

## ICT STANDARD DUAL BUS DISTRIBUTION PANELS

The ICT Dual Bus Distribution Panel provides two 100A (peak) bus inputs with six independent output channels per bus in a compact 1U high chassis for 19 inch rack mounting. Over current protection for each output is available on the front panel in two configurations; with 80VDC rated blade style fuses, or with 65VDC user insertable magnetic-hydraulic circuit breakers.

Each bus can accommodate a supply voltage from 10VDC to 60VDC, either positive or negative polarity, with a peak input current of 100A to be distributed at 25A maximum on each of the 6 output channels. Each channel has independent over current protection.

Fuse status is displayed by an LED indicator located over each fuse, while breaker trip status is indicated locally by the rocker handle position. Form-C alarm output contacts (C/NO/NC) are provided on the back panel for each bus to indicate that a channel fuse or breaker has opened.

Model Numbers: (covered in this manual)

**ICT200DF-12** Standard Dual 100A Bus Fuse Distribution Panel for +/- 12, 24 or 48VDC

**ICT200DB-12** Standard Dual 100A Bus Breaker Distribution Panel for +/-12, 24 or 48VDC

### **WARNING**

**Risk of serious personal injury or damage to equipment and property! Always observe the following:**

- Use an appropriately rated over-current protection device and disconnect switch in line with the main battery connections to the panel
- Shut off or disconnect all dc power sources before connecting or disconnecting any wiring
- Use wire and connectors rated for the maximum load current and size of fuse or circuit breaker, and keep cable lengths as short as practical
- Carefully observe wiring polarity when making input and output connections
- Securely tighten all connections

### **CAUTION**

**Risk of personal injury or damage to equipment! Always observe the following:**

- Install unit in a restricted access location (such as equipment rack) to limit unintentional contact with terminals and wiring

- Ensure the total power consumption of the loads does not exceed the 100A (peak), 80A (continuous) rated capacity of each power bus
- Ensure load current through each output channel does not exceed 25A maximum, or 20A continuous
- Do not block air inlet or outlet openings in the panel sides

## INSTALLATION

Inspect your distribution panel to ensure it was not damaged in shipping, and has all accessories:

- 4 black plastic boots to insulate main dc power connections (shipped with unit)
- 4 M8 size nut/washer/split-washer sets for high current bus connector studs (shipped on unit)
- 2 three pin alarm output connector plugs (shipped on unit)
- 8 ICT-BLP Breaker blanking plugs (ICT200DB-12 only)

To complete the installation you will also need appropriate fuses (FKS-ATO type) or circuit breakers (available from ICT) for each distribution channel you plan to use. Twelve 15A 80VDC FKS-ATO blade fuses are shipped with each ICT200DF-12 panel, while circuit breakers need to be ordered separately from ICT per the following list for use on the ICT200DB-12 panel:

Breakers:

ICT Model	Rating (65VDC)	Mfg. Part Number
ICT-CB5	5A	Carling MA1-B-14-450-1-A26-2-J
ICT-CB10	10A	Carling MA1-B-14-610-1-A26-2-J
ICT-CB15	15A	Carling MA1-B-14-615-1-A26-2-J
ICT-CB25	25A	Carling MA1-B-14-625-1-A26-2-J

CBI rocker handle circuit breakers with 0.25" tab terminals and current ratings up to 25A may also be used, consult ICT for suitable part numbers.

Fuses:

ICT Model	Rating (80V)	Mfg. Part Number
ICT- 80VF15	15A	Little Fuse FKS-ATO, 166.7000.5156

For 12V and 24V systems standard 32VDC ATO style blade fuses may be used, with current ratings up to 25A. These fuses are widely available from multiple manufacturers.

Mount the Dual Bus Distribution Panel in a 19 inch equipment rack, using standard rack mounting hardware. (Not provided)

On breaker equipped models install appropriately rated circuit breakers and blanking plugs in desired channel locations by carefully inserting a breaker so that its mounting tabs securely

snap into the front panel. Breakers are not removable once inserted.

On fuse equipped units change any channel fuses requiring different current ratings. (Up to 25A max)

Bond the panel chassis to the rack system ground, connecting a ground wire with ring tongue to the back panel ground stud. (8-32 thread)

Connect Bus A loads to each output channel using suitable wire (10AWG max) sized for the fuse or breaker installed on the channel, stripping 10-11mm of insulation and firmly clamping in the Bus A channel 1 to 6 output connectors by tightening the clamping screw. Note which load is connected to each channel, for future reference.

Repeat for the Bus B loads if required. The unit may be operated with either Bus A or Bus B powered, or both.

### **NOTE!**

All channel RTN lines, and the main high power Bus A and Bus B RTN terminals are common, and tied to a single internal Return bus. Bus A and Bus B inputs can be wired to a different dc voltage (10 to 60Vdc) of either polarity, but must share a common RTN voltage, normally at earth potential.

It may be possible to measure a voltage on the output terminal(s) even if the breaker or fuse is open. This is normal operation. The high-impedance detection circuitry may report a voltage reading that is purely a signal voltage and does not support loading.

Connect the main Bus A RTN line to the external battery or power supply return using wire and ring connectors rated for up to 100A continuous current. Feed the wire through the plastic insulating cap (supplied), and connect the ring tongue to the M8 **RTN** stud, then securely fasten with supplied hardware. Slip the insulating cap over the high current ring tongue and **RTN** stud on the back panel to help prevent accidental contact with the stud connection.

Connect the Bus A Input through a suitably rated disconnect switch (**set in the open position**) and a fuse or circuit breaker rated for 100A max continuous operation to the external battery or power supply output, using wire and connectors rated for 100A continuous current. Feed the wire through the plastic insulating cap (supplied), and connect the input ring tongue to the M8 **Bus A Input** stud, then securely fasten with supplied hardware and slip the cap over the ring tongue and stud to help prevent accidental contact with the input stud connection.

Repeat input wiring for the Bus B input, its power source and over current protection device, if the Bus B outputs are to be

used.

Connect the two form-C relay bus alarm outputs to an external monitoring system if needed, by stripping and terminating 16-28AWG alarm wiring in the Bus A and B Alarm 3-pin connector plugs, and installing in the back panel. Each Bus Alarm output will trigger for any fuse or breaker open on that bus. Note that unused output channels should have a fuse or breaker installed to avoid continuous activation of the alarm contact.

Bus Alarm Connector: (Bus A or B)

Alarm Pin	Function
C	Alarm Output common (0.5A 65Vdc max)
NC	Alarm Output normally closed for alarm
NO	Alarm Output normally open for alarm

## OPERATION

Ensure the correct fuses or circuit breakers are installed in each channel location that will be used to power a load, and switch the front panel channel breakers into the ON position (if equipped). Close the main Bus A and B input disconnect devices, and the panel is ready to use.

An over current condition on any output channel will trip the beaker or open the fuse on that channel, lighting the fuse fail LED (on fuse units) and triggering the Bus Form-C alarm contact for the affected bus.

## SPECIFICATIONS

Operating Voltage (either bus):	10VDC to 60VDC, or -10VDC to -60VDC
Bus Current Rating:	100A max, 80A cont. (Bus A, B)
Output Current Rating:	20A Continuous per output (limited by bus max rating)
Fuse/Breaker Capacity:	25A x 6 per bus
Power Consumption:	< 4 W
Alarm Form-C Contacts:	1 output per bus, 0.5A 65VDC
Input Connector:	4x Insulated M8 Stud, with slip-on insulating boot
Output Connector:	12 position cage clamp type per bus (10 – 22AWG)
Alarm Connectors:	Removable plug cage clamp type (16 – 28 AWG)
Operating Temperature:	-20°C to +60°C (Derate max bus current by 2% per degree C above 50°C)
Weight:	7 lbs (3.2kg)
Warranty:	2 years
Dimensions:	19.0" x 9.29" x 1.75" 483mm x 236mm x 45mm

## LIMITED WARRANTY

ICT Ltd. warrants to the original consumer purchaser that this product shall be in good working order, free from defects in materials and workmanship, for a period of two (2) years from the date of purchase. Should failure occur during the above stated time period, then ICT will, at its option, repair or replace this product at no additional charge except as set forth below. All parts, whether for repair or replacement, will be furnished on an exchange basis. All exchange pieces become the property of ICT. This limited warranty shall not apply if the ICT product has been damaged by unreasonable use, accident, negligence, disaster, service, or modification by anyone other than the ICT factory.

Limited warranty service is obtained by delivering the product during the above stated two (2) years warranty period to an authorized ICT dealer or ICT factory and providing proof of purchase date. If this product is delivered by mail, you will insure the product or assume risk of loss or damage in transit, and prepay shipping charges to the factory.

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## Innovative Circuit Technology Ltd.



## Standard Dual Bus Distribution Panel Series

INSTRUCTION MANUAL

855-314-010 (Rev 1.5)

Models:

**ICT200DF-12**  
**ICT200DB-12**