Energy Division

Crompton Instruments SWITCH–ATS

Automatic Transfer Switch (72mm x 72mm)

The SWITCH-ATS is designed to monitor the incoming AC mains signal for three phase and single phase applications. In the event of a mains voltage failure of any phase, the remote start relay output is energized and the unit automatically transfers the load from the mains to the generator. Microprocessor technology allows exact measurement, set point adjustment and timing functions with the parameters to be simply programmed and displayed from the front panel.

Operation Sequence

The SWITCH-ATS automatic transfer switch detects failure of any phase of the mains supply. If at least one of the mains phase voltages exceeds the upper (P03) or lower (P02) Limits the unit operates as follows:-

- The mains voltage led turns from green to red in-conjunction the mains contactor output is de-energised.
- The generator start module receives a signal after the remote start parameter (P07) has expired, which then initiates the engine start.

Type Parameter (P00) is selected as 0 (Type-1)

- When the generator voltage is within the set limits (P09) & (P10), the yellow generator running led will illuminate. The unit will allow the generating set to run without load until the engine heating period parameter has expired (P08). After timeout the generator contactor closed led will start to flash and the unit will wait for the generator contactor delay parameter (P05).

Type Parameter (P00) is selected as 1 (Type-2)

- When the engine running signal is present (Terminal 10), the yellow generator running led will illuminate. The unit will allow the generating set to run without load until the load generator input signal is present (Terminal 11). When signal present the yellow generator contactor closed led will flash and the unit will wait for the generator contactor delay parameter (P05).
- The generator contactor output will be energised and the yellow generator contactor closed led will be illuminated.
- If all of the mains phase voltages return within the upper (P01) and lower (P03) limits, the mains voltage led will turn from red to green but the units will wait for the mains return delay parameter (P04) for stabilization.
- When the mains return delay parameter has expired (P04), the yellow generator contactor closed led is extinguished and the generator contactor output is de-energised. Then the green mains contactor closed led will flash, but the unit will wait for the mains contactor delay parameter (P06) to expire before switching.
- After the mains contactor delay parameter has expired (P06), the green mains contactor closed led will illuminate and the mains contactor output is energised. Then the remote start output is de-energised.
- The unit is ready for a new mains failure

Display
10mm red 4-digit LED display showing
Mains voltage (phase – phase and phase – neutral)
Alternator voltage
Program parameters

Status LED indicators
TEST mode LED
PROG mode LED
Mains voltage LED
Generator running LED Yellow
Mains contactor closed LED
Generator contactor LED yellow

Supply
Supply voltage: 8-32V ⎓
Operating current is 240mA

Conditions and physical specifications
Operating temperature: -25 to +70°C
Humidity: 0 to 90% (non-condensing)
Protection class: IP65 to front panel, IP20 to rear
Weight: 0.27Kg
Dimension: 72x72mm
Depth: 83.5mm
Panel Cut-out: 69x69mm

Specifications
Accuracy
Mains voltage 3 1% FS
Generator voltage 3 1% FS

Measuring range:
Mains voltage 35-300V~ (Ph-N)
Generator voltage 35-300V~ (Ph-N)
Frequency: 15.6-99.9Hz

Contact sensing inputs:
Load generator signal (NO)
Engine running signal (NO)

Relay outputs
Remote start relay (1NO+1NC. 12A@32V⎓)
Mains contact relay (1NC. 5A@250V~)
Generator contactor relay
(1NO. 5A@250V~)

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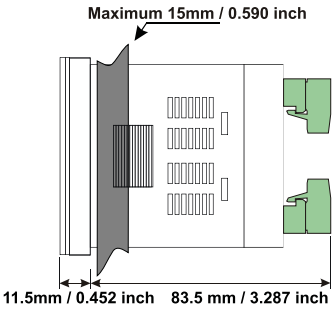
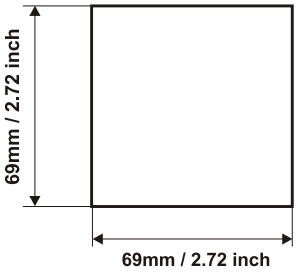
Dimensions





Type - 1 (P00 = 0): Generator Voltage Parameters List

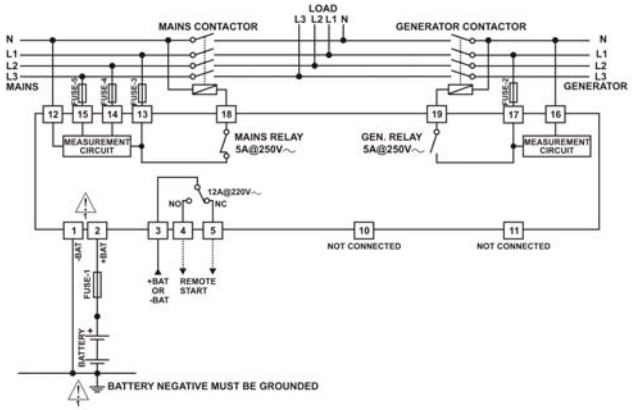
No	Definition of Parameter	Min	Max	Default	Unit
P00	Unit Usage Type	0	1	0	
P01	Mains Voltage Connection Level	60	600	320	V-
P02	Mains Voltage Disconnection Level	60	600	320	V-
P03	Mains Voltage Upper Limit	60	600	440	V-
P04	Mains Return Delay	0	9999	30	sec
P05	Generator Contactor Delay	0.1	25.0	1.0	sec
P06	Mains Contactor Delay	0.1	25.0	1.0	sec
P07	Remote Start Delay	0	9999	0	sec
P08	Engine Heating Period	0	250	10	sec
P09	Alternator Voltage Lower Limit	60	600	320	V-
P10	Alternator Voltage Upper Limit	60	600	440	V-
P11	Password	0	9999	0	

Type - 2 (P00 = 0): Load Generator Logic Input Parameters List

No	Definition of Parameter	Min	Max	Default	Unit
P00	Unit Usage Type	0	1	0	
P01	Mains Voltage Connection Level	60	600	320	V-
P02	Mains Voltage Disconnection Level	60	600	320	V-
P03	Mains Voltage Upper Limit	60	600	440	V-
P04	Mains Return Delay	0	9999	30	sec
P05	Generator Contactor Delay	0.1	25.0	1.0	sec
P06	Mains Contactor Delay	0.1	25.0	1.0	sec
P07	Remote Start Delay	0	9999	0	sec
P11	Password	0	9999	0	

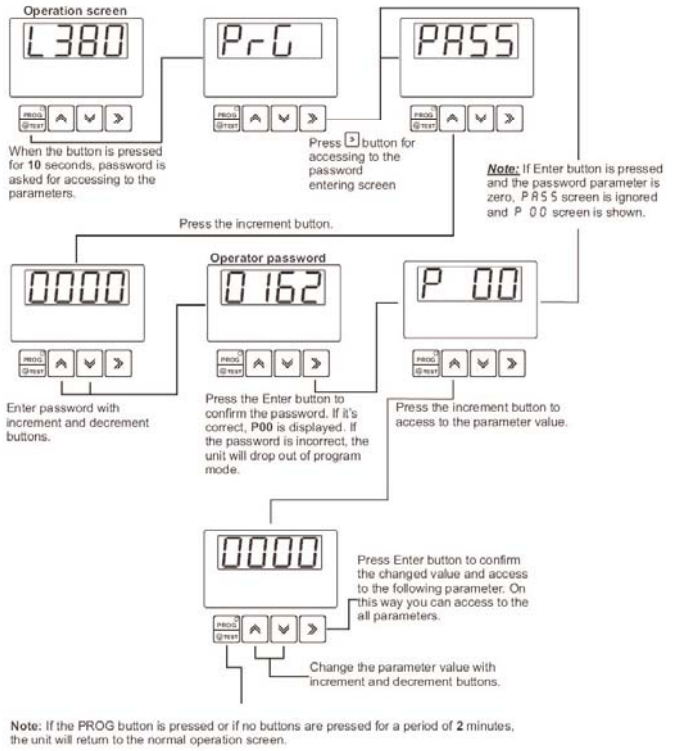
Three Phase Connection Schematic

NOTE: If single phase sensing is required the single phase can be fed into all three phase inputs.



Easy Access Diagram to Programming Parameters

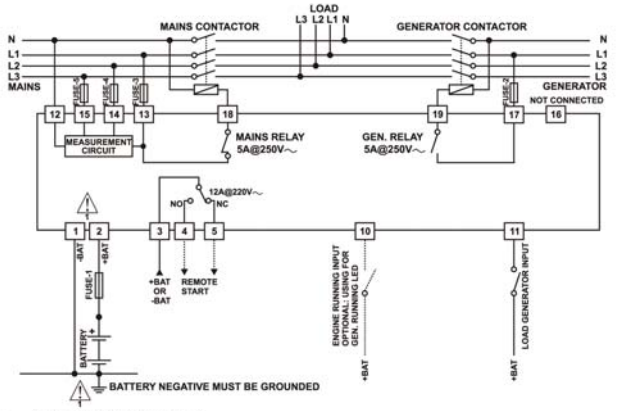
The Programming mode must be entered only while the mains voltage okay and the load supplied from mains. It is your responsibility if this equipment is used in a manner not specified in this instruction manual.



Note: If the PROG button is pressed or if no buttons are pressed for a period of 2 minutes, the unit will return to the normal operation screen.

Three Phase Connection Schematic

NOTE: If single phase sensing is required the single phase can be fed into all three phase inputs.



The fuses should be as follows:
FUSE-1 1A. T
FUSE-2, FUSE-3 1A. T
FUSE-4, FUSE-5 1A. T

1- Connect the unit as shown in the appropriate diagram above. Be sure to connect the battery supply the right way round and battery negative should be grounded. The connectors can be unplugged from the rear of the unit to facilitate connection.

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