DATA SHEET – Process Automation – Battery Charger

Subject to change without notice

IPS-BC-140W/TC

Industrial Power Supply / Battery Charger 5Amp with Input Cover

GENERAL DESCRIPTION

The IPS-BC-140W is a uniquely designed combined industrial power supply / battery charger, purpose built to supply instrument installations with both 12v and 24v requirements and sealed lead-acid backup batteries.
To comply with the requirements of EN61000-3-2 for electronic equipment consuming more than 75W, the input stage is Power Factor Corrected.
The IPS-BC-140W may be operated without batteries, in which case the 12V and 24V outputs will approach 13.8V and 27.6V respectively.
When the IPS-BC-140W is operated as a battery charger the unique control circuitry prevents either battery being overcharged (boiled). This unique feature can either sink or source current, rising or falling automatically depending upon the state of charge of either battery.
In the event of loss of ACV, or an internal fault an alarm contact will close.

FEATURES

- Power Factor Correcting (automatic)
- Auto disconnect on reverse battery volts
- Voltage measurement nominally 0.3%
- Current Limited Outputs
- Designed to provide 140Watts @ 70deg C
- Plug Off Terminals with engraved numbers
- Output Healthy LED's (ACV, DCV, F1, F2, ALARM,TEST)
- Complies with EN61000
- Remote Test Input with Contact output (Forces a low VDC to test battery condition)
- Supply Loss Alarm Output
- C-TICK / CE Markings
- (Independently Tested to & Passed CSPIR 11)

Technical Specification

Power Supply (Input)	85 – 265VAC /120 - 390VDC
Frequency	40 - 60Hz
Power	< 175VA

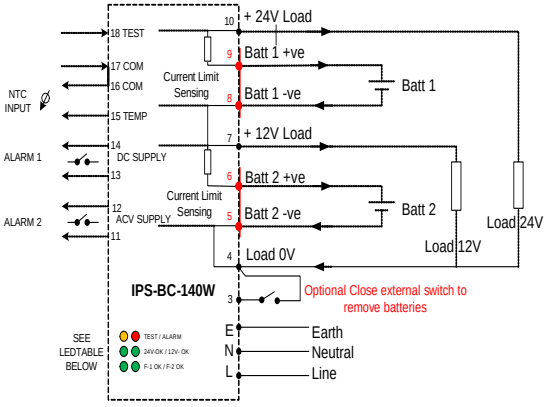
Power Factor correcting, controlled Start-Up Input Stage (Designed to requirements of EN61000-3-2).
Two Stage EMI line filter and transient protection is standard.

Inputs
1. The test input switches load to the batteries, by monitoring the battery voltage the health of batteries can be determined.
2. An NTC with lead is included to allow for Battery Temperature Monitoring

Outputs (Operated as Power Supply)	
Output 1 (< 3 amps)	27.6V nominal (no Battery)
Output 2 (< 3 amps)	13.8V nominal (no Battery)
Combined Ave Output	≤ 140W at 70C (99% DF)
Combined Peak Output	≤ 165W (3secs. & 1% DF)
Outputs (Operated as Battery Charger)	
Battery '1'	Limited to 13.8V nominal
Battery '2'	Limited to 13.8V nominal
Charge Temp. Coeff.	-4mV/C per cell.
Charge Current:	2.5A nominal
(suitable for from 7AH to 24AH batteries).	
Deep discharge	Automatic load disconnect.

Alarm Outputs 1Amp (dry contact N.O. with no power on)
AL1 = Battery or Internal Fault
AL2 = Supply Failure

The unique charger design prevents boiling of batteries under nearly all conditions.

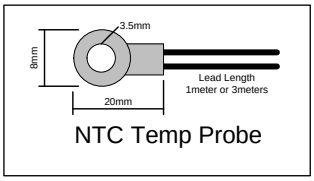


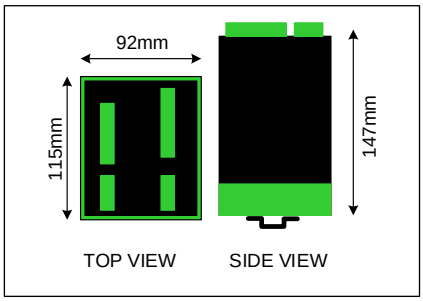
GENERAL SPECIFICATION

Efficiency	80% -95%
PFC (required)	to EN61000-3-2.
Emissions	to EN61000-4-6
Immunity ESD	to EN61000-4-2
Immunity RF fields	to EN61000-4-3
Isolation (Input/Output)	4kV rms (VDE 0550 andBS4 15 Class 2)
Operating Temp	0 to 70 Deg C
Storage Temp	-25 to 85 Deg C
Reliability (estimated)	50,000 hours at 25C as per MIL-HDBK-217 or equiv.
Mounting Style	DIN mount
Terminals	Self-opening 5mm/12AWG (plug on/off)
Housing Material	Mild Steel & Polycarbonate
Ventilation	Natural
Dimensions	92mmX115mmX147mm (W x D x H)
Weight	1.0 kg

NEW FEATURE – Battery change-over.

1. Prepare the replacement battery
2. Press the Battery disconnect pushbutton OR bridge terminals 3 and 4.
3. AMBER LED flashes during timing cycle - approx. 2-3 minutes
4. Replace the battery ensuring correct polarity whilst the AMBER LED flashes.





DESIGNED & MANUFACTURED by: Transtech Electronic Controls Pty Ltd Perth W.A. ABN: 21 070 629 499
Design changes may occur in the interests of product performance & development **E&OE**

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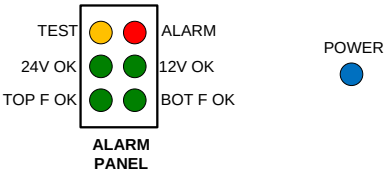
AUSTRALIAN MADE



LED	NORMAL	FAULT/ALARM
TEST	LED = **off** (normal)	LED = on (test input active)
ALARM	LED = **off** (all OK)	LED = **on** (If either battery is flat or reverese connected or Fuses blown)
24V OK	LED = **on** (all OK)	LED = **off** (Internal fault)
12V OK	LED = **on** (all OK)	LED = **off** (Internal fault or Test input active)
TOP F OK	LED = **on** (all OK)	LED = **off** (Top / 24VFuse blown)
BOT F OK	LED = **on** (all OK)	LED = **off** (Bottom / 12V Fuse blown)
NO SUPPLY	24V, 12V and Blue Supply LED = **off**	

ALARM 1 & 2 = normally open contacts (close when power is applied to the IPS-BC-140W)

ALARM 1	Contact opens when TEST input is closed **and** either battery is flat or reverese connected or either fuse is blown)
ALARM 2	Contact opens only if power is lost to the IPS-BC-140W

LED LEGEND
(shows input conditions)

CALIBRATION & SET-UP INSTRUCTIONS:-

1. The unique design is for 2 x 12VDC Sealed Lead Acid batteries, each charged and monitored independently, regardless of their condition or status.
2. Either battery A or battery B may be removed without affecting the charging of the remaining battery.
(ALL disconnections/reconnections, as a precaution, should be done with POWER OFF). With one of the 12VDC Batteries removed the IPS-BC-140W can still deliver 3 Amps at 12VDC for the Radio Modem.
3. Temperature compensation for the batteries is external and included with all IPS-BC-140W units (standard 1 meter leads).Longer leads can be provided.
4. To tie the battery negative to Earth make this connection at
"Load 0V" (term 4) only.

POWER UP (INITIAL or RESET FUNCTION):-

1. Complete the wiring connections to the load and the batteries.
2. Connect or close the DC load and the batteries.
3. Allow a few seconds for the IPS-BC-140W to "auto-connect" the load to the batteries.
4. Apply the AC Power (avoid turning the IPS-BC-140W off then on, always wait a few seconds)

REMOVAL or REPLACEMENT OF THE IPS-BC-140W:-

5. Turn OFF AC Power (do not turn the IPS-BC-140W off then on, always wait a few seconds).
6. Disconnect the DC Load and the batteries externally.
7. Unplug the terminals on the IPS-BC-140W
8. Replace the IPS-BC-140W
9. Plug the terminals back on the IPS-BC-140W
10. Reconnect or close the DC Load and then reconnect/close to the Batteries
11. Allow a few seconds for the IPS-BC-140W to "auto-connect" the load to the batteries.
12. Apply the AC Power (avoid turning the IPS-BC-140W off then on, always wait a few seconds)

Please ensure that **Batteries** are connected to **Battery Terminals** and **Loads** are connected to **Load terminals**.