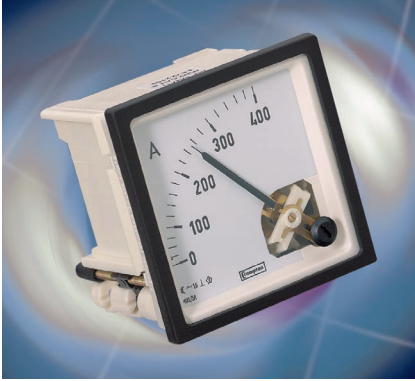


Generator Set One Stop Solutions provide a complete engine monitoring, control, protection and management package. Specifically designed to provide a cost effective solution for generator set manufacturers, these high quality products provide reliable, safe and efficient operation of expensive power assets.

The typical generator set one stop solution comprises 3 ammeters, voltmeter, combined RPM frequency meter, hours run meter, a key-start controller, 3 current transformers and a selector switch. The one stop solution offers variants of each product, to suit a wide range of generator set applications.



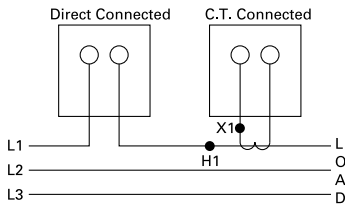
### 3 x 72mm DIN Case Ammeters

Moving iron AC ammeters providing true RMS measurement of current for each of the three phases. They are powered from a 5 Amp secondary current transformer and have a slide-in dial, scaled to suit primary value.

#### Specification

Accuracy:	Class 1.5
Frequency	50 / 60Hz
Burden at 50Hz	0.5VA
Ratings:	40 – 1600A CT operated Maximum system voltage 720V AC
Operating Temperature:	-20°C to + 60°C
Mounting Installation:	Two corner fixing swivel clamps
Enclosure:	Flame retardant polycarbonate with glass window
Dimensions:	72mm x 72mm
Panel Cut Out:	68mm x 68mm
Compliant With:	LVD and EMC
IP Protection:	Standard: IP52 Option: IP54 to panel with gasket supplied

#### Connections



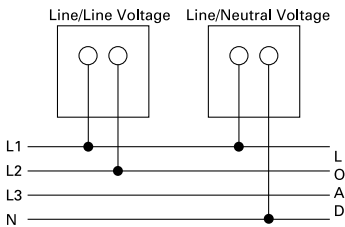
### 1 x 72mm DIN Case Voltmeter

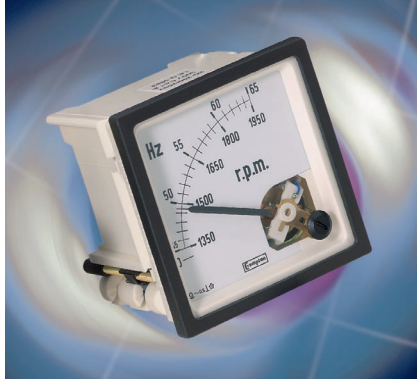
Moving iron AC voltmeter providing true RMS measurement of phase-to-phase or phase-to-neutral voltages via a selector switch. It can also be configured to and scaled for use with voltage transformers.

#### Specification

Accuracy:	Class 1.5
Frequency	50 / 60Hz
Burden at 50Hz	Up to 4.5VA Max
Ratings:	0-150V, 0-300V or 0 -500V
Operating Temperature:	-20°C to + 60°C
Mounting Installation:	Two corner fixing swivel clamps
Enclosure:	Flame retardant polycarbonate with glass window
Dimensions:	72mm x 72mm
Panel Cut Out:	68m x 68mm
Compliant With:	LVD and EMC
IP Protection:	Standard: IP52 Option: IP54 to panel with gasket supplied

#### Connections





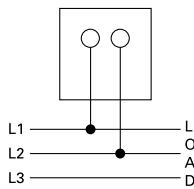
## 1 x 72mm DIN Case Frequency Meter with RPM Scaling

Utilizing an integral electronic converter and a moving coil indicator, this combined RPM frequency meter measures both system frequency and engine speed, and is scaled for 50Hz and 60Hz operation.

### Specification

Accuracy:	Class 0.5
Input Voltage:	100/125V or 200/250V
Frequency 0.5%:	45/65Hz
Burden:	4VA maximum
AC Ratings:	110V -125V, 200V-250V, 380V-440V
Operating Temperature:	-20°C to + 60°C
Mounting Installation:	Two corner fixing swivel clamps
Enclosure:	Flame retardant polycarbonate with glass window
Dimensions:	72mm x 72mm
Panel Cut Out:	68mm x 68mm
Compliant With:	LVD and EMC
IP Protection:	Standard: IP52 Option: IP54 to panel with gasket supplied

### Connections



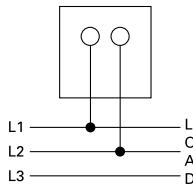
## 1 x 48mm DIN Case Hours Run Meter

Ideally suited for scheduled maintenance applications and for generator sets under hire. The hours run meter provides accurate measurement of actual hours run.

### Specification

Voltage:	115 or 230V AC tolerance $\pm 10\%$
Input Voltage:	100/125V or 200/250V
Frequency	50 or 60Hz
Counter Range:	99999.99 h
Operating Temperature:	-20°C to + 70°C
Mounting Installation:	Fixing bracket
Enclosure:	Flame retardant polycarbonate
Dimensions:	48mm x 48mm
Panel Cut Out:	45.2mm x 45.2mm
Compliant With:	LVD and EMC
IP Protection:	IP65

### Connections





## 1 x 72mm DIN Case Generator Set Controller

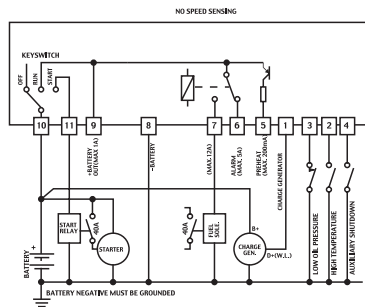
This manual engine start unit is designed to start and stop the engine, and provides automatic shutdown on detection of a fault condition. LED indicators and alarms provide engine status information.

### Specification

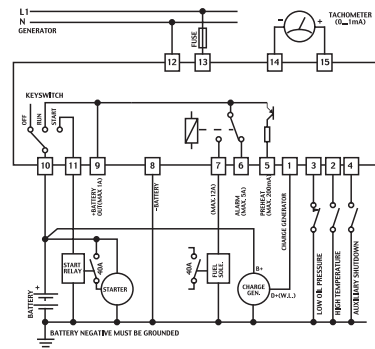
DC Supply Range:	8 to 32V DC
Cranking Dropouts:	DC supply can be 0V for 100ms
Generator Voltage Input:	30 to 350V L-N AC RMS
Generator Speed Measurement:	From generator output or magnetic pickup
Generator Frequency Input:	10 to 110Hz
Magnetic Pickup Input Range:	3 to 35V peak continuously
Magnetic Pickup Input Frequency:	35 Hz to 10k Hz
Start Relay Output:	12 Amp DC at supply voltage
Fuel Relay Output:	12 Amp DC at supply voltage
Alarm Relay Output:	5 Amp DC at supply voltage
Preheat Relay Output:	200mA DC transistor output
Tachometer Analog Output:	0 to 1mA DC
Alarm Duration:	Continuous
Preheat Duration:	10 seconds
Protection Delay:	20 seconds
Overspeed Shutdown Setting:	10 – 110Hz selectable
Analog Calibration:	Adjustable
Indicator Display:	Annunciators
Operating Temperature:	-20°C to + 70°C
Storage Temperature:	-40°C to + 85°C
Mounting Installation:	Front panel mounted with rear retaining clips
Dimensions:	72mm x 72mm x 107mm deep
Panel Cut Out:	69mm high x 69mm wide
Compliant With:	LVD and EMC
IP Protection:	IP30 at front, IP20 at rear

### Connections

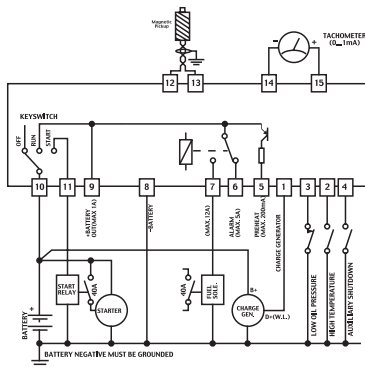
#### Basic Unit



#### Speed sensing from Generator Voltage



#### Speed Sensing from Magnetic Pickup





## 3 x Molded Case Measuring Current Transformers

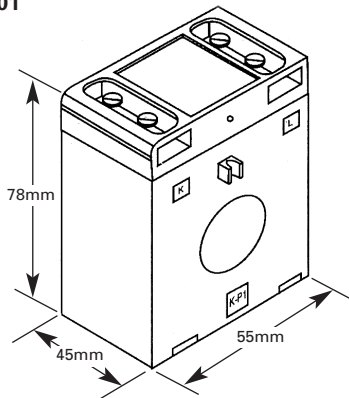
These high quality moulded case current transformers provide a 5 amp secondary current when mounted in each primary current phase. 50mm, 55mm and 85mm case sizes provide a comprehensive range of aperture sizes with mounting hardware to suit most applications.

### Specification

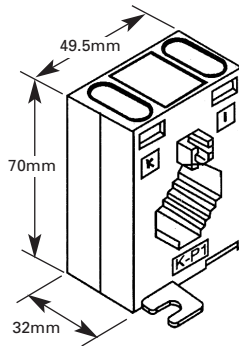
System Voltage:	720V Maximum
Test Voltage:	3kV for 1 minute
System Frequency:	50Hz or 60Hz.
Primary Ratings:	See individual product details
Secondary Outputs:	5A is standard, 1A on request
Short Circuit Thermal:	3kA for 1 second
Overload Withstand:	1.2 times rated current continuously
Rated Dynamic Current	7.5kA for 1 second
Saturation coefficient:	<6
Insulation Class BS2757 IEC85:	Class E
Secondary Terminals:	M5 Screw clamps
Service Temperature:	-20°C to +70°C
Humidity:	Up to 95% RH (non condensing)
Enclosure:	Flame retardant glass filled ABS
Compliant With:	VDE404 and IEC185
Mounting Hardware:	Feet and busbar screws

### Dimensions

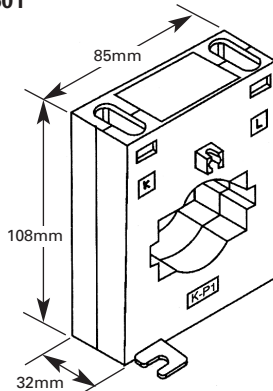
#### PE201



#### PE301



#### PE601



### Case Sizes and Apertures

PE201 Case Size:	55mm wide x 45mm deep x 78mm high
PE201 Aperture:	20mm diameter
PE301 Case size:	50mm wide x 32mm deep x 70mm high
PE301 Aperture:	30mm x 10mm, 25mm x 15mm, 20mm x 20mm horizontal and vertical
PE601 Case Size:	85mm wide x 32mm deep x 108mm high
PE601 Aperture:	60mm x 10mm, 50mm x 30mm & 45mm diameter

### Ratings

55mm PE201 Series			50mm PE301 Series			85mm PE601 Series			
RATIO RANGE	VA at CI 3	VA at CI 1	RATIO RANGE	VA at CI 3	VA at CI 1	RATIO RANGE	VA at CI 3	VA at CI1	VA at CI 0.5
30/5	1.5		75/5	1		400/5	15	10	
40/5	1.5		80/5	1		500/5	15	10	
50/5		1.5	100/5		1	600/5		15	10
60/5		1.5	125/5		1	750/5		15	10
80/5		4	150/5	2.5	1	800/5		15	10
100/5		4	200/5	5	2.5	1000/5		15	10
200/5		8	250/5	5	2.5	1200/5			15
250/5		10	300/5	5	2.5	1250/5			15
			400/5	7.5	5	1500/5			15
			500/5	7.5	5	1600/5			15
			600/5	7.5	5				



## 1 x 48mm DIN Case Selector Switch

Panel mounted selector switches offer a 7-position voltmeter switch and a 4-position ammeter switch, for the reading of line to line or line to neutral voltage and phase current. Each switch can be supplied with either numbered or colored annotation of phase.

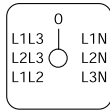
### Specification

Loading Capacity:	SO1 & SO2: 20A, 500V    SO3: 12A/480V
Switching Capacity:	3kW at 220V, 5kW at 380V, 5.5kW at 500V
Isolating Voltage:	SO1 & SO2: 500V AC    SO3: 480V AC
Operating Temperature:	-20°C to + 70°C
Mounting Installation:	Two point front fixing
Dimensions:	48mm x 48mm
Panel Cut Out:	3 drilled holes
Compliant With:	LVD and EMC
IP Protection:	SO1 & SO2: IP65    SO3: IP54

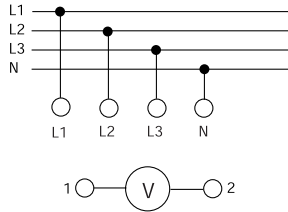
### Connections

#### Voltmeter-change-over switches

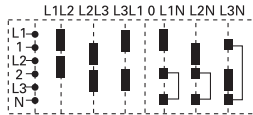
To measure 3 interconnected voltages and 3 phase voltage against N



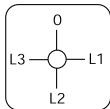
#### SO1 & SO2



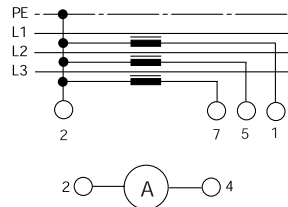
#### SO3



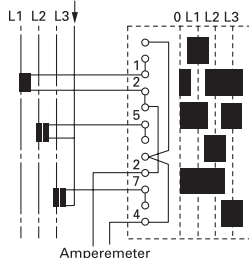
#### Ammeter-change-over switches



#### SO1 & SO2

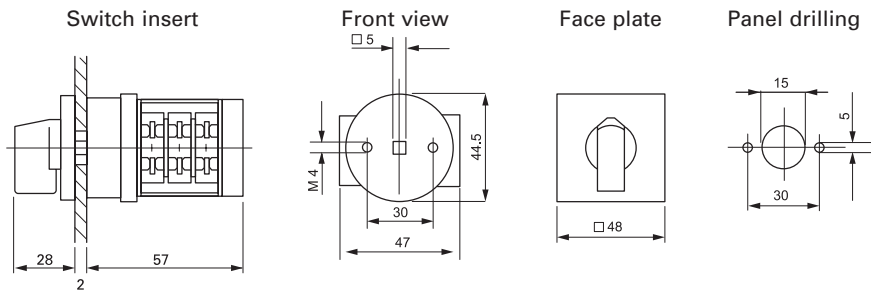


#### SO3

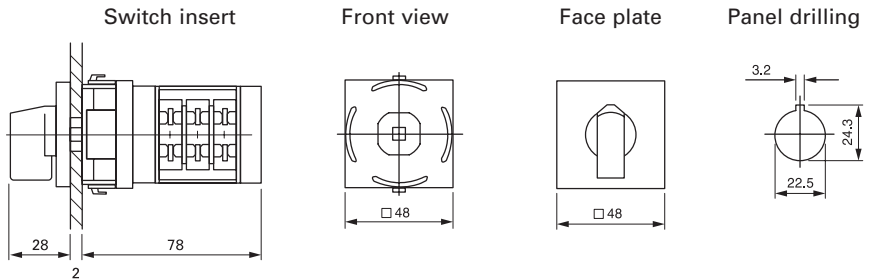


### Dimensions

#### SO1 Three Hole Fixing 20 Amp



#### SO2 Single Hole Fixing 20 Amp



#### SO3 Three Hole Fixing 12 Amp





## One Stop Solution Product Codes

<b>Ammeters</b>	
A-72-add suffix:	Add suffix to depict required scaleplate: 40/5, 60/5, 100/5, 150/5, 200/5, 250/5, 300/5, 400/5 or 600/5 → 1600/5
<b>Voltmeters</b>	
V-72-MI-150:	Direct connected 0 – 150V
V-72-MI-300:	Direct connected 0 – 300V
V-72-MI-500:	Direct connected 0 – 500V
<b>RPM Frequency Meters</b>	
F-72-50Hz-110V:	Scaled 45/65Hz. Input 100/125V
F-72-50Hz-240V:	Scaled 45/65Hz. Input 200/250V
F-72-50HZ-400V:	Scaled 45/65Hz. Input 380/440V
<b>Hours Run Meters</b>	
H-72-110V:	Input 100/125V
H-72-240V:	Input 200/250V
<b>Generator Set Controller</b>	
KEY-START:	Standard Unit
KEY-START-ALT:	Standard Unit with Speed Sensing from Generator Voltage
KEY-START-MAG:	Standard Unit with Speed Sensing from Magnetic Pickup
<b>Molded Case Current Transformers</b>	
PE201-add suffix:	55mm case size. Add suffix to depict required ratio range: 30/5, 40/5, 50/5, 60/5, 80/5, 100/5, 200/5, 250/5
PE301-add suffix:	50mm case size. Add suffix to depict required ratio range: 75/5, 80/5, 100/5, 125/5, 150/5, 200/5, 250/5, 300/5, 400/5, 500/5, 600/5
PE601-add suffix:	85mm case size. Add suffix to depict required ratio range: 400/5, 500/5, 600/5, 750/5, 800/5, 1000/5, 1200/5, 1250/5, 1500/5, 1600/5
<b>Selector Switches</b>	
<b>S01 Three Hole Fixing 20A</b>	
S01-SAB	4-position ammeter switch, L1-L2-L3-0
S01-SAA	4-position ammeter switch, R-Y-B-O
S01-SVE	7-position voltmeter switch, RY-YB-RB-0-RN-YN-BN
S01-SVD	7-position voltmeter switch, L1L2-L2L3-L3L1-0-L1N-L2N-L3N
<b>S02 Single Hole Mount 20A</b>	
S02-SAB	4-position ammeter switch, L1-L2-L3-0
S02-SAA	4-position ammeter switch, R-Y-B-O
S02-SVE	7-position voltmeter switch, RY-YB-RB-0-RN-YN-BN
S02-SVD	7-position voltmeter switch, L1L2-L2L3-L3L1-0-L1N-L2N-L3N
<b>S03 Three Hole Fixing 12A</b>	
S03-SAB	4-position ammeter switch, L1-L2-L3-0
S03-SVD	7-position voltmeter switch, L1L2-L2L3-L3L1-0-L1N-L2N-L3N