



- Precision Generator kW Load Protection, not affected by heavily distorted waveforms
- Total processing time less than 50mS
- 3 or 4-wire systems. Definite time trip delays
- 2-level overload protection (F version)
- Optional fast analogue kW-signal output, <50mS
- Wide range setting of overload contact hysteresis
- Optional DIN96 Slave Indicator with status LEDs

Specifications

Auxiliary Voltage:	100-120, 200-240, 380-415 or 440-460VAC, 40-70Hz (Fuse 0,5A)	
Optional Auxiliary Voltage:	24, 48 or 110VDC (Fuse 2A)	
Current Input:	1 or 5A C.T. <0,1VA	
Contact rating:	AC: 100VA - 250V/2A max. DC: 50W - 100V/1A max.	
Adjustments:	Trip level:	Delay:
Overload:	0-100% of FSD	0-30secs
Reverse Power:	0-20% of FSD	0-30secs
Hysteresis:	2-50%	
Adjus. F-versions:	Trip level:	Delay:
Overload 1:	0-100% of FSD	0-30secs
Overload 2:	0-100% of FSD	0-30secs
Reverse Power:	0-20% of FSD	0-30secs
Hysteresis:	Fixed 10%	
Analogue Output:	Up to 20mA, max 500R Up to 10V, min 100kohm (other on request)	
Temperature:	-20 to +70°C	
Weight:	0.6kgs	
Front protection:	IP21	

Application

The digital controlled KCW17x range provides precision (1.0%) reverse power and overload protection and monitoring of three phase generators.

Available for 3-phase 3-wire (2W3) and 4-wire (3W4) systems.

The unit measures the voltage and current true r.m.s. value, and accuracy is independent of any wave form distortion. The auxiliary voltage is supplied from the unit voltage input. ADC auxiliary voltage input is optionally available.

A green LED indicates POWER on. Start of monitoring function is delayed when power is switched on (default 2 secs delay). In this way false tripping during power up is avoided.

The DIN-rail mounted instrument reads the power level directly in kW. The optional slave watt-meter and the triple-zone status LEDs at a glance gives the clear safety message:

- OVERLOAD
- NORMAL
- REVERSE POWER

Relay operation depends on the selected model. Other combinations are available on request.

OUTPUTS

If output is used for remote meter reading, we recommend 0-1mA for the slave indicator.

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.

Related information:

The KCW17x-range is also available for panel mounting as KPW17x.

Description

KCW171C - KCW171H & KPW176A - KPW176H

Configuration: 3-Phase, 3-Wire (Bi-Polar 1)

3-wire configuration. Reverse power relay (R1) is used to trip the generator breaker. The overload relay (R2) can be used for non-essential load release or as start signal to standby generator etc. A wide range overload hysteresis can be set to enable R2 to be used for non-essential load to be reconnected or as standby generator stop signal. Relay R3 is intended for notification of a reverse power condition, or can be used for local indication, as input to an alarm system etc. R1 and R3 will latch after trip.

KPW176A & KPW176H have **analogue output** proportional to the generator kW-load.

	REVERSE POWER	OVER LOAD	N/A	Fail Safe	Latch	Fixed Hysteresis	Adjustable Hysteresis
R1		✓		✓	*✓		
R2	✓						✓
R3	✓				*✓		

*Only for KCW171C & KCW176A

KCW171F & KCW171HF - KCW176F & KCW176HF

Configuration: 3-Phase, 3-Wire (Bi-Polar 1)

3-wire configuration. Reverse power relay (R1) is used to trip the generator breaker. The two individual settable overload relays (R2 and R3) can be used for non-essential load release or as start signal to standby generator etc. R2 and R3 are non-latching and have a 10% fixed hysteresis.

KPW176F & KPW176HF have **analogue output** proportional to the generator kW-load.

	REVERSE POWER	OVER LOAD 1	OVER LOAD 2	Fail Safe	Latch	Fixed Hysteresis	Adjustable Hysteresis
R1	✓			✓	*✓		
R2		✓				✓	
R3			✓			✓	

*Only for KCW171F & KCW176F

KCW172A & KCW178A

Configuration: 3-Phase, 3-Wire (Bi-Polar 2)

3-wire configuration. The overload relay (R2) can be used for non-essential load release or as start signal to standby generator etc. A wide range adjustment for overload contact hysteresis can be set to enable R2 to be used for non-essential load to be reconnected or as standby generator stop signal. Reverse overload relay (R1 & R3) is reverse over load protection when generator is running as motor. Reverse power relays can be used for generator trip, local indication, alarm system etc.

KPW178A have **analogue output** proportional to the generator kW-load.

	REVERSE POWER	OVER LOAD 1	N/A	Fail Safe	Latch	Fixed Hysteresis	Adjustable Hysteresis
R1	✓						
R2		✓					
R3	✓						✓

NB! Relay range & optional slave meter is +/-100%.

KCW174C - KCW174H & KCW177A - KCW177H

Configuration: 3-Phase, 4-Wire (Bi-Polar 1)

4-wire configuration. Reverse power relay (R1) is used to trip the generator breaker. The overload relay (R2) can be used for non-essential load release or as start signal to standby generator etc. A wide range overload hysteresis can be set to enable R2 to be used for non-essential load to be reconnected or as standby generator stop signal. Relay R3 is intended for notification of a reverse power condition, or can be used for local indication, as input to an alarm system etc. R1 and R3 will latch after trip.

KPW177A & KPW177H have **analogue output** proportional to the generator kW-load.

	REVERSE POWER	OVER LOAD	N/A	Fail Safe	Latch	Fixed Hysteresis	Adjustable Hysteresis
R1	✓	✓		✓	*✓		
R2	✓						✓
R3	✓				*✓		

*Only for KCW174C & KCW177A

KCW174F & KCW174HF - KCW177F & KCW177HF

Configuration: 3-Phase, 4-Wire (Bi-Polar 1)

4-wire configuration. Reverse power relay (R1) is used to trip the generator breaker. The two individual settable overload relays (R2 and R3) can be used for non-essential load release or as start signal to standby generator etc. R2 and R3 are non-latching and have a 10% fixed hysteresis.

KPW177F & KPW177HF have **analogue output** proportional to the generator kW-load.

	REVERSE POWER	OVER LOAD 1	OVER LOAD 2	Fail Safe	Latch	Fixed Hysteresis	Adjustable Hysteresis
R1	✓			✓	*✓		
R2		✓				✓	
R3			✓			✓	

*Only for KCW174F & KCW177F

KCW175A & KCW179A

Configuration: 3-Phase, 4-Wire (Bi-Polar 1)

4-wire configuration. The overload relay (R2) can be used for non-essential load release or as start signal to standby generator etc. A wide range adjustment for overload contact hysteresis can be set to enable R2 to be used for non-essential load to be reconnected or as standby generator stop signal. Reverse overload relay (R1 & R3) is reverse over load protection when generator is running as motor. Reverse power relays can be used for generator trip, local indication, alarm system etc.

KPW179A have **analogue output** proportional to the generator kW-load.

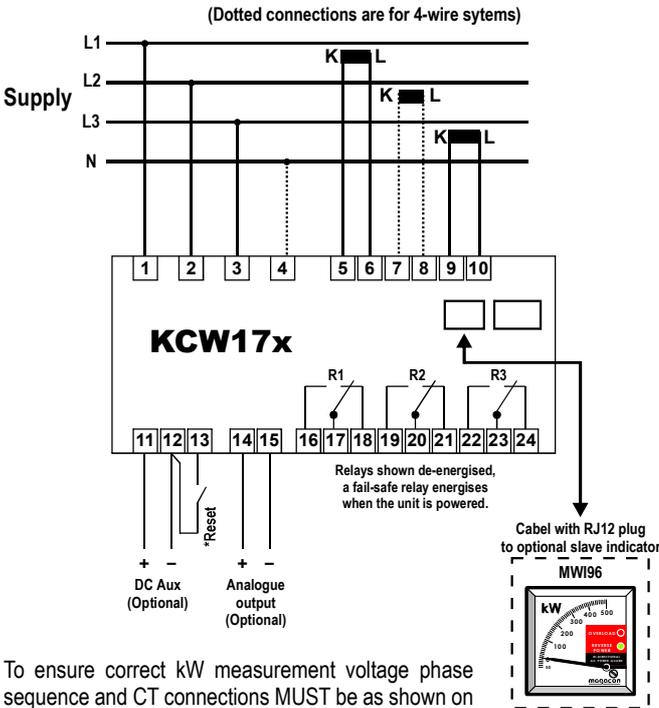
	REVERSE POWER	OVER LOAD 1	N/A	Fail Safe	Latch	Fixed Hysteresis	Adjustable Hysteresis
R1	✓						
R2		✓					✓
R3	✓						

NB! Relay range & optional slave meter is +/-100%.

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

Depending on application, select the model that matches the electrical installation. If none of the listed models fit your purpose please contact Megacon for customer adaptation.





To ensure correct kW measurement voltage phase sequence and CT connections **MUST** be as shown on connection diagram.

Analogue Output

KCW176A, KCW176H, KCW176F, KCW176HF, KCW178A, KCW177A, KCW177H, KCW177F, KCW177HF and KCW179A have an analogue output proportional to kW-meter reading. The signal is specifically intended as input to a control system for kW monitoring, load sharing, load shedding etc.

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

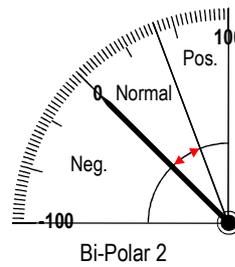
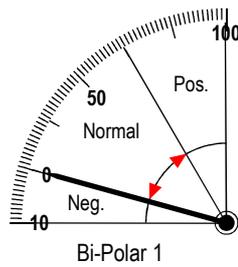
O/P1	0 - 10mA	O/P6	-10 - 0 - +10mA
O/P2	0 - 20mA	O/P7	-20 - 0 - +20mA
O/P3	4 - 20mA	O/P8	0 - 10V
O/P4	4 - 12 - 20mA	O/P9	0,2 - 10V
O/P5	4 - 5,45 - 20mA	O/P10	4,3 - 20mA

*Relay Reset

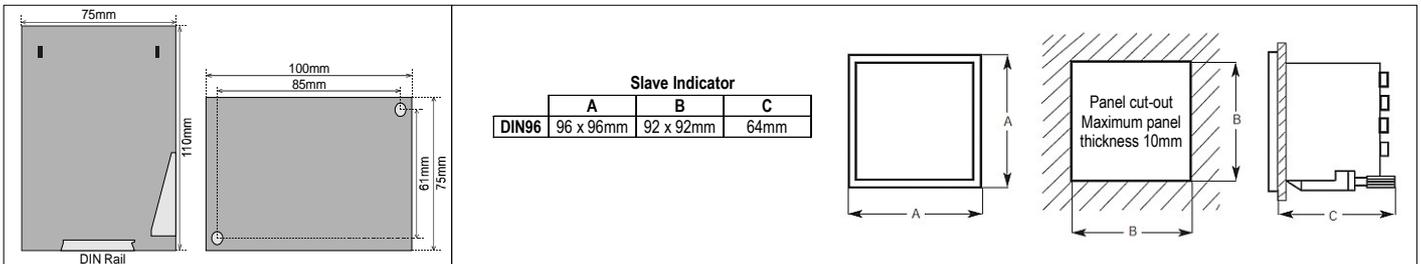
Any latched relay is reset by linking terminals 12 and 13 or by interrupting voltage input to terminal 1.

Relay Configurations

The relay operation is delayed in the arrow direction, the reset is instantaneous. Both trip levels can, independently, individually set over the scale range (0-100% FSD). The Bi-Polar version is available with 10% or 100% negative scale, 10% is the standard.



Dimensions



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

ORDERING EXAMPLE:

Type: KCW176A
 Aux. Supply: 200-240V
 Input Voltage: 690/230V
 Input Current: 1500/5A
 Range: -150/0/+1500kW
 Analogue O/P: 4/5,45/20mA

