SynergEX panelboards

Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zone 2, AEx nA IIC Gc T4
Ex nA IIC T4 Gc
NEMA 3R, 4, 4X

Power, lighting and heat tracing panels for Class I, Division 2 applications

The SynergEX panelboard provides protection and distribution of lighting, power and heat tracing circuits.

The SynergEX panelboard utilizes individually encapsulated circuit breakers and a fully encapsulated chassis to reduce downtime, increase safety and lower maintenance costs in hazardous locations.

Applications:

SynergEX panelboards are used:

- In areas made hazardous by the continuous or abnormal presence of flammable gases, vapors and combustible dusts
- In areas subject to weather, dampness and corrosion
- For branch power distribution and circuit protection to motors, valves, pumps, lighting, heat tracing, receptacles, etc.
- For indoor and outdoor applications in petroleum refineries, chemical and petrochemical plants, and other process industry facilities where similar hazards exist
- Can accommodate up to 40 ampere branch loads

Features:

- Lightweight enclosure designed to provide easy accessibility
- High ingress protection for harsh environments
- Breakers permanently welded closed to prevent tampering
- Touch safe and fully encapsulated bus

Certifications and compliances:

- Class I, Division 2, Groups A, B, C, D
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Conforms to:

- CSA C22.2 No. 29-M1989 (R2004)
- UL67 (Ed. 12): 2009
- CSA C22.2 No. 60079-15:2010
- UL60079-15 (Ed. 4): 2013

Environmental ratings[A]:

- NEMA 3R, 4, 4X
- Temperature class: T4
- With main lug only: -20°C to +55°C
- With main breaker: -20°C to +40°C

Electrical ratings:

SynergEX panelboard:

- Max. 225 amperes/phase (three-phase max.)
- Max. 480 VAC
- Max. 225 amperes main breaker

Encapsulated branch circuit breakers:

- 120/240 VAC:
  - 1- and 2-pole
  - 10, 15, 20, 25, 30, 35, 40 amperes
  - 1-pole GFI and EPD
  - Auxiliary and signal contact
- 208/120 VAC:
  - 1-, 2- and 3-pole
  - 10, 15, 20, 25, 30, 35, 40 amperes
  - 1-pole GFI and EPD
  - Auxiliary and signal contact
- 480/277 VAC:
  - 1-, 2- and 3-pole
  - 10, 15, 20, 25, 30, 35, 40 amperes
  - Auxiliary and signal contact
  - 10A-40A: 10kA short circuit rating

Encapsulated main circuit breakers:

- Up to 480 VAC:
  - 2- and 3-pole
  - 10, 20, 30, 40, 60, 80, 100, 125,150, 200, 225 amperes
  - Auxiliary and signal contact
  - 10A-40A: 10kA short circuit rating
  - 60A-225A: 25kA short circuit rating

Standard materials:

- Enclosure – 316L stainless steel or painted sheet steel (optional)
- Observation window – polycarbonate
- External parts (hinges, screws, washers, ¼ turn handles, gland plates) – 316L stainless steel
- Internal parts (screws, washers, back plate fasteners) – zinc-plated steel
- Gaskets – silicone
- Dead front panel – 316L stainless steel
- Chassis lugs – tin-plated copper
- Bonding/grounding assembly – aluminum
- Encapsulated circuit breakers – flame rated nylon
- Breaker handles – Type 6/6 nylon

Options:

Description	Suffix
• Breather and drain	**BD**
• Heater (-40°C)	**HTR**
• Bottom feed inverted panelboard	**I**
• Horizontal mounting feet	**MH**
• No window	**NW**

[A] Suitable for use up to -40° with heater.

Power, lighting and heat tracing panels for Class I, Division 2 applications

Ordering information:

Part number example

SSPGS442-00004200-42120-3M225-HTR-GP1GP4

SSP G S 4 42 - 00 00 42 00

Model

SSP	Class I, Division 2

Enclosure size

		C
A	24 x 24 x 10"	24
B	30 x 24 x 10"	30
C	36 x 24 x 10"	36
D	42.5 x 24 x 10"	42.5
E	48 x 24 x 10"	48
F	54 x 24 x 10"	54
G	60 x 24 x 10"	60
L[B]	Coupled enclosure, vertical	N/A
M[B]	Coupled enclosure, horizontal	N/A

Enclosure material / finish

S	316L stainless steel, natural finish

Contact factory for custom options and materials.

Panel voltage rating

1	120/240V (single-phase, 3-wire)
2	208/120V (three-phase, 4-wire)
4[C]	480/277V (three-phase, 4-wire)

Breaker spaces

1-pole breaker = 1 space	Total number of breaker spaces utilized (rounded up to the next even number)
2-pole breaker = 2 spaces	
GFI/EPD breaker = 2 spaces	
1-pole auxiliary and signal contact = 2 spaces	
2-pole auxiliary and signal contact = 3 spaces	
3-pole breaker = 3 spaces	

Chassis configuration

– 00 00 42 00

3P 2P 1P GFI/EPD

Total number of circuits available for each modular bus section

Note: Additional space for future breaker additions should be added to total number of circuits.

Select no. of circuits available per chassis section

Total circuits	3-pole	2-pole	1-pole	GFI / EPD
06	6	–	6	–
12	12	12	12	12
24	24	24	24	24
30	30	–	30	–
36	36	–	36	–
40	–	40	–	40
42	42	–	42	–

Maximum of three modular bus sections per enclosure, not exceeding 42 circuits.

Custom bus sections available; contact factory.

Enclosure size configuration required:

C Add up chassis sections required and main lug bend radius or main breaker lengths to determine appropriate enclosure size.

A + B = C

A Main breaker or lug

B Circuit quantity & type

C Enclosure size

*Round up to the nearest enclosure size

For enclosure size configuration:

B Determine circuit quantity and type, then refer to the chart below for chassis lengths.

Add multiple bus sections together for "B" value, if applicable.

Chassis section lengths

Total circuits	3-pole	2-pole	1-pole	GFI / EPD
06	8"	–	9"	–
12	11"	12"	14"	12"
24	17"	18"	22"	19"
30	19"	–	26"	–
36	22"	–	31"	–
40	–	26"	–	27"
42	25"	–	35"	–

Configuration examples

Requirements	A	B	C	Enclosure
Main breaker: 225A, 3-pole (24) 1-pole branch breakers	20"	22"	42"	Size D 42.5 x 24 x 10
Main breaker: 40A, 3-pole (12) 1-pole	10"	14" – (12) 1-pole branch breakers 8" – 40A main breaker (6) circuits, 3-pole	30"	Size B 30 x 24 x 10
Main lug (12) 1-pole (12) 2-pole	10"	14" – (12) 1-pole branch breakers 12" – (12) 2-pole branch breakers	36"	Size C 36 x 24 x 10

[B] Contact modified products.

[C] GFI/EPD not available.

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- 42 1 20 - 3M 225 - HTR -GP1GP4

Dash indicates breaker series to follow

Dash indicates main breaker to follow

Dash indicates options to follow

Alike branch breakers[D]

Specify quantity of alike branch breakers

Branch breaker poles

3	3-pole breaker (not available with single-phase systems)
2	2-pole breaker
1	1-pole breaker

Note: 3-pole breakers are listed and assembled first, followed by 2- and 1-pole, from highest to lowest amperage rating. GFI and EPD breakers are available in single-pole only. SC and AC are available in 10A-25A.

Contact factory for special breaker options.

Branch breaker amperage

10	10A, 1-, 2- or 3-pole
10AX	10A, 1-, 2- or 3-pole with auxiliary contacts
10SC	10A, 1-, 2- or 3-pole with signal contacts
15	15A, 1-, 2- or 3-pole
15AX	15A, 1-, 2- or 3-pole with auxiliary contacts
15SC	15A, 1-, 2- or 3-pole with signal contacts
15E[E]	15A, 1-pole, EPD
15G[E]	15A, 1-pole, GFI
20	20A, 1-, 2- or 3-pole
20AX	20A, 1-, 2- or 3-pole with auxiliary contacts
20SC	20A, 1-, 2- or 3-pole with signal contacts
20E[E]	20A, 1-pole, EPD
20G[E]	20A, 1-pole, GFI
25	25A, 1-, 2- or 3-pole
25AX	25A, 1-, 2- or 3-pole with auxiliary contacts
25SC	25A, 1-, 2- or 3-pole with signal contacts
25E[E]	25A, 1-pole, EPD
25G[E]	25A, 1-pole, GFI
30	30A, 1-, 2- or 3-pole
30E[E]	30A, 1-pole, EPD
30G[E]	30A, 1-pole, GFI
35	35A, 1-, 2- or 3-pole
40	40A, 1-, 2- or 3-pole
40E[E]	40A, 1-pole, EPD
40G[E]	40A, 1-pole, GFI

Main circuit breaker

2M	2-pole main circuit breaker
3M	3-pole main circuit breaker
BLANK	Main lug only

Main breaker amperage 10A-40A[F]

10	10A, 2- or 3-pole
20	20A, 2- or 3-pole
30	30A, 2- or 3-pole
40	40A, 2- or 3-pole

For enclosure size configuration:

A	Add 10" for main breaker (10A-40A) or main lug
	Add 20" for 60A-225A main breaker

Main breaker amperage 60A-225A[G]

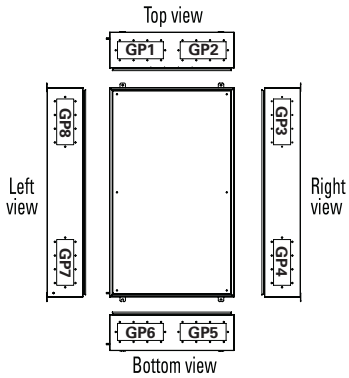
60	60A, 2- or 3-pole
60AX	60A, 2- or 3-pole with auxiliary contacts
60SC	60A, 2- or 3-pole with signal contacts
80	80A, 2- or 3-pole
80AX	80A, 2- or 3-pole with auxiliary contacts
80SC	80A, 2- or 3-pole with signal contacts
100	100A, 2- or 3-pole
100AX	100A, 2- or 3-pole with auxiliary contacts
100SC	100A, 2- or 3-pole with signal contacts
125	125A, 2- or 3-pole
125AX	125A, 2- or 3-pole with auxiliary contacts
125SC	125A, 2- or 3-pole with signal contacts
150	150A, 2- or 3-pole
150AX	150A, 2- or 3-pole with auxiliary contacts
150SC	150A, 2- or 3-pole with signal contacts
200	200A, 2- or 3-pole
200AX	200A, 2- or 3-pole with auxiliary contacts
200SC	200A, 2- or 3-pole with signal contacts
225	225A, 2- or 3-pole
225AX	225A, 2- or 3-pole with auxiliary contacts
225SC	225A, 2- or 3-pole with signal contacts

Gland plates[H]

GP1	Specify gland plate location (see diagram below for locations)
GP2	
GP3	
GP4	
GP5	
GP6	
GP7	
GP8	

Gland plate locations

Enclosure sizes A-M



Gland plate dimensions = 10" x 6"

Options

BD	Breather and drain
HTR	Heater (-40°C)
I	Bottom feed inverted panelboard
MH	Horizontal mounting feet
NW	No window

[D] Insert hyphen (-) before each branch breaker series.

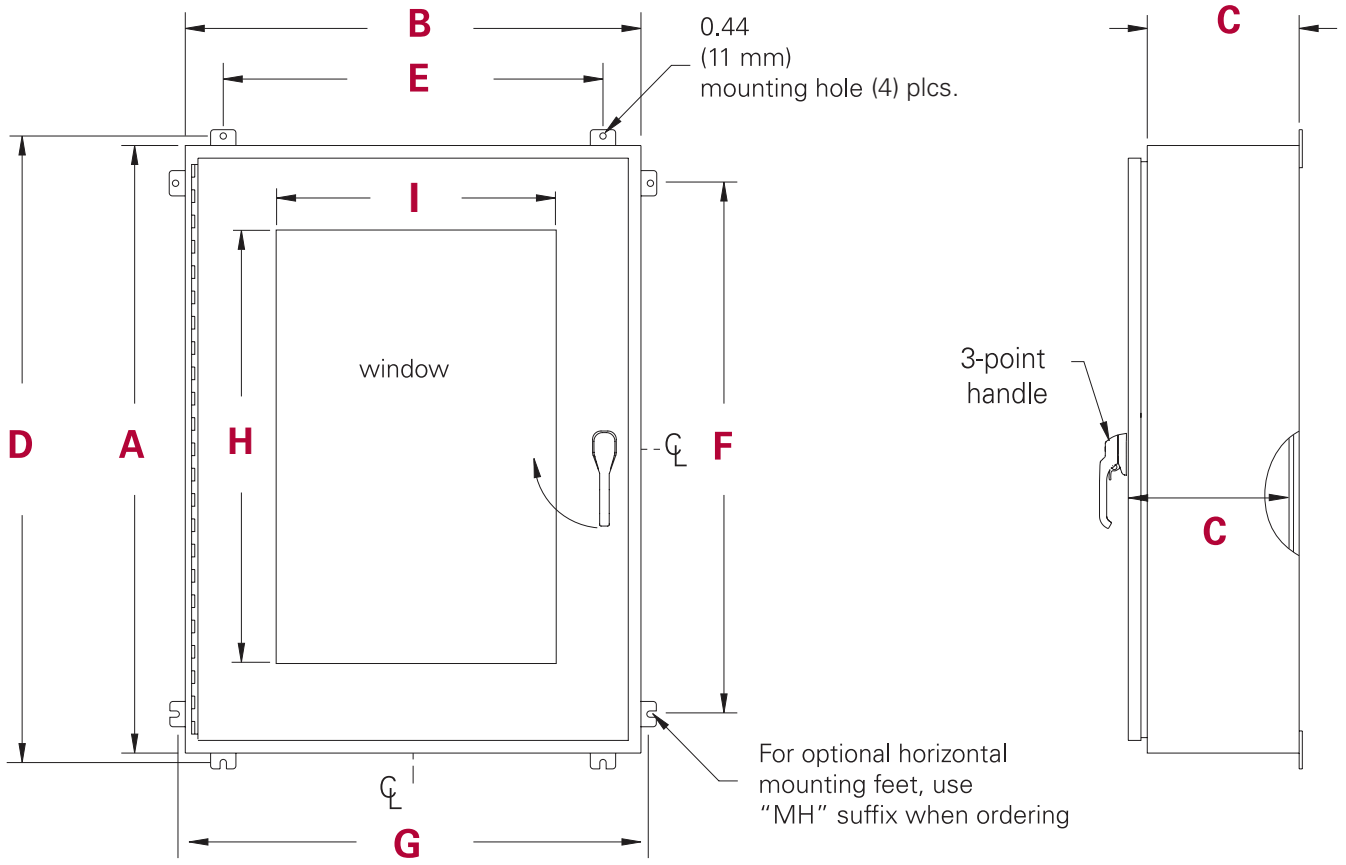
[E] All 1-pole EPD and GFI breakers require two breaker positions.

[F] 10A to 40A main breakers are back feed, on-chassis and require 2- or 3-pole chassis spaces.

[G] 60A to 225A main breakers are off-chassis.

[H] Leave blank for no gland plates.

Dimensions (in inches):



Enclosure Size	Height x width x depth			Mounting holes (D & E vertical, F & G horizontal)				Window	
	A	B	C	D	E	F	G	H	I
A	24.00	24.00	10.00	25.25	18.00	18.00	25.25	15.00	13.00
B	30.00	24.00	10.00	31.25	18.00	24.00	25.25	21.00	13.00
C	36.00	24.00	10.00	37.25	18.00	30.00	25.25	27.00	13.00
D	42.50	24.00	10.00	43.25	18.00	36.50	25.25	33.50	13.00
E	48.00	24.00	10.00	49.25	18.00	42.00	25.25	39.00	13.00
F	54.00	24.00	10.00	55.25	18.00	48.00	25.25	45.00	13.00
G	60.00	24.00	10.00	61.25	18.00	54.00	25.25	51.00	13.00