nrgILS300CB08 and nrgILS300CB08-C

Intelligently control the individual DC output circuits. Get to know your current, voltage, temperature, fuse rating, low and high threshold limits, alarm status and system health. nrgILS™ (nrgSMART Intelligent Load Shedding) allows complete network control and takes you down to the circuit level for DC power control and monitoring.

Fig. 1: nrgILS300CB08 Front View

The nrgILS300CB08 circuit breaker panels have dual-feed 325A inputs and provide 8/8 (total of 16) breaker positions. These panels feature ±12/±24/±48V operating voltages to serve both legacy and "next-gen" network applications. Engineered into a standard 1RU footprint, each circuit supports up to 60A breakers in each position, providing ample capacity for distribution to a broad range of components. Advanced circuit level control and monitoring features are available. The panels are available with standard terminal block or connectorized outputs.

The front of the panel features individual circuit breaker touch guards to prevent inadvertent switching.

Fig. 2: nrgILS300CB08-C Rear View

Primary Features

- Universal voltage (±12VDC, ±24VDC and ±48VDC) enables standardization on a single part number for multiple voltages
- Industry standard, field replaceable slimline circuit breakers available between 2A - 60A
- UL and NEBS compliant to ensure industry-standard safety and functional requirements
- Form C relay contacts provide reliable alarm connections
- Alarm LEDs indicate breaker and power failures
- Individual Circuit Monitoring provides high accuracy, 100% passive monitoring
- Collect voltage and current for both feed and output circuit
- Collect temperature using optional nrgTEMP probes
- Individual Circuit Power Control
    - Solid state components for reliable continuous use
    - Passively cooled
- LCD screen for convenient access to circuit and network information
- Two ethernet connections, 10/100/1000, POE, IPV4/IPV6
- CTRL or SENS software selectable
- Full Rest API
- Three I^2C inputs for temperature/humidity/AC detection/other sensors

Intelligent Features

- Auto-ping device reset
- Low voltage tiered priority drop off
- AC Grid Detection On/Off
- Schedules On/Off
- Amperage On/Off
- Triggers/ actions (scratch programming) blocks: If, And, Else, Or, When, While
- Manual circuit override lockout

Fig. 4: nrgILS300CB08 Close Up

Software Features

- HTML User Interface for Configuration and Firmware Upgrades
- Data Logging
  - Generated Graphs for Voltage, Current, and Temperatures
  - Feed Current and Circuit Current
  - SNMP (v1, v2c, v3)
- Backup/Restore Configurations across Devices
- Manual or Intelligent Individual Circuit Control

Ordering Information

Circuit Breaker Panel	Part Number:
CB PNL: INTELLIGENT LOAD SHEDDING,REMOTE ON/OFF,DUAL,325A,8/8 CB,+/-12,24,48VDC,1RU	nrgILS300CB08
CB PNL: NRGSMART,CTRL,REMOTE ON/OFF,DUAL,325A,8/8 CB,+/-12,24,48VDC,1RU,WHT,CONN	nrgILS300CB08-C

Stud Input/Lug Output

Connectorized/Horizontal Input “-C”

Accessories (Purchased Separately):	Part Number:
1RU Circuit Breaker Puller	307491
4 Post Mounting Bracket Kit: 22”-36” Brackets, Mounting Hardware (requires Tie Bar, -C Version only)	307622
nrgSMART Temperature Sensor, ACC, 6ft (legacy analog)	nrgTEMP
I^2C Temperature and Humidity Sensor, 6ft	nrgILSTEMP
Replacement Components:	**Part Number:**
Replacement LCD/Carrier Board with SOM	090-1000-0011
Replacement Config Board	090-1000-0012
Replacement – set of 16 Breaker covers	307794

Connectors:	Part Number:
P40 Connector Kit: 8-6 AWG, Plug, Retainer, 2x Contacts	150326
P40 Connector Kit: 12-10 AWG, Plug, Retainer, 2x Contacts	150325
P40 Connector Kit: 14-16 AWG, Plug, Retainer, 2x Contacts	152799
P40 Replaceable Contact: 8-6 AWG, Single Contact	150333
P40 Replaceable Contact: 12-10 AWG, Single Contact	150334
Crimp Tool: 14-6 AWG, Daniels, M300BT	150793
Crimp Tool Locator: Universal, Daniels, UH2-5	150794
Contact Removal Tool: P40 Connector	150797
Custom made whips any color any gauge and any length: Call for more info.	
Single-pole Breakers:	**Part Number:**
2A, standard delay, UL489	151723
3A, standard delay, UL489	152805
5A, standard delay, UL489	149710
10A, standard delay, UL489	149711
15A, standard delay, UL489	149712
20A, standard delay, UL489	149713
25A, standard delay, UL489	149714
30A, standard delay, UL489	149715
40A, standard delay, UL489	149716
50A, standard delay, UL489	149718
60A, standard delay, UL489	149719

Specifications

Inputs:	Specifications:
Voltage range (nominal voltage)	±12VDC, ±24VDC and ±48VDC
Max. input load rating	325A @ 45°C per panel
Short circuit withstand rating	5000A
Max. input interrupt device	125% of panel rating (for 325A rated feeds)
Optional (Standard and -SC versions): Vertical input terminal studs (with Keps nuts and flat washers) for dual-hole compression lugs	Two pairs of $^{3}/_{8}$-16 studs on 1" centers per terminal [max. lug width of 1.15" (29.2 mm)]. Torque nut (using $^{9}/_{16}$" or 15 mm socket) to 150 in/lb. (~17 N•m), max.
Optional (-C Versions): Horizontal input terminal landings (with Keps nuts, flat washers, and bolts) for dual-hole compression lugs	Two pairs of $^{3}/_{8}$" holes on $^{5}/_{8}$"-1" centers per terminal [max. lug width of 1.5" (38.1 mm)]. Torque bolt and nut (using $^{9}/_{16}$" or 15 mm sockets) to 150 in/lb. (~17 N•m), max.
Input wire size	2/0 AWG to 350 MCM
Grounding:	**Specifications:**
Earth GND terminal bolts (with spring washers and flat washers) for dual-hole compression lug	Three sets of $^{1}/_{4}$-20 threaded holes on $^{5}/_{8}$" centers. [max. lug width of .50" (12.7 mm)]. Torque bolts (using $^{7}/_{16}$" or 12 mm socket) to 50 in/lb. (5.5 N•m), max.
Ground wire size	#14 AWG to #4 AWG
Outputs:	**Specifications:**
Output circuit breaker	Single-pole: 60A
Minimum short circuit interrupt rating	5000A
Optional (Standard Version): Terminal blocks, single-hole compression lugs	16, #10-32 screws [max. lug width of .50" (12.7)]. Torque screw to 20 in/lb. (2.3 N•m), max.
Optional (Standard Version): Output wire size, single-hole compression lug	#14 AWG to #4 AWG
Optional (-C Version): Connectors (purchased separately)	16, P40 connector plugs, latching, safe touch
Optional (-C Version): Output wire size, connectors	#14 AWG to #6 AWG
Circuit breakers	AIRPAX 1U Series

Alarms:		Specifications:
Alarm relay contacts		2A @ 30 VDC; 0.6A @ 60 VDC
Max. alarm card power rating		@12V: 18mA (0.22W) @24V: 20mA (0.48W); @48V: 30mA (1.44W)
Alarm wire size		#24 AWG, typical (#26 to #20 AWG)
Terminals		Wire wrap or mates with TE Connectivity 3-640428-3
Dimensions:		**Specifications:**
nrgILS300CB08	Height: Depth: Width:	1.75" (44 mm) 15.27” (388 mm) 17" (432 mm) without brackets 19” mounting brackets included with panel, 23” sold separately
nrgILS300CB08-C	Height: Depth: Width:	1.75" (44 mm) 18.2" (462 mm) without tie bar 21.4" (543 mm) with tie bar 17" (432 mm) without brackets 19” mounting brackets included with panel, 23” sold separately Tie bar included with panel Cable-end connectors not included with panel
Weights:		**Specifications:**
nrgILS300CB08		14.0 lb. Unpopulated / 19.0 lb. Populated
nrgILS300CB08-C		16.6 lb. Unpopulated / 21.6 lb. Populated
Compliance:		**Specifications:**
UL		Listed
NEBS		Level 3
Voltage Sensor:		**Specifications:**
Sensor accuracy		-19.99 to +19.99V: ± 0.3V -20V to -60V: ± 0.1V +20V to +60V: ± 0.1V
Voltage measurement range		-60 to +60 VDC
NOTE: Sensors are factory calibrated and do not require user adjustment.		
Current Sensor:		**Specifications:**
Precision / accuracy		±1% precision, ±0.12A accuracy Example: 40A current, will measure 40A ± (40A*1%) ± 0.12A
Communication:		**Specifications:**
nrgILS OS minimum required version		nrgILS OS v 1.0
nrgNET communication protocol		Proprietary serial protocol used to communicate between panels and controller
nrgNET connector		RJ45
nrgNET connector functions		nrgNET IN from the Controller or upstream nrgILS panel nrgNET OUT to downstream nrgILS panel