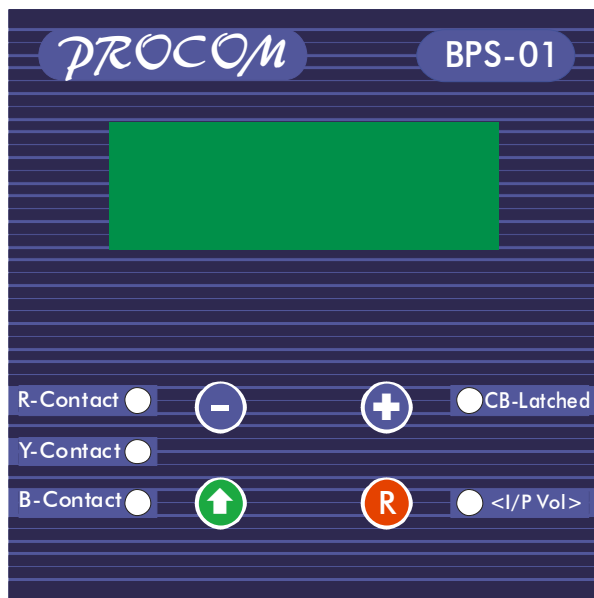




OPERATING INSTRUCTION: BPS-01
Healthy Phase Selector with Contactor Anti-latching



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1.1 Introduction

- The Microprocessor / microcontroller based BPS-01 automatic healthy phase selector is designed for ease of operation.
- Housed in 96 x 96 flush mounted enclosure.

1.2 Salient features of the BPS-01

- Automatically selects the healthy phases in 3 Phase 4 Wire system
- Programmable input voltage range.
- Programmable under/over voltage setting for input with programmable time delay.
- Programmable, separate, under and over Hysteresis settings
- True RMS measurement with better than 1% accuracy of reading.
- Wide range of voltage input and measurement

1.2.1 Measurement & Display.

BPS-01, equipped with Alfa Numeric LCD Display to display

- Input Voltage for R, Y & B Phases
- Output Voltage
- Programming Parameters

1.2.2 LED Indication

- Current Phase Selected
- Input Voltage Outside the Limits
- Contactor Latched

1.2.3 Timers

Following timers are incorporated in the BPS-01

- Contactor Change over Delay timer
- Hooter Timer (Fixed 30 Sec)

1.3 Function:

BPS-01 monitors the input line voltage for their healthiness. In case of the current selected line voltage is outside the set limit of under/over, BPS-01 will select the next healthy line. For the selection of next healthy phase, the phase voltage has to be greater than programmed under voltage plus under voltage hysteresis and lesser than the programmed over voltage minus the over voltage hysteresis. This is done to avoid the chattering of the contactors due to voltage drop/rise when the load is connected. A resistive/resistance load will have a tendency to drop the line voltage where as a capacitive load will raise the line voltage. In case none of the phases meet the above criteria, the load is disconnected and <I/P Vol> Led blinks, indicating that all the phases are outside the limits sets. In case more than 1 phase meet the above criteria the controller finds the phase whose voltage deviates minimum from the average of the programmed under and over voltage limits and selects that phase. Before connecting the contactor of that phase the controller checks that the output voltage has fallen to zero, there by indicating that the earlier contact has been released and there is no latching of the contacts. In case of the previous contact latching the Led” CB Latched” blinks and the unit stops functioning till the fault is cleared and the Rest Key is pressed. The CB Latched fault is announced by a Hooter, which announces this for 30Sec and can be stopped by pressing the Reset Key.

1.4 Display:

The controller is equipped with 16X2 Alphanumeric LCD Display.

In Normal operation it displays the output voltage. All three phases voltages can be displayed by pressing **↑**(Next) Key. The unit after 10 Sec will revert back to the output voltage display, if Next key is pressed not during this time. When the input voltages are outside the limit the display will display all the phase voltages.

In programming mode the display will display the parameter under programming and its value.

1.5 Programming mode:

Programming mode can be entered any time by simultaneously pressing Rest(R) and Next(**↑**)keys. The upper row of LCD will display the parameter under programming and the lower row shall display its value. The parameter value can be incremented /decremented by **+** & **-** keys. The following table details the various programmable parameters:

1.5.1 Setting table

Sl. No	Display	Explanation of parameter	Factory setting	Setting Range
1	Max Ouput Vol	Max. permissible voltage, above this the voltage is treated unhealthy	240V	80-300 V
2	Min Output Vol	Min. permissible voltage, below this the voltage is treated unhealthy	200V	80-300 V
3	Hys for O/V	The Over voltage Hysteresis.	5V	0-35V
4	Hys for U/V	The Under voltage Hysteresis.	5V	0-35V
5	Contact Change T	The delay between the contactor opening and next contactor closing.	0Sec	0-100Sec

1.6 Annunciations LED's Functions:

S, No.	LED Nomenclature	Description
1	R Contact	R Phase contactor is on
2	Y Contact	Y Phase contactor is on
3	B Contact	B Phase contactor is on
4	<I/P Vol>	All the phase voltages are outside the limit
5	CB-Latched	Contactor is latched

1.7 Switches Description:

S.No.	Switch Symbol	Switch Function	Description
1	↑	Next	Normal operation mode: In this mode this is used to diplay output voltage or all the phase voltages. Programming Mode: Next key is used to select the next parameter to be programmed.
2	+	Increment	This key is only active during programming mode and is used to increment the value of the parameter under programming.
3	-	Decrement	This key is only active during programming mode and is used to decrement the value of the parameter under programming.
4	R	Reset	To rest the hooter or Contactor Latched fault
5	↑ & R	Programming Mode Entry	If both the keys are pressed simultaneously the unit will enter in programming mode.

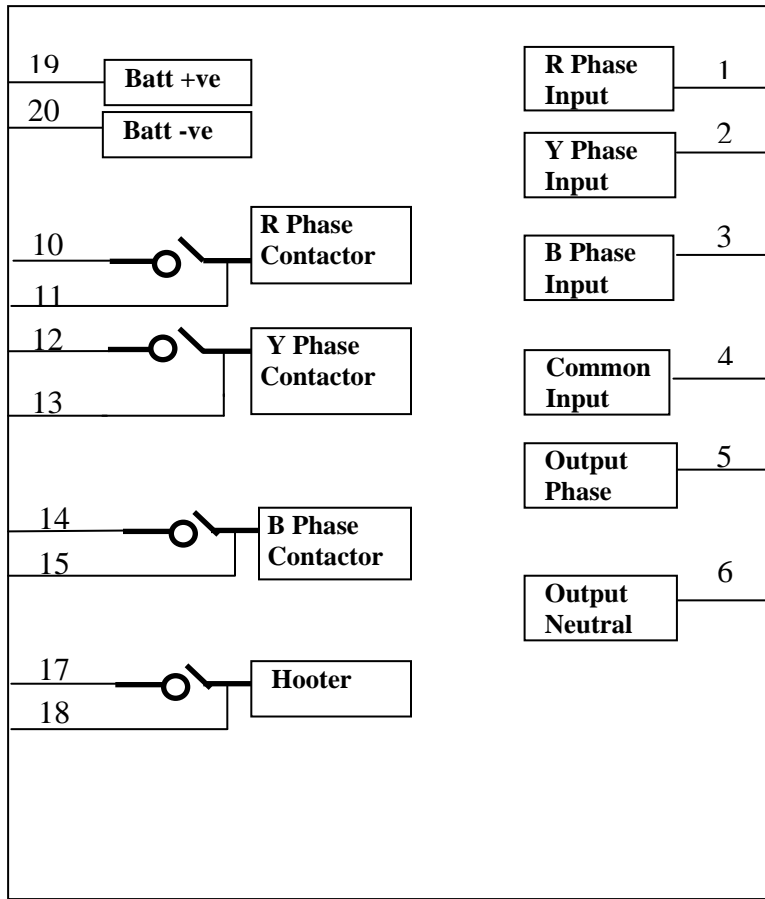
1.8 Output Contacts:

All contacts are Normally open (NO)

1.9 Specifications

AC voltage withstand	600 VAC
Measurement Accuracy	1%
Surge 1.2/50Usec	2.5KVz
Battery Voltage	Suitable for 12V/24 VDC System
Max. Battery Voltage	35V
Out Put Contact	5 NO
Contact Rating	230V @6A or 440V@2A
Cut out Dimensions	96mm X 96mm
Depth	120mm

1.10 Connections Diagram



It is our endeavour to constantly upgrade our products, hence specifications are subject to change without any notice.