



- Direct connection up to 690V line voltage, up to 6,6kV with HV adapter for both single or three phase systems
- Continuous supervision of measuring loop continuity
- 2-level insulation relays and loop continuity relay
- Immune to earth capacitance and voltage surges
- For use in land, marine, offshore, sub-sea and ocean floor installations.
- Complies with IMCA D 045 Code of Practice
- Analogue output proportional to meter reading (F-version)
- Optional slave indicator

Specifications

Auxiliary Supply:	100-120, 200-240, 380-415 or 440-460VAC, 40-70Hz (Fuse 0.5A)
Optional Voltage:	12-24, 48 or 110VDC (Fuse 2A)
Supply tolerance:	± 10%
Power rating:	1,5VA
Contact rating:	AC: 100VA - 250V/2A max. DC: 50W - 100V/1A max.
Analogue Output:	Up to 20mA, max 500R
F-versions	Up to 10V, min 100kohm (other on request)
Temperature:	-20 to +70°C
Weight:	0.6kgs
Front protection:	IP21

INTELLIGENT SETTING ASSISTANCE

KCM26x has a built-in Assistance tool for setting/verification of the trip levels and the analogue output.

When either the **Warning** or **Alarm** potmeter on the front is operated by user, the slave meter goes into **Assistance Mode** and meter reading and analogue output will reflect the potmeter setting.

How to set alarm levels:

Firstly adjust potmeter fully clockwise (see that meter goes to the top), then adjust potmeter down to required **Warning** or **Alarm** setpoint. In this mode, the Alarm or Warning LEDs (depending on which potmeter is adjusted) will flash quickly Red/Yellow.



Without any movement of potmeters, the meter will revert to normal Insulation Monitoring Mode after approximately 10 seconds.

How to test analogue output signal:

Adjust any trip level potmeter to activate Assistance Mode.
Example: On a 4-20mA output, adjust potmeter fully anti clockwise for 4mA and fully clockwise for 20mA.

The KCM26x range is designed to comply with specification IMCA D 045 "Code of Practice for the Safe Use of Electricity Under Water" issued by IMCA.

The unit meets IEC60092-504 and the relevant environmental and EMC tests specified in IEC60068/60092 and IEC61000/60533 respectively, to comply with the requirements of the major Classification Societies.

Application

The prime purpose of the digitally controlled KCM26x is basically identical to the "traditional" KCM16x Insulation Guard range. An auxiliary Measuring Input Loop Continuity Monitoring Facility has been added to notify the operator if a measuring loop disruption may cause the meter to read a too high insulation level.

The unit has C/O relay outputs for Warning, Alarm and loop failure. The Alarm relay is fail to safety configured. A trip LED flashes when the trip level is passed, the relay trips when the delay has elapsed. The timer resets if the fault is removed during countdown.

Only **ONE** KCM26x can be connected to each IT-system. The ohmmeter and the triple-zone status LEDs give at a glance the clear safety message:

- ALARM (red zone)
- WARNING (yellow zone)
- HEALTHY (green zone)



General

IDV MEASURING PRINCIPLE

Insulation is measured between the complete galvanically interconnected AC network and its protective earth. The signal flows to ground via the path of the insulation fault, the level of flow indicates the insulation resistance. The measuring accuracy is not influenced by any normal kind of load attached to the AC network, the processing time for KCM26x is approximately 400mS.

MEASURING LOOP ALARM

A sensing resistor is mounted at the furthest end of the monitored loop in a separate **Loop Resistance Sensor Module (LRSM-1,4 or LRSM-5)**. There are no restrictions on distance from the sensing resistor to the KCM26x unit. There is a fixed delay of 60 seconds on the loop failure alarm.

The Loop alarm will notify the operator by activating LED **LOOP FAILURE** and trip relay 3. A disruption in the input measuring loop may cause the guard to falsely read a too high insulation level. The Measuring Input Loop Continuity Monitoring Facility is of special importance during lasting standby conditions (motors, lanterns etc).

MEGGER SAFE

When auxiliary power is **OFF** the unit input is automatically protected against "megger" test voltages up to 1.4kVDC, and incorrect measurements caused by the unit's input impedance is avoided.

OUTPUTS

All F versions have an isolated **analogue output** proportional to meter reading. If output is used for remote meter reading, we recommend 0-1mA for the slave indicator.

SAFETY

When a voltage adapter (CHx) is used the signal to terminals 4 and 6 on KCM261x and KCM263x is limited to a safe level, avoiding any dangerous voltage exposure to personnel.

Description

KCM261E & KCM261F - KCM261G & KCM261GF

Scale range: 0-1000kΩ - ∞ (>6MΩ)

This unit is used for hospital, industrial, marine and offshore installations. Start of monitoring function is delayed when auxiliary power is switched on (default 5 secs delay).

Direct connection up to 690V line voltage. Up to 1,4kV via HV adaptor CH163-1,4.

NB! Loop Resistance Sensor Module LRSM-x must be used together with all KCM26x models.

Relay Operation

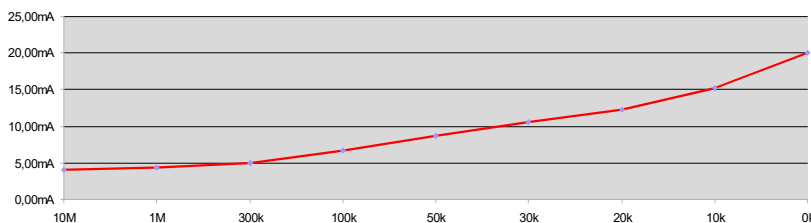
Scale range: 0-1000kΩ - ∞ (>6MΩ)

Relay	Warning	Alarm	Loop Failure	Fail Safe	Latch
R1	X				
R2		X		X	*X
R3			X	X	*X

Model	Latch	Output	Adjustments	Trip level	Delay
KCM261E	-	-	WARNING:	0-1MΩ	0-30secs
KCM261F	-	X	ALARM:	0-1MΩ	0,1-3secs
KCM261G*	X	-			
KCM261GF*	X	X			

Coloured sectors show recommended areas of settings:
 - Indicates alarm trip zone
 - Indicates warning trip zone
 - Indicates healthy zone

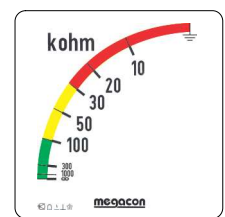
Output diagram



Output table (example for 4-20mA)

Value (scale)	mA output
0kΩ	20.00mA
10kΩ	15.22mA
20kΩ	12.32mA
30kΩ	10.61mA
50kΩ	8.68mA
100kΩ	6.69mA
300kΩ	4.98mA
1MΩ	4.28mA
Open (>6MΩ)	4.00mA

Range



Description

KCM263E - KCM263F - KCM263G & KCM263GF

Scale range: 0-10MΩ - ∞ (>60MΩ)

This unit is used for marine, ROV and offshore installations. Start of monitoring function is delayed when auxiliary power is switched on (default 10 secs delay).

Direct connection up to 690V line voltage. Up to 6,6kV via HV adaptor CH163Bx or AN6,6B series.

NB! Loop Resistance Sensor Module LRSM-x must be used together with all KCM26x models.

Relay Operation

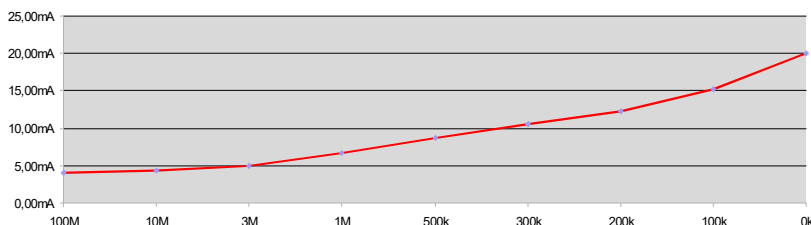
Scale range: 0-10MΩ - ∞ (>60MΩ)

Relay	Warning	Alarm	Loop Failure	Fail Safe	Latch
R1	X				
R2		X		X	*X
R3			X	X	*X

Model	Latch	Output	Adjustments	Trip level	Delay
KCM263E	-	-	WARNING:	0-10MΩ	0-30secs
KCM263F	-	X	ALARM:	0-10MΩ	0,1-3secs
KCM263G*	X	-			
KCM263GF*	X	X			

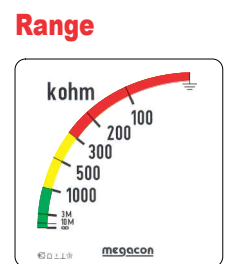
Coloured sectors show recommended areas of settings:
 - Indicates alarm trip zone
 - Indicates warning trip zone
 - Indicates healthy zone

Output diagram



Output table (example for 4-20mA)

Value (scale)	mA output
0kΩ	20.00mA
100kΩ	15.18mA
200kΩ	12.30mA
300kΩ	10.59mA
500kΩ	8.67mA
1000kΩ	6.69mA
3MΩ	4.98mA
10MΩ	4.28mA
Open (>60MΩ)	4.00mA



The MEGACON policy is one of continuous improvement, consequently equipment supplied may vary in detail from this publication.



Description

KCM263E2 - KCM263F2 - KCM263G2 & KCM263GF2

Scale range: 0-10MΩ - ∞ (>60MΩ)

This unit is used for marine, ROV and offshore installations. Start of monitoring function is delayed when auxiliary power is switched on (default 10 secs delay).

Direct connection up to 690V line voltage. Up to 6,6kV via HV adaptor CH163Bx or AN6,6B series.

NB! Loop Resistance Sensor Module LRSM-x must be used together with all KCM26x models.

Relay Operation

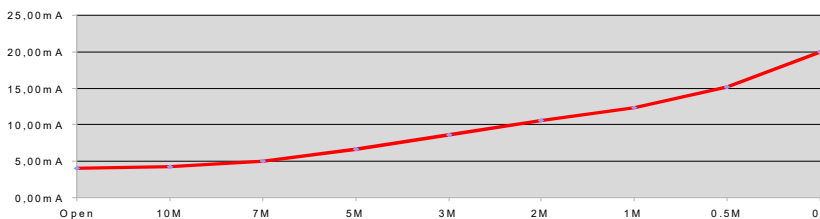
Scale range: 0-10MΩ - ∞ (>60MΩ)

Relay	Warning	Alarm	Loop Failure	Fail Safe	Latch
R1	X				
R2		X		X	*X
R3			X	X	*X

Model	Latch	Output	Adjustments	Trip level	Delay
KCM263E2	-	-	WARNING:	0-10MΩ	0-30secs
KCM263F2	-	X	ALARM:	0-10MΩ	0,1-3secs
KCM263G2*	X	-			
KCM263GF2*	X	X			

Coloured sectors show recommended areas of settings:
 - Indicates alarm trip zone
 - Indicates warning trip zone
 - Indicates healthy zone

Output diagram



Output table (example for 4-20mA)

Value (scale)	mA output
0kΩ	20.00mA
0,5MΩ	15.18mA
1MΩ	12.30mA
2MΩ	10.59mA
3MΩ	8.67mA
5MΩ	6.69mA
7MΩ	4.98mA
10MΩ	4.28mA
Open (>60MΩ)	4.00mA

Range



High Voltage Adaptors up to 6,6kVAC for KCM263x series

- HV Adaptor for AC Insulation Guards
- CH163Bx series, up to 5000V Line Voltage live or non-live (standby)
- AN6,6B up to 6600V System Voltage live or non-live (Starpoint/Neutral connection only)
- Creates safety barrier from live HT network to LV switchboard
- Limits measuring output signal to safe levels
- No restrictions on distance between adapter and LV switchboard

Voltage Adaptors CH163Bx and AN6,6B series are used for Insulation Guard KCM263x when the monitored line voltage is higher than 690VAC. These adapters are a passive low-pass filter for use in 50, 60 or 400Hz networks, and are potted in polyurethane. These units includes high inductance reactance modules, connected in a special configuration to avoid DC saturation. These adapters maintain a high AC suppression of its signal output to very low, safe levels, under all conditions.

Caution: Terminal 1 must be disconnected during "megger" test.



CH163/1,4 up to 1.4kVAC



CH163B/3,6 up to 3.6kVAC



CH163B/5 up to 5kVAC



AN6,6B up to 6,6kVAC



Loop Resistance Sensor Module for KCM26x series



LRSM-1 4 up to 1400V

Dimensions:
DIN rail mounted
55 x 110 x 75mm
Weight: 0,5kg



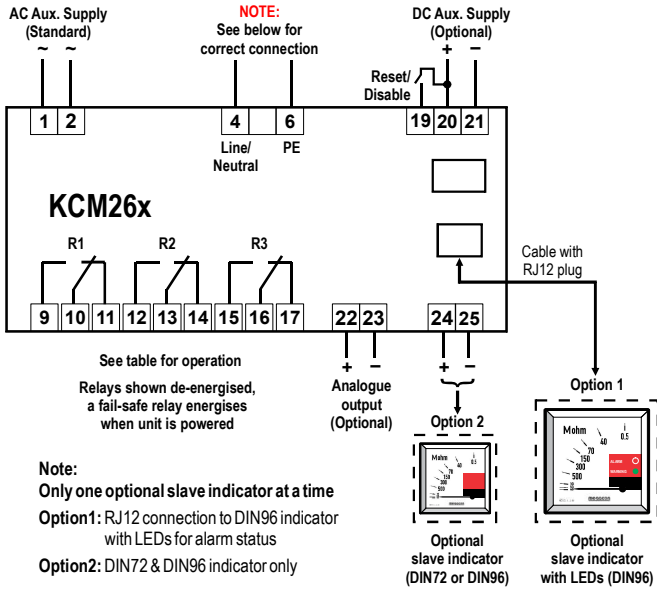
LRSM-5 up to 5kV

Dimensions:
DIN rail mounted
100 x 110 x 75mm
Weight: 0,8kg

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Connection



Analogue Output

KCM261F, KCM261GF, KCM263F, KCM263GF, KCM263F2 and KCM263GF2 have an analogue output proportional to meter reading. (Special outputs are available on request)

Add suffix from table below to type designation to specify output required:

O/P1	0 - 10mA	O/P6	N/A
O/P2	0 - 20mA	O/P7	N/A
O/P3	4 - 20mA	O/P8	0 - 10VDC
O/P4	N/A	O/P9	N/A
O/P5	N/A	O/P10	N/A

Reset / Paralleling Disable Function

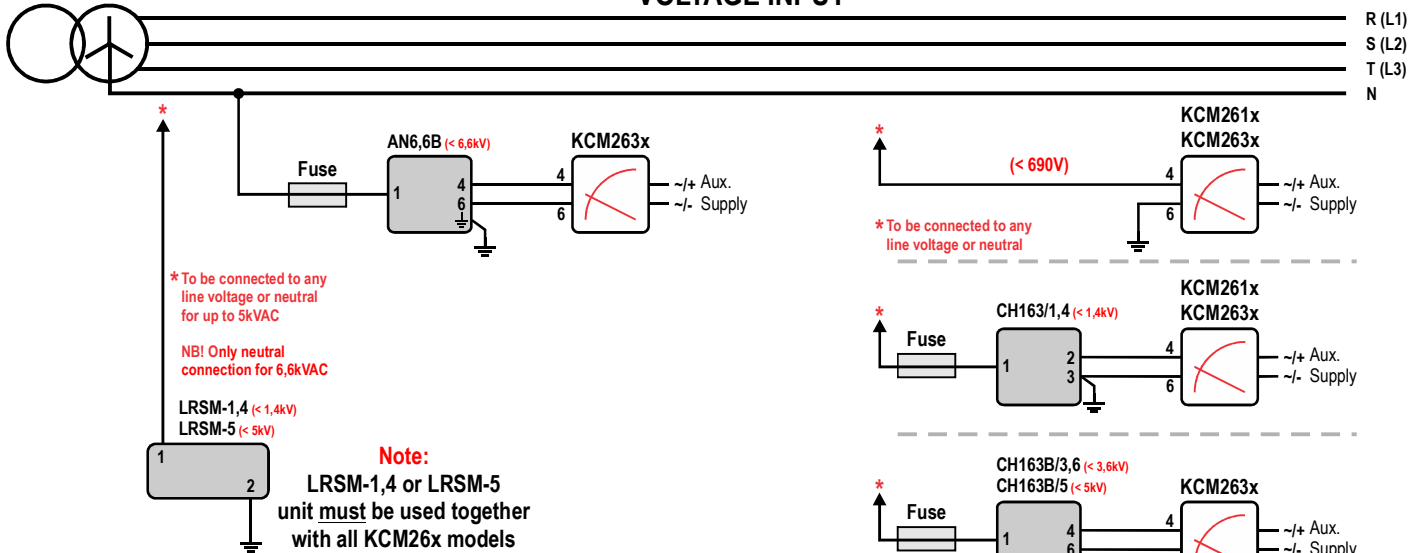
KCM263x has a built-in disable function. When connecting two or more IT-networks together **only one unit** can be active, the other(s) must be disabled. When unit is disabled the power led will flash every 2 seconds to indicate that unit is inactive.

Use a potential free contact on terminal 19 & 20 to activate the disable function (after 2 secs). When activated the measuring input terminal 4 will be internally disconnected.

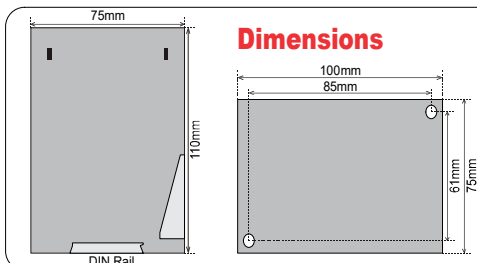
A pulse (60mS - 2 secs) on terminal 19 & 20 will only reset any latching alarm.

Connection

VOLTAGE INPUT

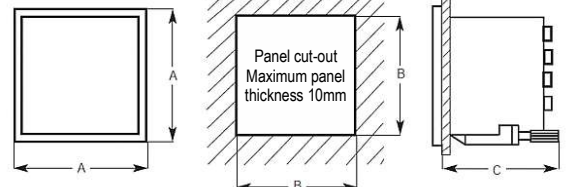


! The instrument will detect earth fault on all phases independent of which phase is connected to terminal 4.



Dimensions for Slave instrument

	DIN 72	DIN96
A	72 x 72mm	96 X 96mm
B	68 x 68mm	92 x 92mm
C	64mm	64mm



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ORDERING EXAMPLE:

Type: KCM263F
 Aux. Supply: 200-240VAC
 Network Voltage: 3,6kVAC
 Analogue O/P: (O/P3) 4-20mA
 Range: 0 - 10Mohm

