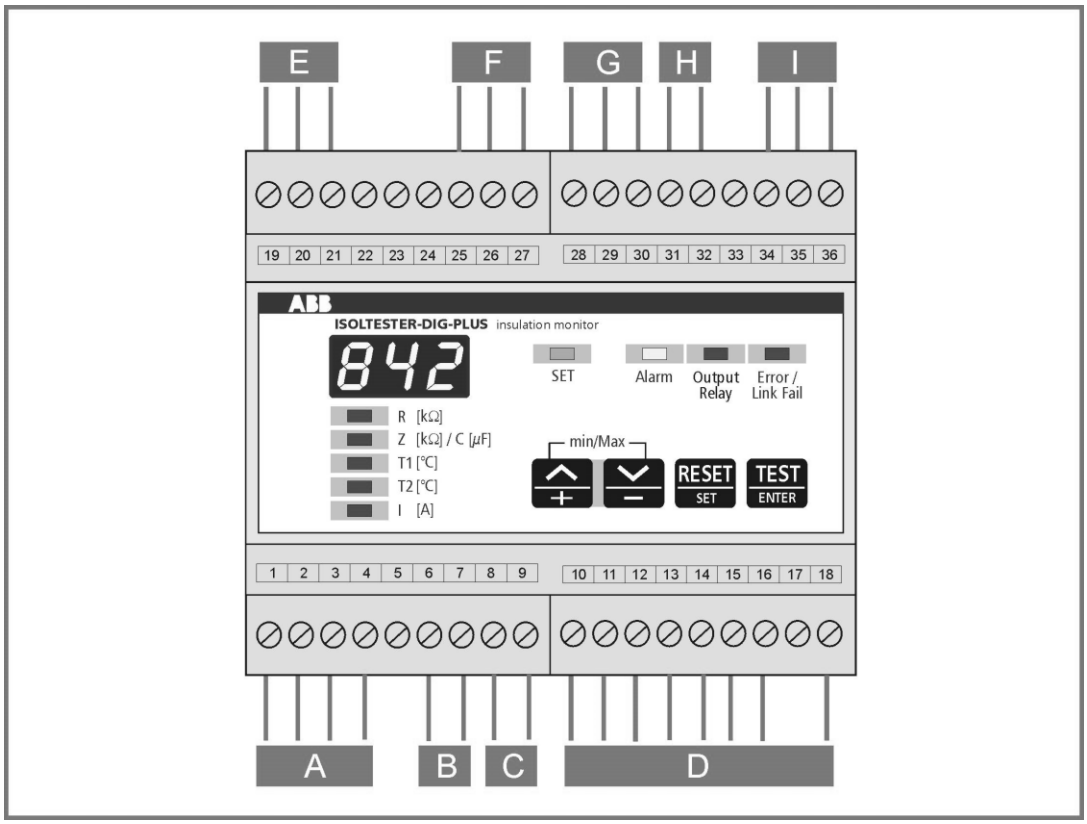


A. To perform functional test of the device, to increase values by unit during settings, to confirm parameters during settings
B. To switch OFF acoustic signalling, to reset memorized values of measurements if pressed for at least 3s within min/max visualization, to decrease values by unit during settings, to enter regulation setup if pressed for at least 3s
C. To change parameter to visualize, to see values of memorized parameters within mix/max visualization, to decrease set values
D. To change parameter to visualize, to increase set values
E. List of red LEDs where to visualize parameters under control

With ‘’D’’ and ‘’C’’ buttons pressed together it is possible to enter the visualization of min/max values.
With ‘’C’’ and ‘’B’’ buttons pressed together for at least 3s it is possible to enter the installation setup.
With ‘’A’’ and ‘’B’’ buttons pressed together for at least 4s it is possible to come back to default settings for both setups (installation and regulation) while the device has been switched ON. At the next switch ON of the device it is possible to see default values on settings.

UK Installation

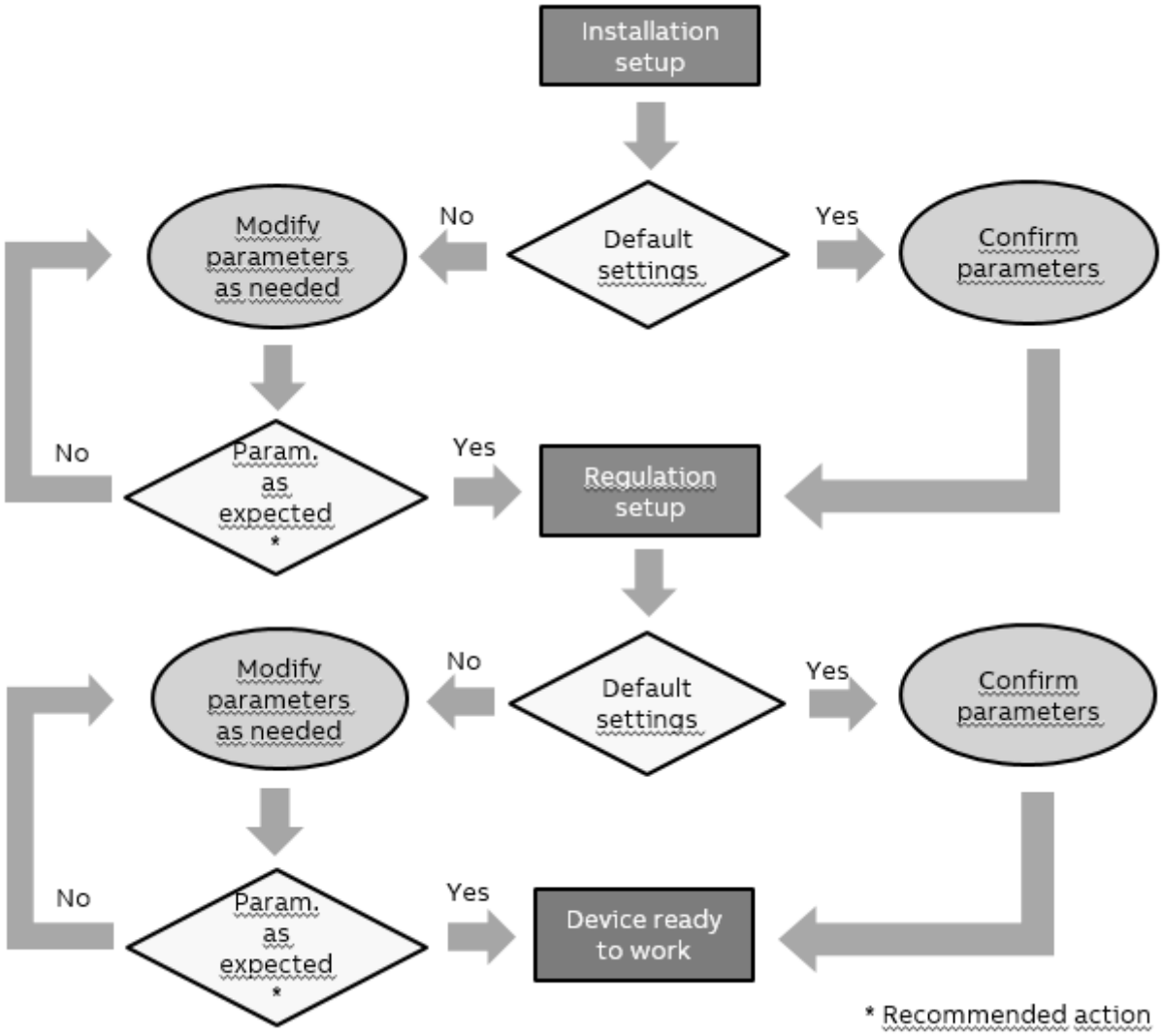
It is possible to install only one insulation monitoring device for each independent supply line. Fasten the device onto DIN rail (35 mm) using a proper fixing system on the rear.



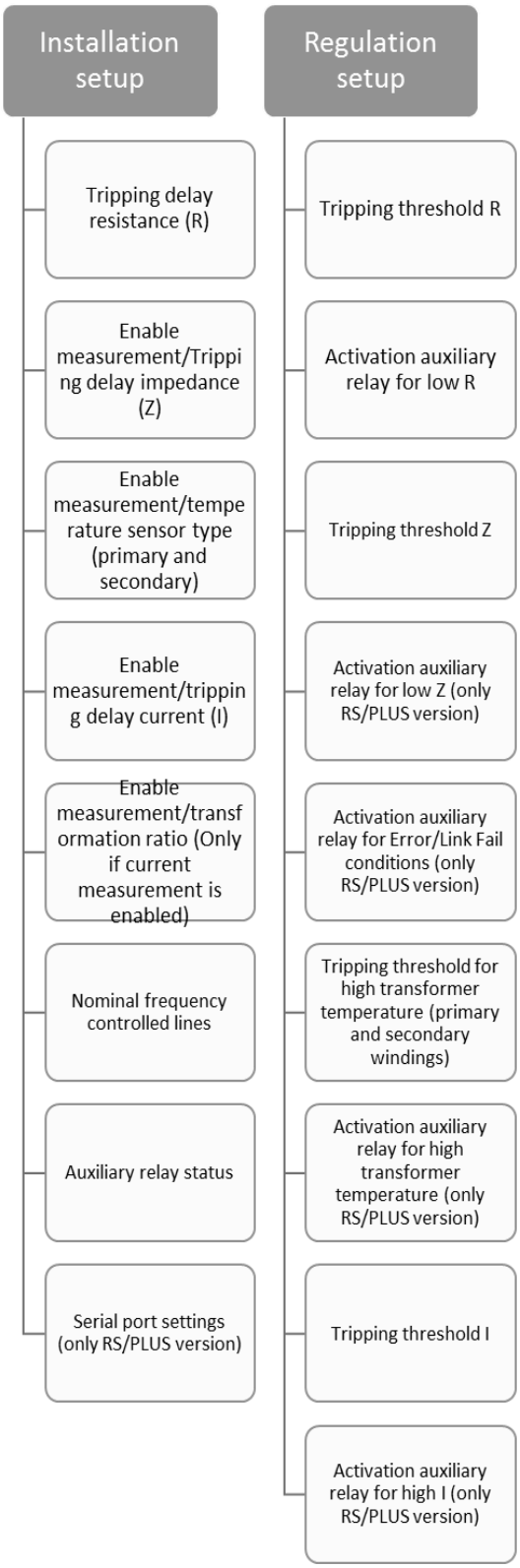
UK Legend

A. Auxiliary supply (rated voltage 115/230 V 50-60 Hz)
B. Error / Link Fail
C. Insulating resistance and impedance measurement
D. Output for remote signalling panels
E. Serial output RS485 (only for ISOLTESTER-DIG-PLUS/RS)
F. Temperature sensor 2
G. Temperature sensor 1
H. Current transformer …/5 A input
I. Programmable auxiliary relay output

UK Operative steps



UK Menu structure



UK Programming

Installation SETUP

Used to define the general functioning conditions

Button	Pressure	Function
C + B	continuous	Access installation setup
A / B	quick	Adjust parameters
A	quick	Confirm parameter / next parameter
A + B	continuous	Default values

Available settings from *installation setup*, (default values in **bold**:)

Function	Adjustment	Indications	
		LED	Display
Delay for insulation alarm	**1**÷4 sec	SET+R	dLy
Delay for impedance alarm	**off** / 1÷4 sec	SET+Z	dLy
Config. temp. sensor T1	**off**/PTC/PT100	SET+T1	NoD
Config. temp. sensor T2	**off**/PTC/PT100	SET+T2	NoD
Delay for electrical overload	**off** / 1÷60 sec	SET+I	dLy
Transformation rate	**off**/1 ÷ 40	SET+I	Ct
Rated frequency	**50**/60 Hz	SET	FrE
Fail safe (aux relay status)	**NOP** (open) NCL (closed)	SET+Output Relay	SEt

Settings for serial output RS485 (only for ISOLTESTER-DIG-PLUS/RS)

Function	Adjustment	Indications	
		LED	Display
Network Address	**1**÷255	SET	`Id`
Communication speed	2.40/4.80/9.60/**19.2** kbaud	SET	`bdr`
Parity, bit data, bit stop	**N81**/N82/E81/O81	SET	`PAr`

Regulation SETUP:
To set threshold values and auxiliary relay activation mode

Button	Pressure	Function
B	continuous	Access adjustment setup
A / B	quick	Adjust parameter
A	quick	Confirm parameter / next parameter

Available settings from *regulation setup*, (default values in **bold**:)

Function	Adjustment	Indications	
		LED	Disp.
Resistance threshold	**50**÷500 kΩ	R	SEt
Aux relay activation for low resistance	**off**/on	R+ Output Relay	rEL
Impedance threshold	**off**/50÷500 kΩ	Z	SEt
Aux relay activation for low impedance*	**off**/on	Z+ Output Relay	rEL
Aux relay activation for Error / Link Fail*	**off**/on	Output Relay +Error/Link Fail	rEL
Temp threshold T1/T2 (in case of PT100)	**off** / 30÷200 °C	T1/T2	SEt
Temp threshold T1/T2 (in case of PTC)	**off**/on	T1/T2	rEL
Aux relay activation for thermal overload T1/T2*	**off**/on	T1/T2+ Output Relay	rEL
Current threshold	**off**/0÷99.9 A	I	SEt
Aux relay activation for electrical overload*	**off**/on	I+ Output Relay	rEL

* Available only for ISOLTESTER-DIG-PLUS/RS

NOTES:

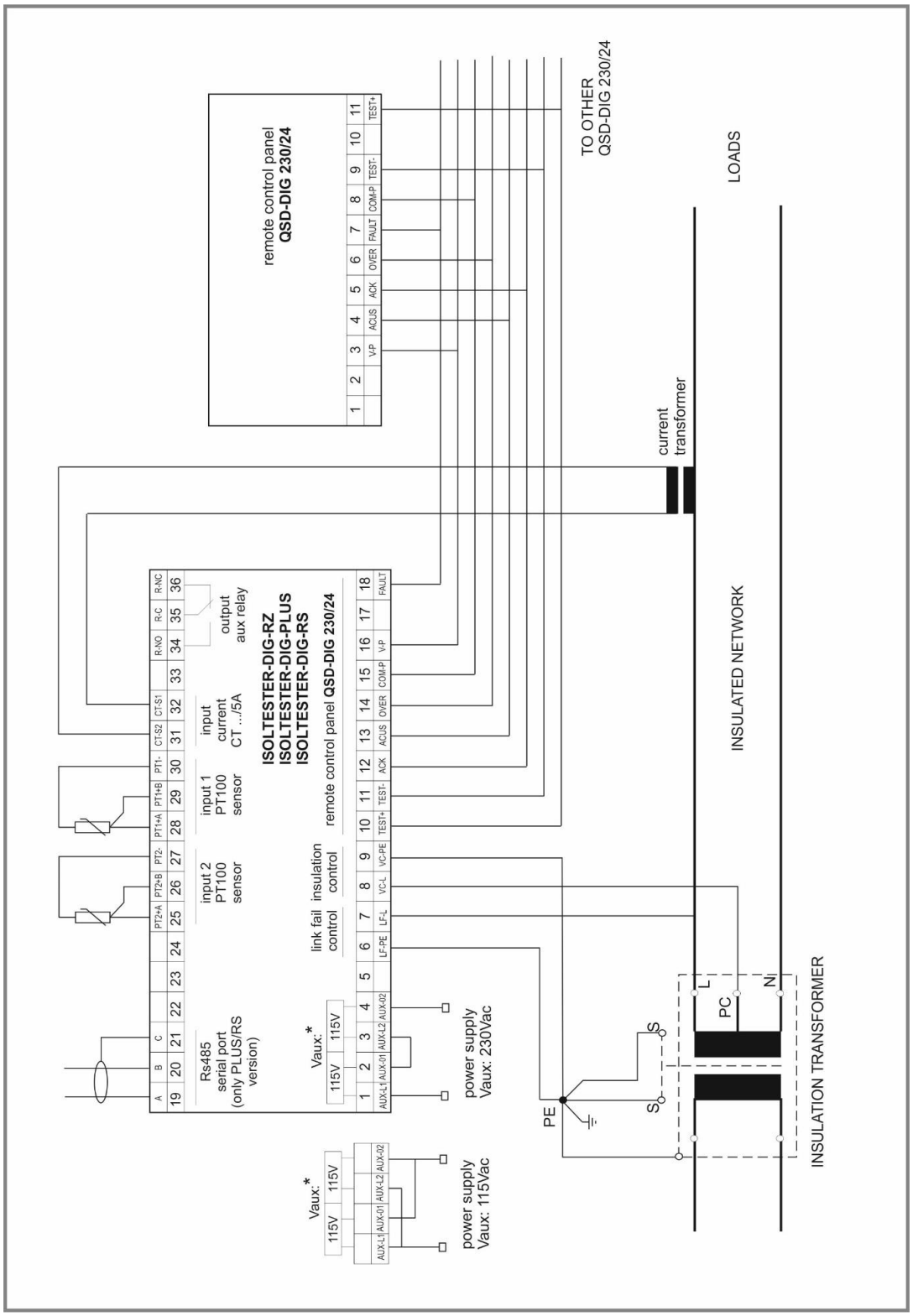
A. If temperature measurement is taken from a PTC sensor, ISOLTESTER-DIG will display `tLO` for low temperatures, `HOt` for temperatures close to the threshold and `tHI` for temperatures exceeding the threshold. Thresholds for PTC measurements are defined according to DIN44081
B. If a given parameter exceeds the maximum value of the measuring scale, the display will show `HI_`
C. The “Output Relay” LED will switch ON only if the auxiliary relay has been activated in installation setup.
D. The measured parameters on the monitor can be substituted by an error message and an alarm shown via the “Error / Link Fail” LED
E. If the system is under alarm condition, the display will show `Alr`, the ‘’Alarm’’ yellow LED will light ON and the red LED on the parameter exceeding the threshold is activated

Alarm and error indications

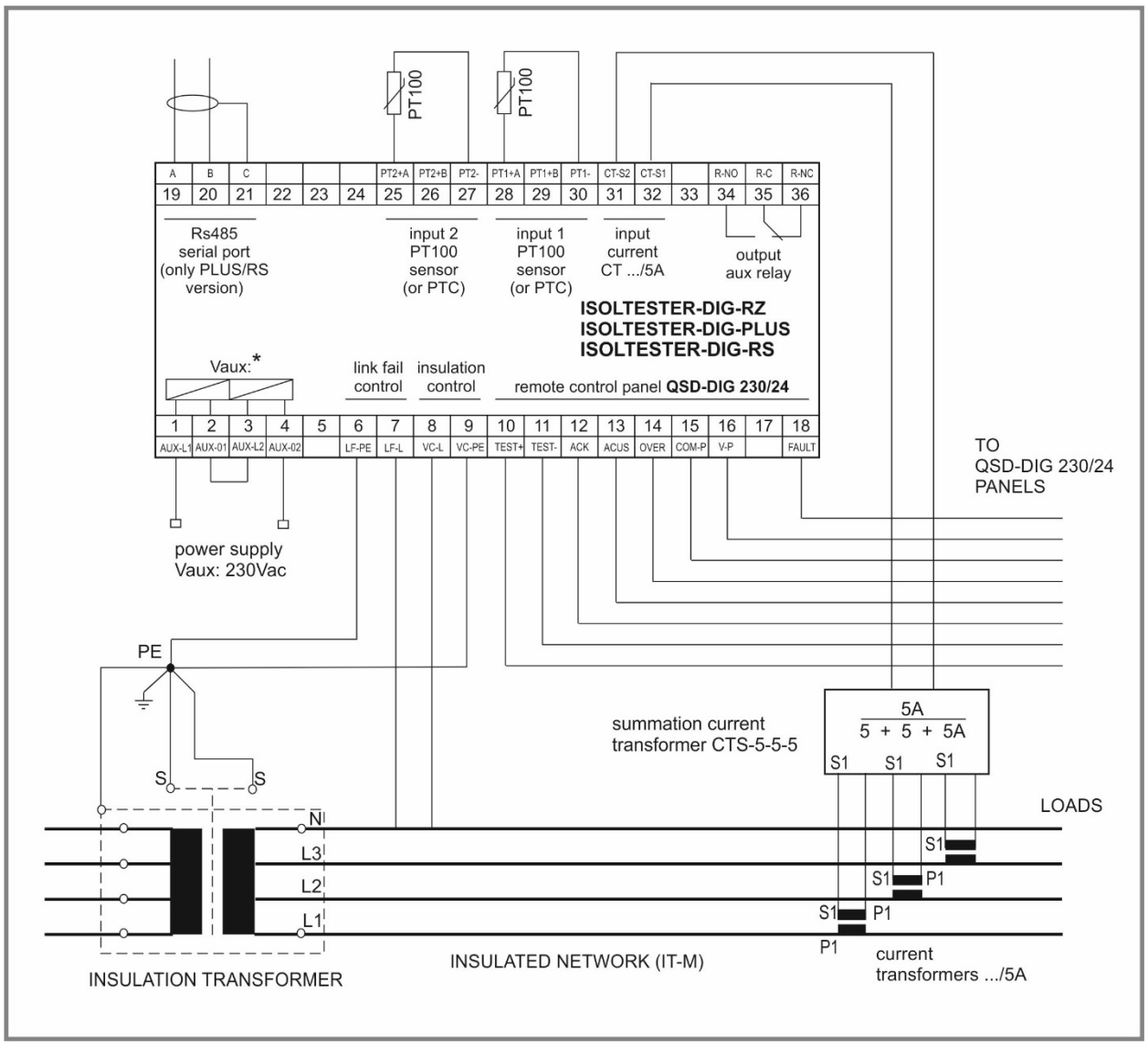
Indication	Display	LED
Low insulation	0÷499	Alarm + R
Low impedance	0÷499	Alarm + Z
Thermal overload T1 (PT100)	30÷200 / HI	Alarm + T1
Thermal overload T1 (PTC)	tHI	Alarm + T1
Thermal overload T2 (PT100)	30÷200 / HI	Alarm + T2
Thermal overload T2 (PTC)	tHI	Alarm + T2
Electrical overload	1÷99.9 / HI	Alarm + I
Error / Link Fail	LF_	Error/Link Fail+R/Z
Short circuit temp sensor T1/T2	SHr	T1/T2
Open circuit temp sensor T1/T2	OPE	T1/T2

UK Wiring diagram

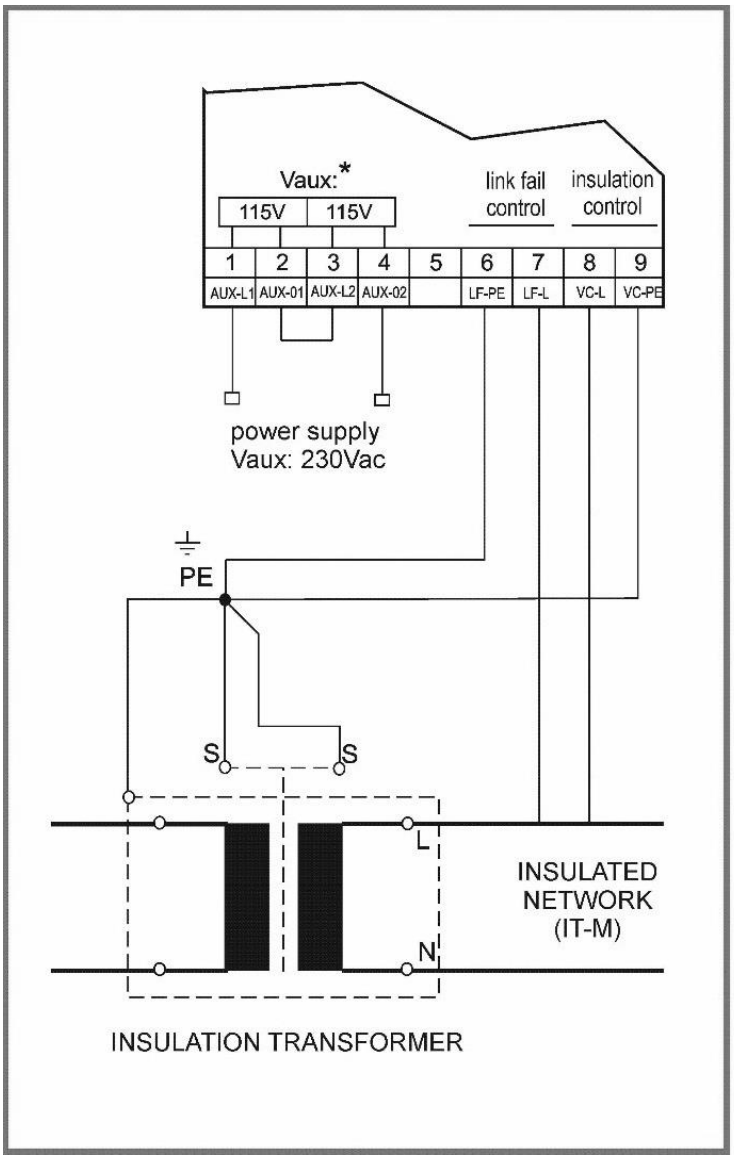
Single phase network control and integration with QSD-DIG 230/24



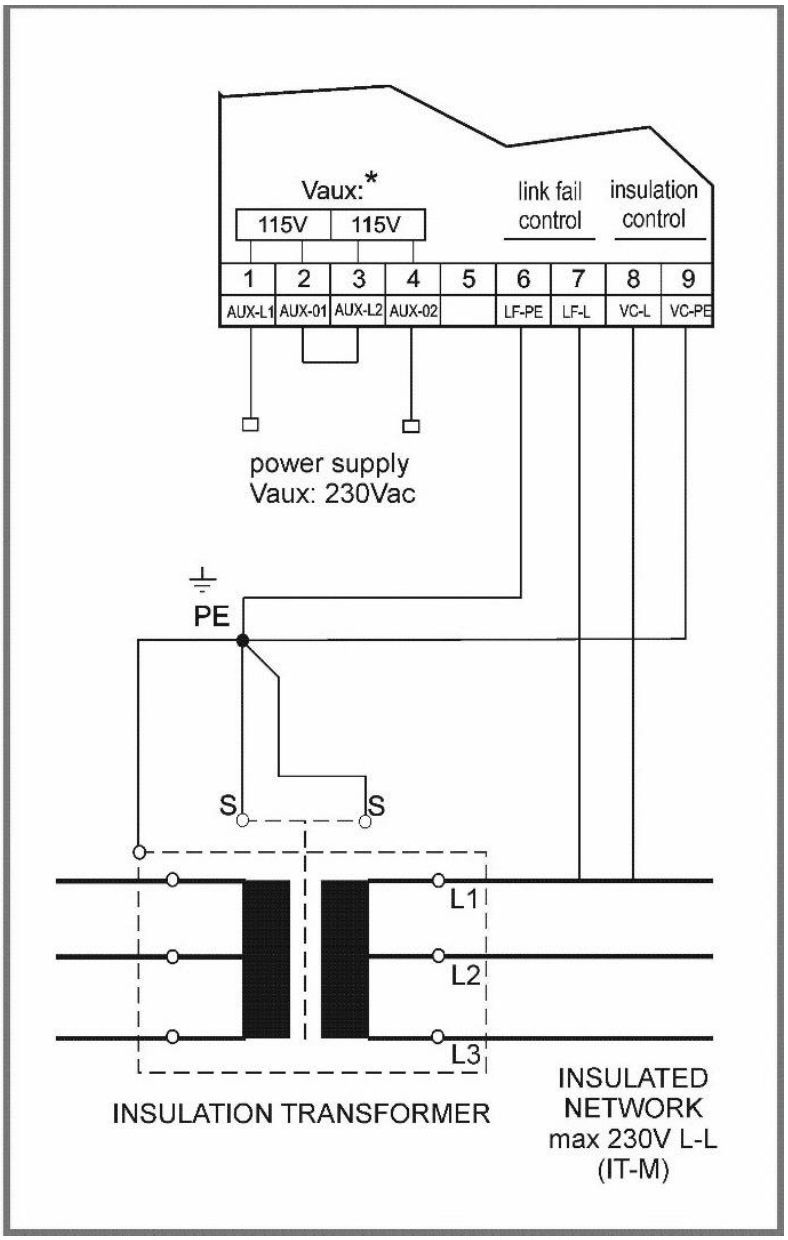
Three phase network control and integration with QSD-DIG 230/24



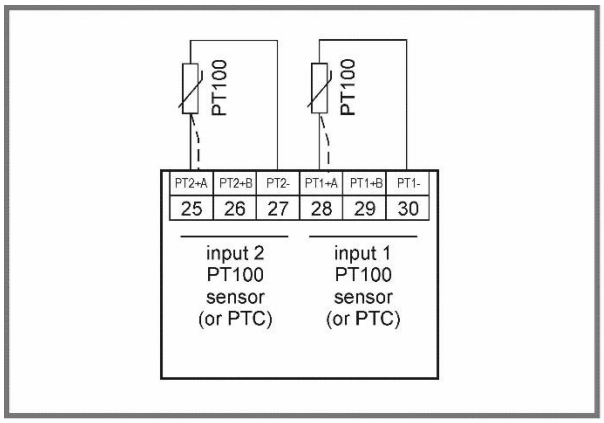
Measuring section detail for a single phase network:

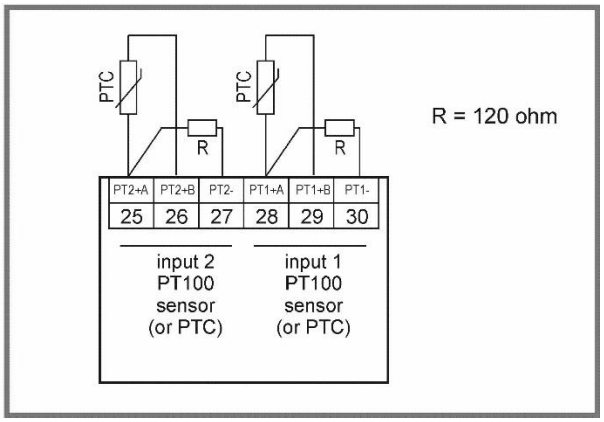


Measuring section detail for a three phase network:



Temperature sensors (PT100 and PTC) connection



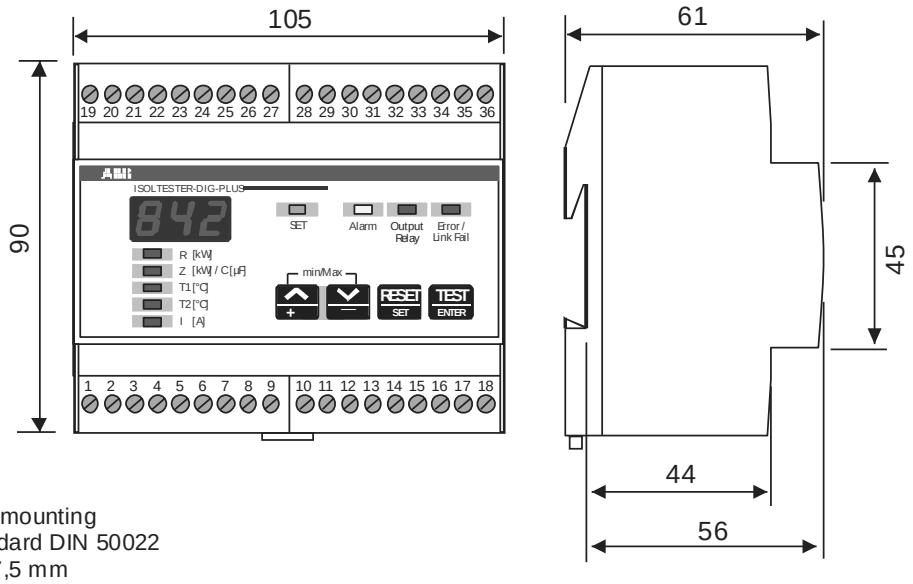


UK Technical features

	ISOLTESTER-DIG-RZ	ISOLTESTER-DIG-PLUS/RS
Aux supply	115 - 230 V 50-60 Hz	
Power consumption	5 VA max	
Rated voltage	24÷230 V 50-60 Hz	24÷250 V AC/DC
Measuramentr current	1 mA max	
Measurement voltage	24 V max	
Control signal	Continuous with digital filter	Composite codified (only PLUS)
Internal impedance	200 kΩ	
Insulation measurement	- 0 ÷ 999 kΩ/HIGH - resolution 1 kΩ - accuracy 5% ± 1 digit	
Impedance measurement	- 0 ÷ 999 kΩ/HIGH - resolution 1 kΩ	
Temperature measurement	- PT100 with 2 or 3 wires, PTC - 0÷200 °C - resolution 1 °C - accuracy 2 % ± 1 digit	
Current measurement	- CT …/5 A external - accuracy 5% ± 1 digit, (adjustable transformation rate 1÷40)	
Capacity measurement	no	- 0 ÷ 9.9 µF (only PLUS) - resolution 0.1 µF (only PLUS)
Thresholds	Resistance: 50 ÷ 500 kΩ	
	Impedance: 50 ÷ 500 kΩ	
	Thermal overload: 30 ÷200 °C with PT100	
	Electrical overload: 1 ÷ 99.9 A	

Signals	- incorrect wiring (Error/Link fail) - open/short circuit for temp. sensor PT100 - internal error	
Output	QSD supply (max 4 QSD), max 24 V DC	
	Signals to QSD	
	Aux. relay for low resistance, NO-C-NC 5A 250 V AC	programmable aux relay, NO-C-NC 5A 250 V AC
	-	Serial output RS485, ModbusRTU protocol
Modules	6	
Weight	0.4 kg	0.5 kg
Mechanical features	- fire resistant plastic case - sealable transparent front cover	
Terminals	screw terminals 2.5 mm^2	
Protection degree	IP20, IP50 front	
Operating temperature	-10 ÷ 60 °C	
Storage temperature	-25 ÷ 70 °C, humidity < 95%	
Insulation	2.5 kV 60 sec.	
Reference standards	CEI-EN 61010-1 CEI-EN 61557-8 CEI 64.8/7-710 V2 IEC 60364-7-710 UNE 20615 CEI-EN 61326-1	

UK Overall dimensions



35mm DIN rail mounting
according standard DIN 50022
6 modules x 17,5 mm

UK Compatibility

The product is compatible with the following remote signalling panel devices:

ABB Code	Type	Max. Num. QSD
2CSM273063R1521	QSD-DIG 230/24	4
2CSM257093R1521	QSD-DIG 230/24 V	4

CE

ABB Group
Electrification Products Division
Building Products Business Unit