Power: 8/8 Position TPA Fuse Panel

Fig. 1: nrg250TPA08-SENS-16 Front View

The Amphenol 250TPA08/nrg250TPA08 fuse panels are 250A dual-feed and provide 8/8 TPA fuse positions. Our 250TPA08/nrg250TPA08 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 50A TPA fuses in each position, providing ample capacity for distribution to a broad range of components. Advanced circuit level monitoring features are available as an option. The panel is available in standard terminal block outputs or connectorized outputs.

This platform provides front access to alarm enable/disable switch configuration for uninstalled TPA fuse locations. Also featured are front LED indicators for power/fuse alarms, monitoring status, rear connections for form C relay alarms, and optional nrgSMART connections.

Fig. 2: 250TPA08-16F Rear View

Each of the 250A feeds provide power for up to eight output positions. The panel includes removable 1RU TPA fuse holders. These 1RU TPA fuse holders feature an ergonomic front grip for easy removal, sliding top cover to protect the fuse from above, and red alarm plunger to indicate a failed fuse. Field replaceable TPA fuses are available from 5A to 50A per position. Breakers are available from 5A to 60A per position. The panel supports universal voltages (±12VDC to ±48VDC).

Primary Benefits

- Universal voltage (±12VDC, ±24VDC and ±48VDC) enables standardization on a single part number for multiple voltages
- Up to 50A fuses for distribution to a variety of network elements
- UL and NEBS compliant to ensure industry-standard safety and functional requirements
- Form C relay contacts provide reliable alarm connections
- Integrated designation card holder for simple circuit identification
- Fail alarm LEDs indicate fuse and power failures
- Clear, flame-retardant polycarbonate cover (94V-0) protects input and output power connections and wiring from damage

- Either vertical feed inputs and staggered output terminal blocks to facilitate waterfall cable management, horizontal feed inputs and output connectors that speed-up installation and allow cables to exit straight back from the panel, or vertical feed inputs and output connectors that allow input cables to be routed directly from above and speed up installation of outputs
- Optional Individual Circuit Monitoring provides high accuracy, 100% passive monitoring
- Collect voltage and current for both feed and output circuit

Applications

- Wireless
- Central office
- Co-location
- Remote sites
- Secondary distribution

Fig. 3: nrg250TPA08-C-16F Rear View

Ordering Information

TPA Fuse Panel:	Part Number:
250A Dual-Feed, 8/8 Panel, Vertical Inputs, Output Terminal Blocks	250TPA08-16F
250A Dual-Feed, 8/8 Panel, Horizontal Inputs, Connectorized Outputs, Standard Tie Bar (Connectors purchased separately)	250TPA08-C-16F
250A Dual-Feed, 8/8 Panel, Vertical Inputs, Connectorized Outputs (Tie Bar and Connectors purchased separately)	250TPA08-SC-16F
nrgSMART Circuit Monitoring, Controller, 250A Dual-Feed, 8/8 Panel, Vertical Inputs, Output Terminal Blocks	nrg250TPA08-CTRL-16F
nrgSMART Circuit Monitoring, Sensor, 250A Dual-Feed, 8/8 Panel, Vertical Inputs, Output Terminal Blocks	nrg250TPA08-SENS-16F
nrgSMART Circuit Monitoring, Controller, 250A Dual-Feed, 8/8 Panel, Horizontal Inputs, Connectorized Outputs, Standard Tie Bar (Connectors purchased separately)	nrg250TPA08-CTRL-C-16F
nrgSMART Circuit Monitoring, Sensor, 250A Dual-Feed, 8/8 Panel, Horizontal Inputs, Connectorized Outputs, Standard Tie Bar (Connectors purchased separately)	nrg250TPA08-SENS-C-16F
nrgSMART Circuit Monitoring, Controller, 250A Dual-Feed, 8/8 Panel, Vertical Inputs, Connectorized Outputs (Tie Bar and Connectors purchased separately)	nrg250TPA08-CTRL-SC-16F
nrgSMART Circuit Monitoring, Sensor, 250A Dual-Feed, 8/8 Panel, Vertical Inputs, Connectorized Outputs (Tie Bar and Connectors purchased separately)	nrg250TPA08-SENS-SC-16F

Stud Input/ Lug Output

Connectorized / Horizontal Input “-C”

Connectorized / Stud Input “-SC”

Accessories (Purchased Separately):	Part Number:
Blanking Cover: Single, covers unused fuse holder or breaker positions	150203+03
4 Post Mounting Bracket Kit: 22”-36” Brackets, Mounting Hardware (requires Tie Bar, -C Versions only)	307622
Tie Bar Kit: Connectorized, Rear Mount Tie Bar, Mounting Hardware (-SC Versions only)	307661
nrgSMART Temperature Sensor, ACC, 6ft	nrgTemp
Replacement Components:	**Part Number:**
Replaceable Alarm Card	307608
Replaceable Alarm Card, nrgSMART	307710
Replaceable Controller Board, nrgSMART	400822
Replaceable Sensor Board, nrgSMART	307607
1RU TPA Fuse Holder	307492
Kit: Circuit Breaker Cover, Set of 16	307794
19” Mounting Bracket Kit: 2x 19” Brackets, Mounting Hardware	PMTG19
23” Mounting Bracket Kit: 2x 23” Brackets, Mounting Hardware	PMTG23
Connectors (Purchased Separately):	**Part Number:**
P40 Connector Kit: TPA, 8-6 AWG, Plug, Retainer, 2x Contacts	150326
P40 Connector Kit: TPA, 12-10 AWG, Plug, Retainer, 2x Contacts	150325
P40 Replaceable Contact: TPA, 8-6 AWG, Single Contact	150333
P40 Replaceable Contact: TPA, 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
TPA Fuses:	**Part Number:**
5A, 170VDC	124818
10A, 170VDC	124819
15A, 170VDC	124820
20A, 170VDC	124821
25A, 170VDC	125244
30A, 170VDC	122734
40A, 170VDC	122738
50A, 170VDC	122739
Circuit Breakers:	**Part Number:**
5A, standard delay, UL489, without cover	149710
10A, standard delay, UL489, without cover	149711
15A, standard delay, UL489, without cover	149712
20A, standard delay, UL489, without cover	149713
25A, standard delay, UL489, without cover	149714
30A, standard delay, UL489, without cover	149715
40A, standard delay, UL489, without cover	149716
50A, standard delay, UL489, without cover	149718
60A, standard delay, UL489, without cover	149719

Fig. 4: nrg250TPA08-CTRL

Specifications

Inputs:	Specifications:
Voltage range (nominal voltage)	±12VDC, ±24VDC and ±48VDC
Max. input load rating	250A @ 45°C per panel (De-rated to 180A @ 65°C)
Short circuit withstand rating	5000A
Nominal power loss at full load	Less than 45W per side @12,000W full load per side (250A x 48V); 250A @ 45°C per panel
Percentage of full power dissipation at nominal voltage	Less than 0.5%
Max. input interrupt device	125% of panel rating (for 250A 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 washers) for dual-hole compression lug	Three sets of $^{1}/_{4}$-20 threaded holes on $^{5}/_{8}$" centers. Torque bolts (using $^{7}/_{16}$" or 12 mm socket) to 50 in/lb. (5.6 N•m), max.
Ground wire size	#6 AWG to #1 AWG
Outputs:	**Specifications:**
Output TPA fuse	50A
Output load	40A continuous TPA Fuse 48A continuous Circuit Breaker
Minimum short circuit interrupt rating	5000A
Optional (Standard Versions): 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 Versions): Output wire size, single-hole compression lug	#14 AWG to #4 AWG
Optional (-C and -SC Versions): Connectors (purchased separately)	16, P40 connector plugs, latching, safe touch
Optional (-C and -SC Versions): Output wire size, connectors	#14 AWG to #6 AWG
TPA fuses	Cooper Bussmann
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)
Alarm Terminals	Wire wrap or mates with TE Connectivity 3-640428-3
Dimensions:	**Specifications:**
250TPA08/nrg250TPA08 Height: Depth: Width:	1.75" (44 mm) 13.5" (344 mm) 17.0" (432 mm) without brackets 19" and 23" brackets included with panel
250TPA08-C/nrg250TPA08-C Height: Depth: Width:	1.75" (44 mm) 18.7" (475 mm) without tie bar 21.9" (557 mm) with tie bar 17.0" (432 mm) without brackets 19" and 23" brackets included with panel

		Tie bar included with panel Cable-end connectors not included with panel
250TPA08-SC/nrg250TPA08-SC	Height: Depth: Width	1.75" (44 mm) 13.5" (344 mm) without tie bar 17.0" (432mm) with tie bar 17.0" (432 mm) without brackets 19" and 23" brackets included with panel Tie bar and cable-end connectors not included with panel
Weights:		**Specifications:**
250TPA08/nrg250TPA08		12.0 lb. Unpopulated / 15.6 lb. Populated
250TPA08-C/nrg250TPA08-C		14.6 lb. Unpopulated / 18.2 lb. Populated
250TPA08-SC/nrg250TPA08-SC		12.0 lb. Unpopulated / 15.6 lb. Populated
Compliance:		**Specifications:**
UL		Listed (TPA Fuses Only)
NEBS		Level 3
Voltage Sensor (nrgSMART model only):		**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: • Voltage measurement may be slightly different than at input terminal blocks due to the voltage drop within the panel. • Sensors are factory calibrated and do not require user adjustment.		
Current Sensor (nrgSMART model only):		**Specifications:**
Precision / accuracy		±5% precision, ±0.25A accuracy Example: 40A current, will measure 40A ± (40A*5%) ± 0.25A = 40A ± 2.0A ± 0.25A = 37.75A to 42.25A
Communication (nrgSMART model only):		**Specifications:**
nrgOS minimum required version		nrgOS 4.1.0
nrgNET communication protocol		Proprietary serial protocol used to communicate between panels and controller
nrgNET connector		Removable 5-pin connector with screw down terminals
nrgNET connector functions		nrgNET IN from the Controller or upstream nrgSMART panel nrgNET OUT to downstream nrgSMART panel