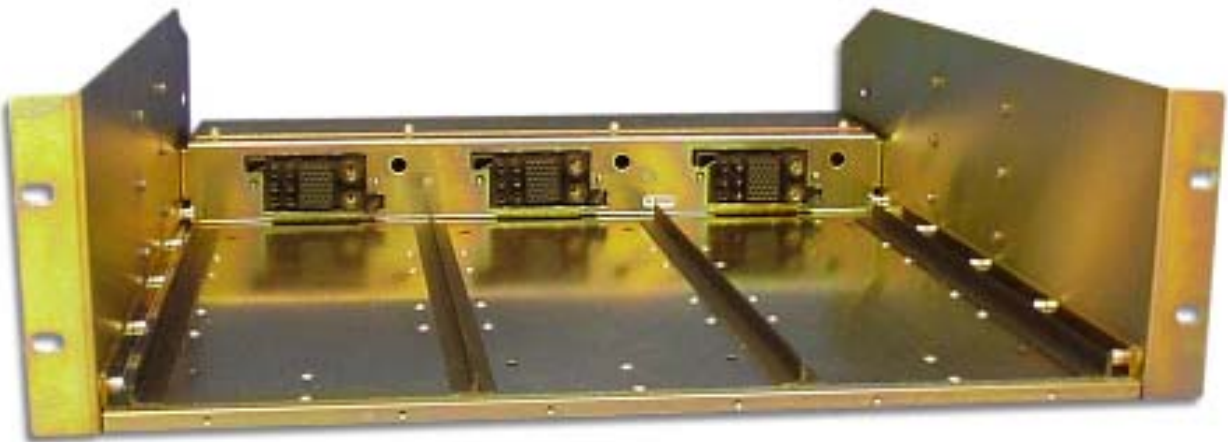




**ACS 1205-1**

**3 BAY, 19-INCH LCE INVERTER RACK**

## **OPERATION MANUAL**



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## 1.0 DESCRIPTION

When multiple LCE Inverter Modules are to be installed and connected in the same cabinet/system, equipment racks are used to minimize engineering integration time and facilitate trouble-free mounting of the modules. The ACS 1205-1 Inverter Rack is designed to accommodate one to three adjacent LCE Inverter Modules in such a configuration.

### ACS 1205-1

- 3 Bay (3 LCE Modules) Rack
- 19" wide x 18.9" deep x 3U (5.25") height (side or shelf mountable)
- If populated with three inverters: Total Power: 4.5 kVA for 48VDC module and  
3.0kVA for 24VDC module.
- Provides terminal blocks for input/output power and system interface signals.
- UL & TUV approval



## 2.0 ELECTRICAL SPECIFICATIONS:



**TB 2**

**TB 3**

**TB 1**

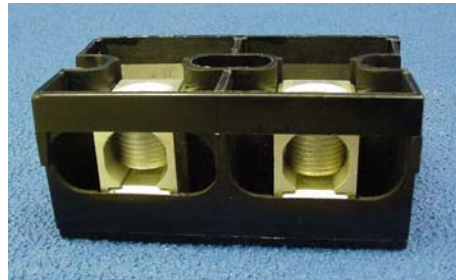
### 2.1 DC INPUT:

TB 2 on the rear of the rack provides all DC input connections.

- 2.1.1 The input wire size shall be chosen by the user in accordance with the input current for the user's specific unit's configuration and output power(see table 1).
- 2.1.2 Terminal block can accept wire size #300 mcm-#4 CU/AL, torque rating is listed on terminal block.

### TB 2 CONNECTIONS:

TB2-1	DC IN NEG (-)
TB2-2	DC IN POS (-)



### 2.2 AC OUTPUT:

TB1 on the rear of the rack provides all AC output connections.

- 2.2.1 TB1 Rating: UL/CE: 90A, 600V.
- 2.2.2 In accordance with the output current for the user's particular unit's configuration and output power, the user shall choose the output wire size (see table 1).

2.2.3 Terminal block TB 1 can accept wire size #10 - #22 AWG CU.

2.2.4 Screw Size: #8-32 straight slot screws.

**TB1 CONNECTIONS:**

- TB1-1 AC OUT NEUTRAL
- TB1-2 AC OUT LINE



**- WARNING -**  
**Due to the possibility of HIGH LEAKAGE CURRENT, it is essential that the earth ground connection be established before connecting the rack.**

**2.3 SIGNAL INTERFACE:**

TB3 on the rear of the rack provides appropriate connections.

2.3.1 TB3 Rating: UL: 20A, 250V, CE: 20A, 150V

2.3.2 Wire Size: #14-22 AWG CU

2.3.3 Screw Size: #6-32 philips head screws

**TB3 CONNECTIONS**

- TB3-1 FAULT RETURN
- TB3-2 MODULE NO. 1 FAULT
- TB3-3 MODULE NO. 2 FAULT
- TB3-4 MODULE NO. 3 FAULT
- TB3-5 NO CONNECTION
- TB3-6 NO CONNECTION
- TB3-7 REMOTE SWITCH NEG (-)
- TB3-8 REMOTE SWITCH POS (+)



8 7 6 5 4 3 2 1

**2.4 INPUT / OUTPUT CURRENT RATINGS:****TABLE 1**

<b>LCE Modules</b>	<b>LCE 15-48-120</b>	<b>LCE 15-48-220</b>	<b>LCE 10-24-120</b>	<b>LCE 10-24-220</b>
Input Current (A) Terminal blocks TB 2	156	156	197	197
Output Current(A) Terminal block TB1, contacts 1-5	40	21	25	14

Maximum input and output currents are calculated for 3 LCE modules in parallel operating with full power (4500W for 48V system and 3000W for 24V system). Input currents are calculated for low line modes (for 48VDC, the low line is 36VDC, for 24VDC, low line is 19VDC).

**Notes:****1) ON/OFF SWITCH**

- If remote switch function is not required, connect a jumper wire between TB3-7 and TB3-8. Note: All units are shipped from the factory with a jumper wire in this location.
- If remote switching is required, a mechanical switch or relay contact rated at 24V, 30mA should be connected between TB3-7 and TB3-8.

**Open**=Inverter Output Disabled, **Closed**=Inverter Output Enabled

- As an alternative, when programmed electric switching control is required, a JFET or FET can be used as an ON/OFF switch rated at 24V, 30mA.

**2) FAULT SIGNAL OUTPUTS:**

- Each fault signal output is an open collector of optocoupler transistor. Emitters of the optocoupler transistors are connected to fault return output.
- The maximum current and voltage for each fault signal output is 5mA and 32V. User shall provide power supply and limiting resistor.
- In reality the fault signal represents the OK status of Inverter:  
Inverter OK – optocoupler transistor is closed.  
Inverter **FAULT or NO INPUT POWER** – transistor is opened.

**-WARNING -**

**While the individual LCE modules offer fused input and output protection, TDI recommends the use of DC input and AC output circuit breakers located appropriately in the host system.**

### 3.0 MECHANICAL SPECIFICATIONS

#### 3.1 ACS 1205-1 with LCE Modules



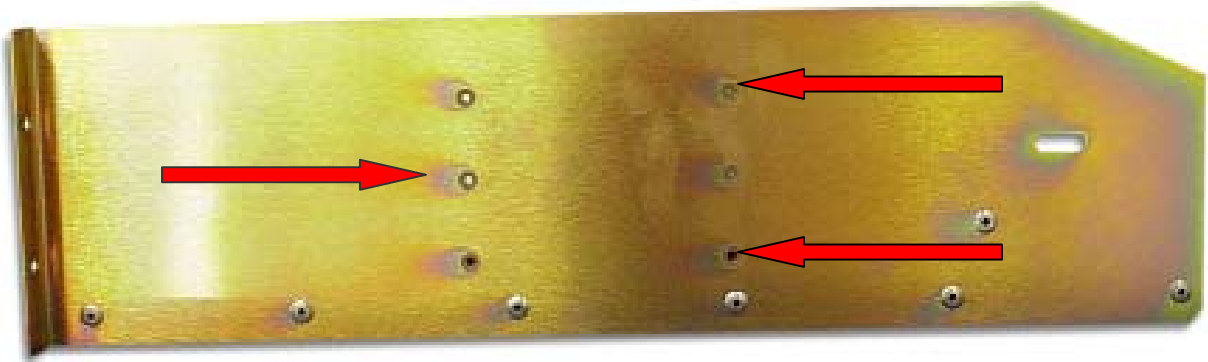
**3.1.1 Height:** 3U (5.25", 133.35 mm)

**3.1.2 Width:** 19" (482.6 mm)

**3.1.3 Depth:** 18.9" (480.06 mm)

**3.1.4 Weight:** without modules: Under 19.0 lbs.  
with 1 module: Under 32.0 lbs.  
with 2 modules: Under 45.0 lbs.  
with 3 modules: Under 58.0 lbs.

- 3.1.5 Frame**
- Constructed of 16 gauge steel.
  - Finish: Electrodeposited Zinc, ASTM-B633-98 Class 5, SC1, Type II (Yellow Chromate)
  - Mounting rails (inside floor of the rack) provide guided insertion and confident fault-free mounting for all of the modules.
  - Front plate screws integrate the Inverters and the Rack to ensure trouble free insertion and secure installation of the LCE modules to the rack.



**3.1.6 Recommended Rack Mounting Hardware:**

Shelf mount: Variable Qty. (4) (depends on the customer setup)  
Side mount: Qty. (12) #8

**\*NOTE – In addition, appropriate washers and locking washers should be used.**

**3.1.7 Module Mounting Screws (provided with each module):**

Qty. (2) .112-40 Captive Screws

**3.1.8 Suggested Clearance around Rack:**

0.125" (3.175 mm) min. Front / Side / back

**3.1.9 Rack Support:**

Shelf mount: There must be a minimum of four points at each corner.  
Side mount: There must be a minimum of 12 mounting screws used.

**4.0 ENVIRONMENTAL**

**4.1 Operating Temperature:** -20 °C to +55 °C

**4.2 Storage Temperature:** -50 °C to +85 °C

**4.3 Humidity:** 0-95% non-condensing

**4.4 Finish:** Electrodeposited Zinc, ASTM-B633-98 Class 5, SC1, Type II (Yellow Chromate)

**5.0 SUMMARY WIRING DIAGRAM**

**6.0 OUTLINE DRAWING**