

Mini Power-Zone[®] Unit Substation

Catalog
7440CT0901
2009
Class 7440



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Mini Power-Zone® Unit Substation

Product Description

Product Description

The Mini Power-Zone Unit Substation from Schneider Electric is a miniaturized version of our Power-Zone Unit Substation. Included are:

- Primary Main Circuit Breaker
- Sealed Step-Down Transformer
- Secondary Main Circuit Breaker
- Distribution Panelboard

Because the Mini Power-Zone Unit Substation is furnished as a complete package, considerable savings in installation time and costs can be realized.

Features

- NEMA 3R enclosure; suitable for both indoor and outdoor use
- Rated for Service Entrance use
- 185 °C insulation with 115 °C temperature rise
- Sealed, epoxy-resin encapsulated transformer
- Panel section has copper bus and uses Square D® brand QO® style circuit breakers
- UL Listed per UL 1062 File E92978.

Mini Power-Zone centers are furnished with factory-installed primary main and secondary main circuit breakers only. Circuit breaker ratings are selected to meet National Electrical Code® (NEC®) requirements and to coordinate with transformer magnetizing inrush current.

Feeder circuit breakers are standard QO plug-on type, which can be ordered, as required, from your local Schneider Electric distributor. If ground fault protection is required, Square D brand Qwik-Gard® circuit breakers may be used in all sizes. Tandem circuit breakers are not permitted.

Typical Applications

- Small shopping centers
- Portable offices
- Assembly lines
- Construction site
- Emergency power
- Temporary power
- Guard shacks/other shacks
- Retail
- Areas with limited space

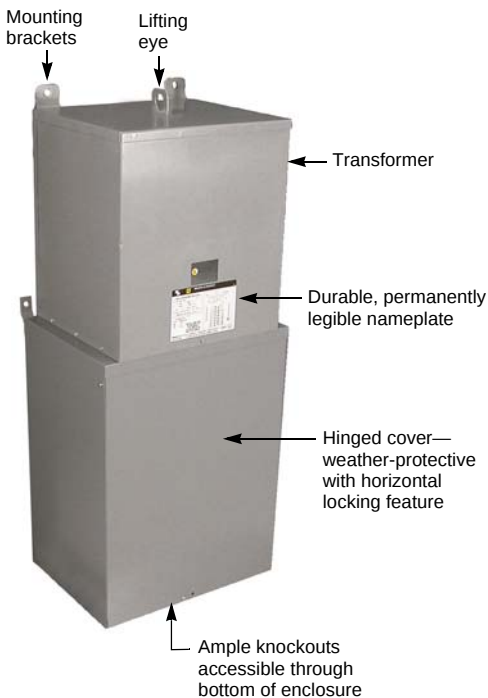
The Mini Power-Zone Unit Substation uses a separate transformer and panelboard section. This allows the panel section to be removed and wired first, if desired. Also the transformer can be replaced without disturbing the panel section and associated wiring. The new transformer simply slides into the top of the panel section, and the primary and secondary leads are reconnected to the main circuit breakers.

General Information

- Available in single and three phase configurations
 - Single phase configuration supplies a 120/240 branch panelboard
 - Three phase configuration supplies a 208Y/120 branch panelboard
- Two panelboard options for Mini Power-Zone products protected by a backfeed (secondary main) circuit breaker:
 - QO load center interior (MPZ prefix); branch circuit accepts QO (plug-on) circuit breakers only
 - NQ panelboard interior (MPZB prefix); branch circuit accepts QO or QOB (bolt-on) circuit breakers
- Available in multiple interrupting ratings, based on the customer's available fault current.
 - FAL primary main for 18 kAIC
 - FHL primary main for 25 kAIC
 - HJ primary main for 65 kAIC; only available with the MPZB optionA shunt trip option can be added to the primary main circuit breaker.
- Two choices of enclosure material
 - Powder coat painted, standard hot-rolled steel
 - Powder coat painted, 316 stainless steel
- All designs are NEMA Type 3R rated for indoor/outdoor use
- Not available as a packaged solution for NEMA Type 4X applications. However, Schneider Electric does offer all three components separately in NEMA Type 4X enclosures:
 - NEMA Type 4X enclosed circuit breakers (primary main)
 - NEMA Type 4X encapsulated transformers
 - NEMA Type 4X NQ panelboards

Contact your local Schneider Electric representative for catalog numbers, price, and availability.

Mini Power-Zone® Unit Substation
General Information



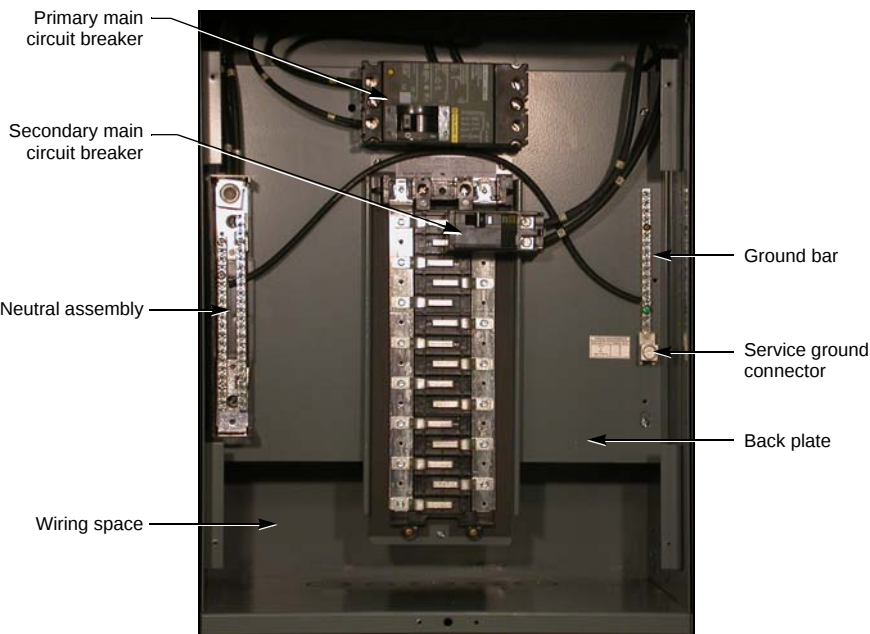
Single Phase Unit Substation

The single phase Mini Power-Zone Unit Substation is UL Listed for indoor and outdoor applications.

Standard Square D brand QO plug-on branch circuit breakers or Qwik-Gard ground fault circuit breakers may be ordered from any Schneider Electric distributor as required.

Shunt trip capability on the primary circuit breaker is available by special order if your local fire department requires remote tripping provisions where used as service equipment.

UL Listed, electrostatically shielded Mini Power-Zone units are also available by special order.



Mini Power-Zone® Unit Substation General Information

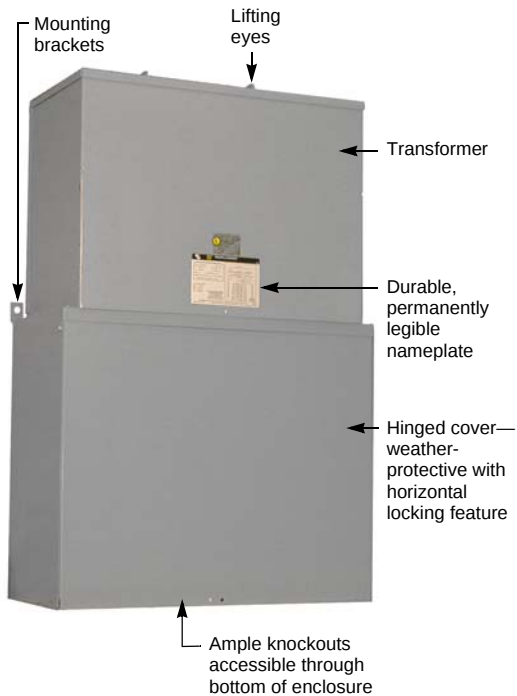
Three Phase Unit Substation

The three phase Mini Power-Zone Unit Substation is UL Listed for indoor and outdoor applications.

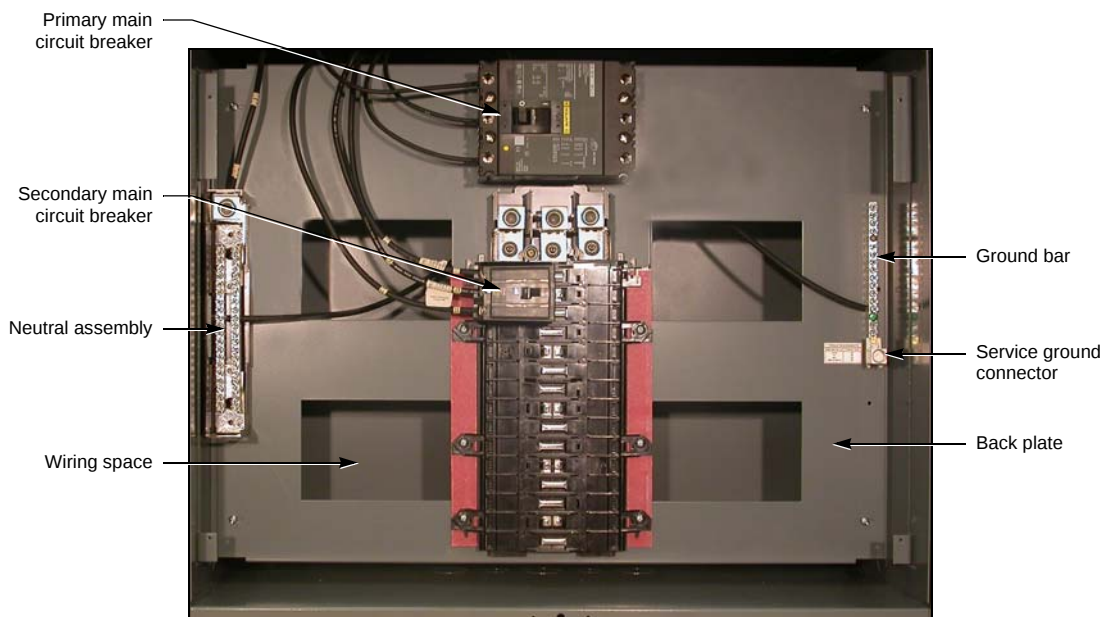
Standard Square D brand QO plug-on branch circuit breakers or Qwik-Gard ground fault circuit breakers may be ordered from any Schneider Electric distributor as required.

Shunt trip capability on the primary circuit breaker is available by special order if your local fire department requires remote tripping provisions where used as service equipment.

UL Listed, electrostatically shielded Mini Power-Zone units are also available by special order.



Interior view showing primary main, secondary main, and plug-on panel.



Mini Power-Zone® Unit Substation Selection Tables

Selection Tables

NOTE: The enclosure drawings referenced in the Enclosure column of the selection tables are shown on pages 10–15. The wiring diagrams referenced in the selection tables are shown on page 16.

Single Phase

480 Volt Primary, Load Center Interior, Interrupt Rating 18 kAIR, NEMA Type 3R

kVA	Part Number	Primary Main	Secondary Main	Feeder Circuit Breakers			Enclosure	Wiring Diagram
				Maximum Number		Maximum Ampere Rating		
				1 pole	2 pole			
5	MPZ5S40F	FAL24015	QO230	10	5	20	A	i
7.5	MPZ7S40F	FAL24020	QO240	10	5	30	A	i
10	MPZ10S40F	FAL24030	QO260	10	5	40	A	i
15	MPZ15S40F	FAL24060	QO280	24	12	60	B	i
25	MPZ25S40F	FAL24100	QO2125	24	12	100	B	i

480 Volt Primary, NQ Panelboard Interior, Interrupt Rating 18 kAIR, NEMA Type 3R

kVA	Part Number	Primary Main	Secondary Main	Feeder Circuit Breakers			Enclosure	Wiring Diagram
				Maximum Number		Maximum Ampere Rating		
				1 pole	2 pole			
5	MPZB5S40F	FAL24015	QOB230	10	5	20	AA	i
7.5	MPZB7S40F	FAL24020	QOB240	10	5	30	AA	i
10	MPZB10S40F	FAL24030	QOB260	10	5	40	AA	i
15	MPZB15S40F	FAL24060	QOB280	24	12	60	BB	i
25	MPZB25S40F	FAL24100	QOB2125	24	12	100	BB	i

480 Volt Primary, Load Center Interior, Interrupt Rating 25 kAIR, NEMA Type 3R

kVA	Part Number	Primary Main	Secondary Main	Feeder Circuit Breakers			Enclosure	Wiring Diagram
				Maximum Number		Maximum Ampere Rating		
				1 pole	2 pole			
5	MPZ5S40F25K	FHL26015	QO230	10	5	20	A	i
7.5	MPZ7S40F25K	FHL26020	QO240	10	5	30	A	i
10	MPZ10S40F25K	FHL26030	QO260	10	5	40	A	i
15	MPZ15S40F25K	FHL26060	QO280	24	12	60	B	i
25	MPZ25S40F25K	FHL26100	QO2125	24	12	100	B	i

480 Volt Primary, NQ Panelboard Interior, Interrupt Rating 25 kAIR, NEMA Type 3R

kVA	Part Number	Primary Main	Secondary Main	Feeder Circuit Breakers			Enclosure	Wiring Diagram
				Maximum Number		Maximum Ampere Rating		
				1 pole	2 pole			
5	MPZB5S40F25K	FHL26015	QOB230	10	5	20	AA	i
7.5	MPZB7S40F25K	FHL26020	QOB240	10	5	30	AA	i
10	MPZB10S40F25K	FHL26030	QOB260	10	5	40	AA	i
15	MPZB15S40F25K	FHL26060	QOB280	24	12	60	BB	i
25	MPZB25S40F25K	FHL26100	QOB2125	24	12	100	BB	i

Mini Power-Zone® Unit Substation Selection Tables

Single Phase (continued)

480 Volt Primary, NQ Panelboard Interior, Interrupt Rating 65 kAIR, NEMA Type 3R

kVA	Part Number	Primary Main	Secondary Main	Feeder Circuit Breakers			Enclosure	Wiring Diagram
				Maximum Number		Maximum Ampere Rating		
				1 pole	2 pole			
5	MPZB5S40F65K	HJL26015	QOB230	10	5	20	AA	i
7.5	MPZB7S40F65K	HJL26020	QOB240	10	5	30	AA	i
10	MPZB10S40F65K	HJL26030	QOB260	10	5	40	AA	i
15	MPZB15S40F65K	HJL26060	QOB280	24	12	60	BB	i
25	MPZB25S40F65K	HJL26100	QOB2125	24	12	100	BB	i

Single Phase with 316 Stainless Steel Enclosure

480 Volt Primary, Load Center Interior, Interrupt Rating 18 kAIR, NEMA Type 3R

kVA	Part Number	Primary Main	Secondary Main	Feeder Circuit Breakers			Enclosure	Wiring Diagram
				Maximum Number		Maximum Ampere Rating		
				1 pole	2 pole			
5	MPZ5S40FSS	FAL24015	QO230	10	5	20	A	i
7.5	MPZ7S40FSS	FAL24020	QO240	10	5	30	A	i
10	MPZ10S40FSS	FAL24030	QO260	10	5	40	A	i
15	MPZ15S40FSS	FAL24060	QO280	24	12	60	B	i
25	MPZ25S40FSS	FAL24100	QO2125	24	12	100	B	i

480 Volt Primary, NQ Panelboard Interior, Interrupt Rating 18 kAIR, NEMA Type 3R

kVA	Part Number	Primary Main	Secondary Main	Feeder Circuit Breakers			Enclosure	Wiring Diagram
				Maximum Number		Maximum Ampere Rating		
				1 pole	2 pole			
5	MPZB5S40FSS	FAL24015	QOB230	10	5	20	AA	i
7.5	MPZB7S40FSS	FAL24020	QOB240	10	5	30	AA	i
10	MPZB10S40FSS	FAL24030	QOB260	10	5	40	AA	i
15	MPZB15S40FSS	FAL24060	QOB280	24	12	60	BB	i
25	MPZB25S40FSS	FAL24100	QOB2125	24	12	100	BB	i

Mini Power-Zone® Unit Substation Selection Tables

Three Phase

480 Volt Primary, Load Center Interior, Interrupt Rating 18 kAIR, NEMA Type 3R

kVA	Part Number	Primary Main	Secondary Main	Feeder Circuit Breakers			Enclosure	Wiring Diagram
				Maximum Number		Maximum Ampere Rating		
				1 pole	3 pole			
15	MPZ15T2F	FAL34040	QO360	24	8	40	C	ii
22.5	MPZ22T2F	FAL34070	QO380	24	8	60	C	ii
30	MPZ30T2F	FAL34090	QO3100	24	8	80	C	iii

480 Volt Primary, NQ Panelboard Interior, Interrupt Rating 18 kAIR, NEMA Type 3R

kVA	Part Number	Primary Main	Secondary Main	Feeder Circuit Breakers			Enclosure	Wiring Diagram
				Maximum Number		Maximum Ampere Rating		
				1 pole	3 pole			
15	MPZB15T2F	FAL34040	QOB360	24	8	40	CC	ii
22.5	MPZB22T2F	FAL34070	QOB380	24	8	60	CC	ii
30	MPZB30T2F	FAL34090	QOB3100	24	8	80	CC	iii

480 Volt Primary, Load Center Interior, Interrupt Rating 25 kAIR, NEMA Type 3R

kVA	Part Number	Primary Main	Secondary Main	Feeder Circuit Breakers			Enclosure	Wiring Diagram
				Maximum Number		Maximum Ampere Rating		
				1 pole	3 pole			
15	MPZ15T2F25K	FAL34040	QO360	24	8	40	C	ii
22.5	MPZ22T2F25K	FAL34070	QO380	24	8	60	C	ii
30	MPZ30T2F25K	FAL34090	QO3100	24	8	80	C	iii

480 Volt Primary, NQ Panelboard Interior, Interrupt Rating 25 kAIR, NEMA Type 3R

kVA	Part Number	Primary Main	Secondary Main	Feeder Circuit Breakers			Enclosure	Wiring Diagram
				Maximum Number		Maximum Ampere Rating		
				1 pole	3 pole			
15	MPZB15T2F25K	FAL34040	QOB360	24	8	40	CC	ii
22.5	MPZB22T2F25K	FAL34070	QOB380	24	8	60	CC	ii
30	MPZB30T2F25K	FAL34090	QOB3100	24	8	80	CC	iii

480 Volt Primary, NQ Panelboard Interior, Interrupt Rating 65 kAIR, NEMA Type 3R

kVA	Part Number	Primary Main	Secondary Main	Feeder Circuit Breakers			Enclosure	Wiring Diagram
				Maximum Number		Maximum Ampere Rating		
				1 pole	3 pole			
15	MPZB15T2F65K	HJL34040	QOB360	24	8	40	CC	ii
22.5	MPZB22T2F65K	HJL34070	QOB380	24	8	60	CC	ii
30	MPZB30T2F65K	HJL34090	QOB3100	24	8	80	CC	iii

Three Phase with 316 Stainless Steel Enclosure

480 Volt Primary, Load Center Interior, Interrupt Rating 18 kAIR, NEMA Type 3R

kVA	Part Number	Primary Main	Secondary Main	Feeder Circuit Breakers			Enclosure	Wiring Diagram
				Maximum Number		Maximum Ampere Rating		
				1 pole	3 pole			
15	MPZ15T2FSS	FAL34040	QO360	24	8	40	C	ii
22.5	MPZ22T2FSS	FAL34070	QO380	24	8	60	C	ii
30	MPZ30T2FSS	FAL34090	QO3100	24	8	80	C	iii

480 Volt Primary, NQ Panelboard Interior, Interrupt Rating 18 kAIR, NEMA Type 3R

kVA	Part Number	Primary Main	Secondary Main	Feeder Circuit Breakers			Enclosure	Wiring Diagram
				Maximum Number		Maximum Ampere Rating		
				1 pole	3 pole			
15	MPZB15T2FSS	FAL34040	QOB360	24	8	40	CC	ii
22.5	MPZB22T2FSS	FAL34070	QOB380	24	8	60	CC	ii
30	MPZB30T2FSS	FAL34090	QOB3100	24	8	80	CC	iii

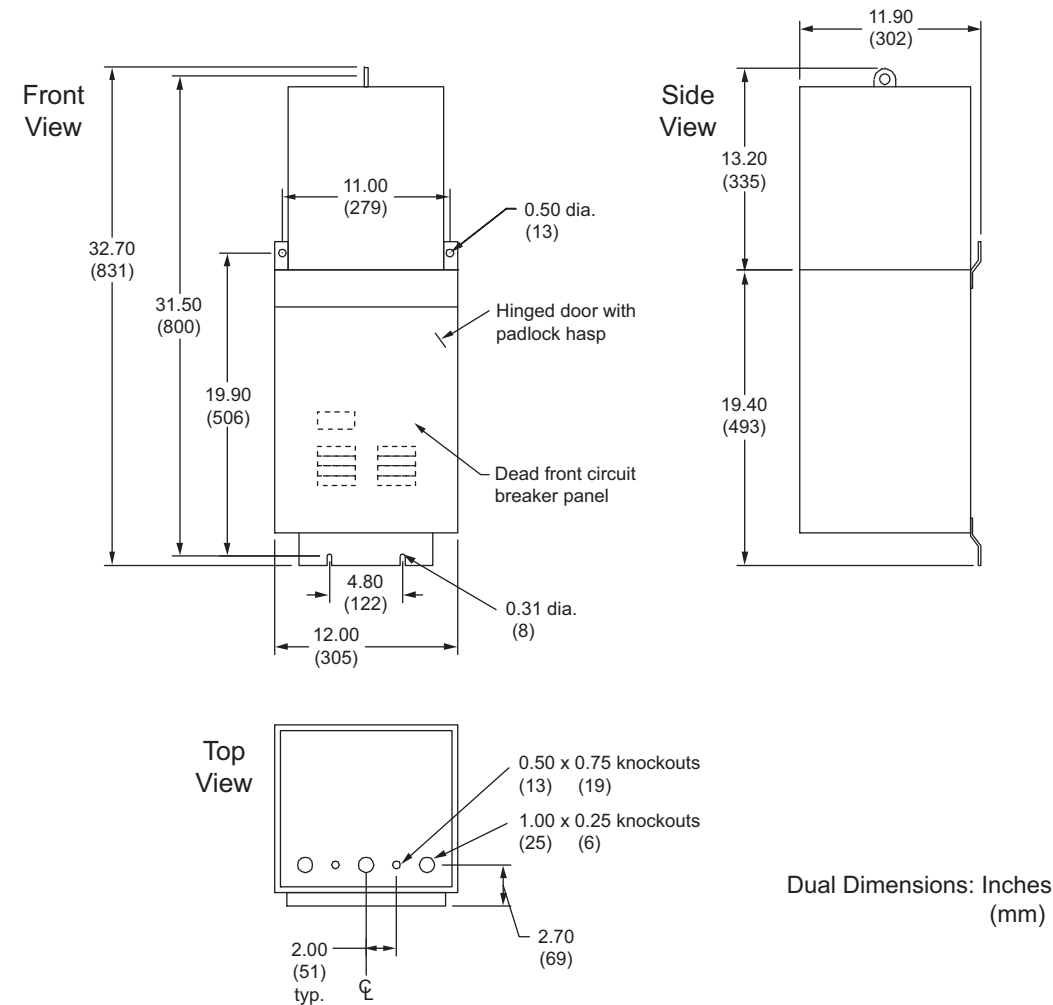
Made-to-Order Units

- Secondary voltages are always:
 - Single phase: 120/240
 - Three phase: 208Y/120
- Primary voltage options are:
 - Single Phase
 - 600 Volts
 - 240 Volts
 - 208 Volts
 - Three Phase
 - 600 Volts
 - 240 Volts
 - 208 Volts
- Transformer with electrostatic shielding
- Temperature rise 80°C on transformer
 - 5 to 15 kVA, single phase (not available on 25 kVA)
 - 15 to 22.5 kVA, three phase (not available on 30 kVA)
- Primary circuit breaker options
 - Shunt trip, 120 Volts
- Other packaged products available
 - Transformer combo available as floor mounted switchboards: 15 to 225 kVA; see the current edition of the Schneider Electric Digest

Mini Power-Zone® Unit Substation
Enclosure Drawings

Enclosure Drawings

Single Phase—Enclosure A

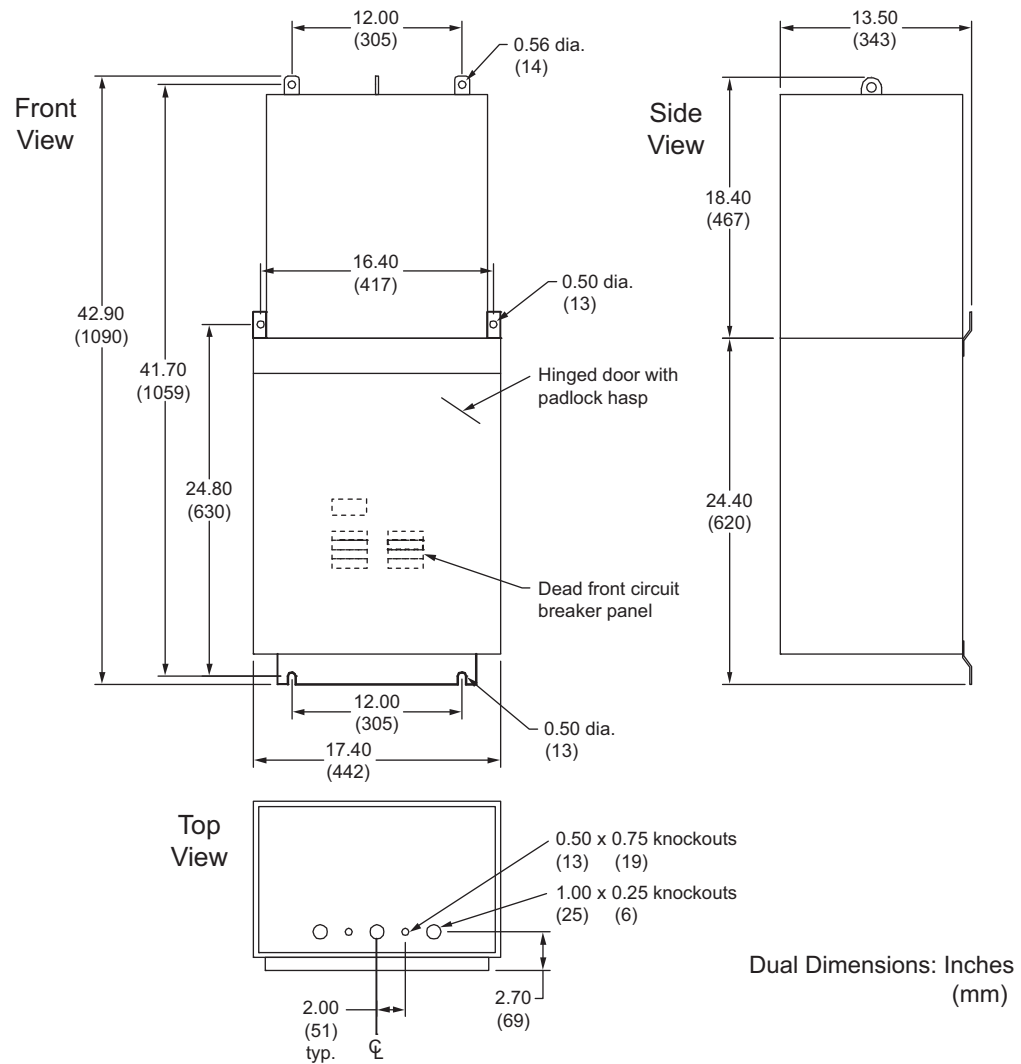


Replacement Parts

Item	Catalog Number
Box	39002-350-50
Dead front	39002-360-01
Hinged cover	39002-351-01
Back plate	39002-353-01
Ground bar	PK18GTA

Mini Power-Zone® Unit Substation Enclosure Drawings

Single Phase—Enclosure B

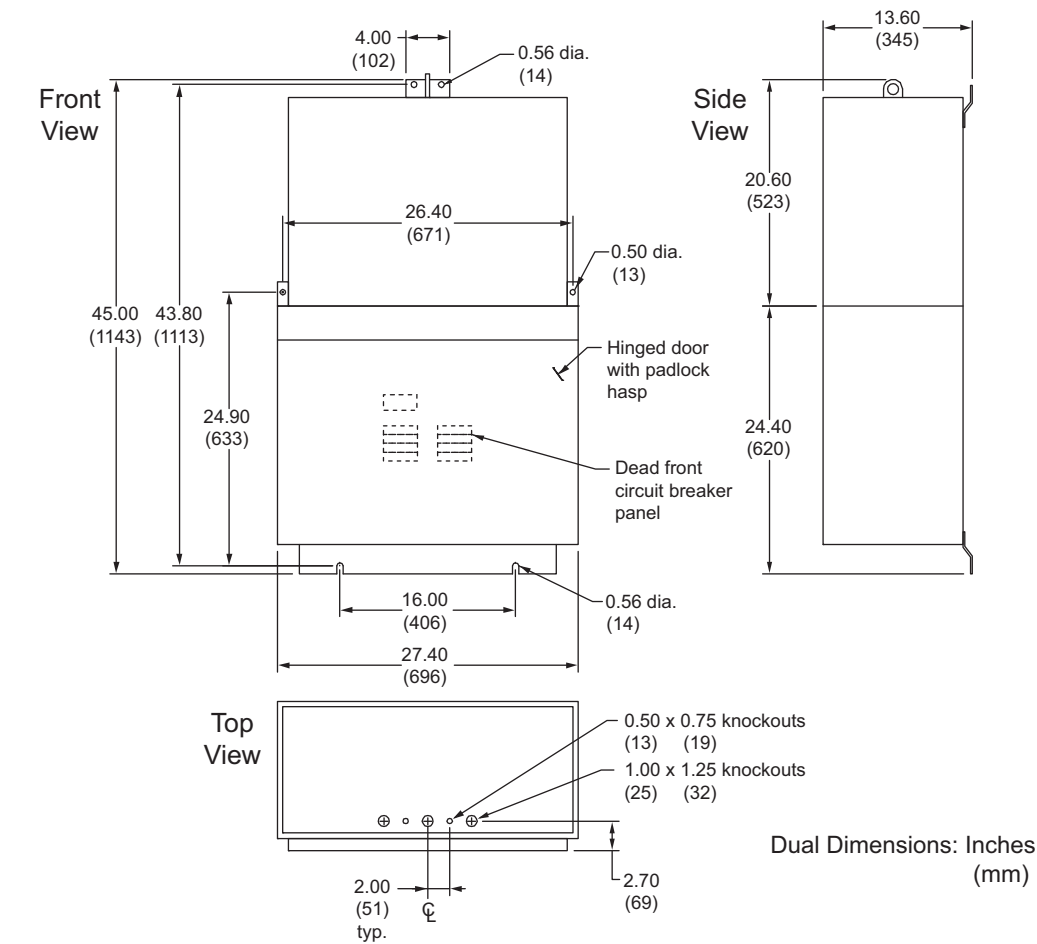


Replacement Parts

Item	Catalog Number
Box	39002-366-50
Dead front	39002-387-01
Hinged cover	39002-368-01
Back plate	39002-369-01
Ground bar	PK18GTA
Neutral assembly	SN-38

Mini Power-Zone® Unit Substation
Enclosure Drawings

Three Phase—Enclosure C

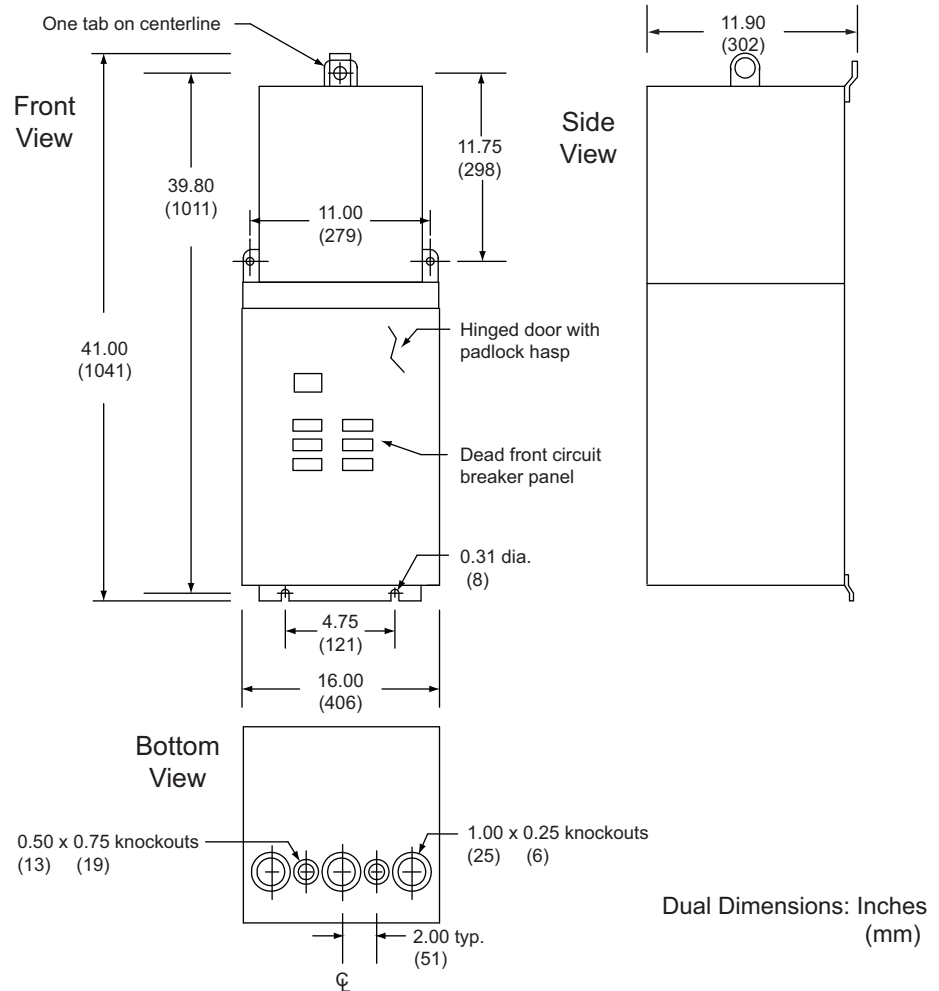


Replacement Parts

Item	Catalog Number
Box	39002-400-50
Dead front	39007-023-01
Hinged cover	39002-388-01
Back plate	39002-389-01
Ground bar	PK18GTA
Neutral assembly	SN-38

Mini Power-Zone® Unit Substation Enclosure Drawings

Single Phase—Enclosure AA

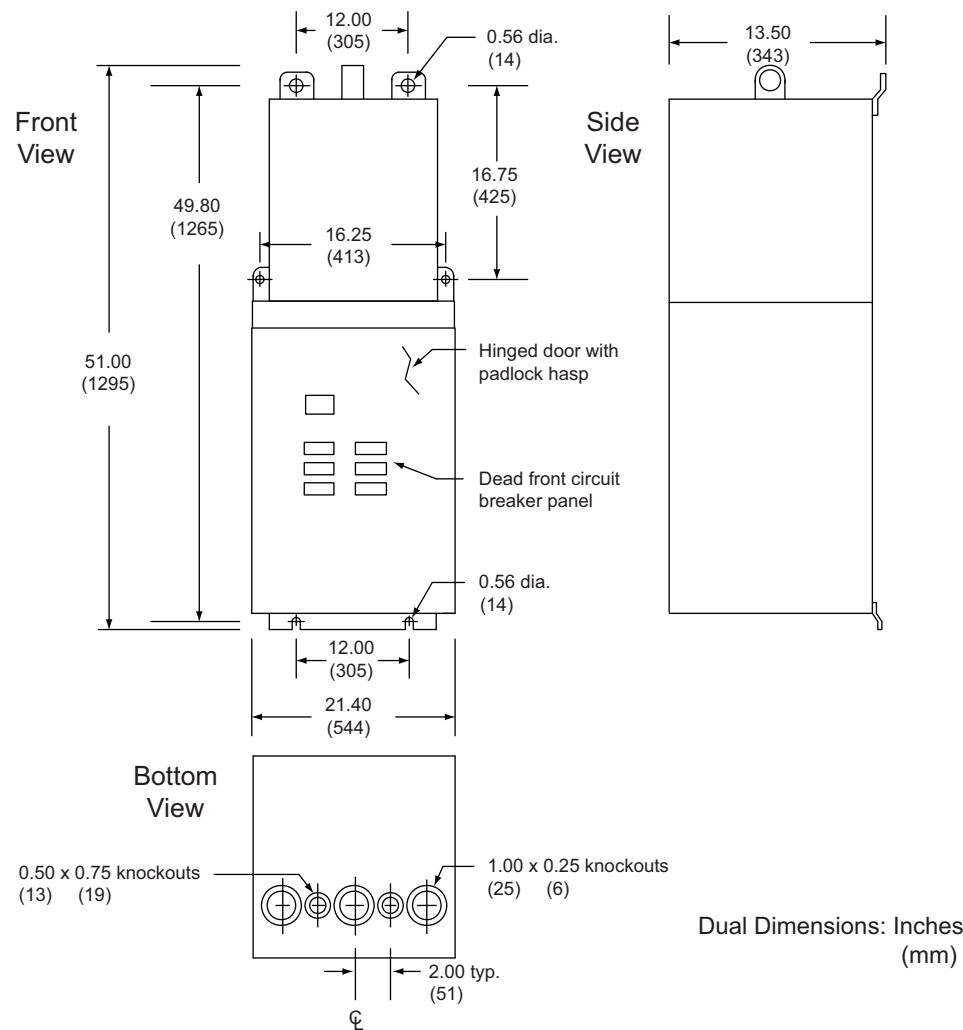


Replacement Parts

Item	Catalog Number
Box	39002-412-50
Dead front	39002-412-07
Hinged cover	39002-412-08
Back plate	39002-419-01
Ground bar	PK18GTA
Neutral assembly	SN-38

Mini Power-Zone® Unit Substation
Enclosure Drawings

Single Phase—Enclosure BB

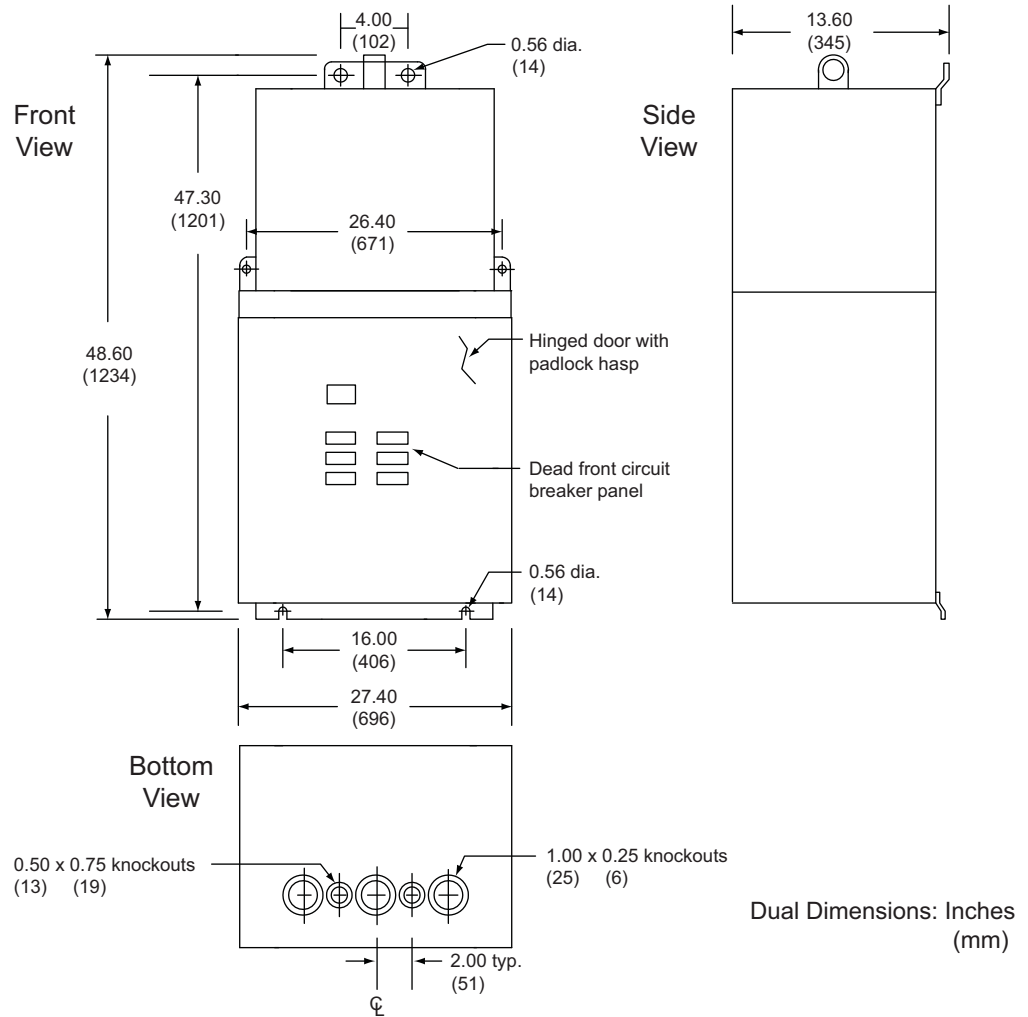


Replacement Parts

Item	Catalog Number
Box and back plate	39002-431-50
Dead front	39002-431-05
Hinged cover	39002-431-06
Ground bar	PK18GTA
Neutral assembly	SN-38

Mini Power-Zone® Unit Substation Enclosure Drawings

Three Phase—Enclosure CC

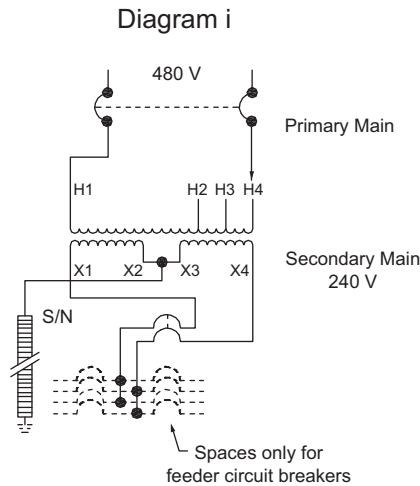


Replacement Parts

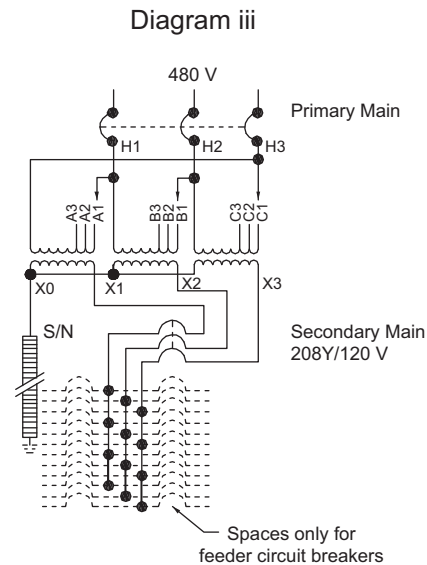
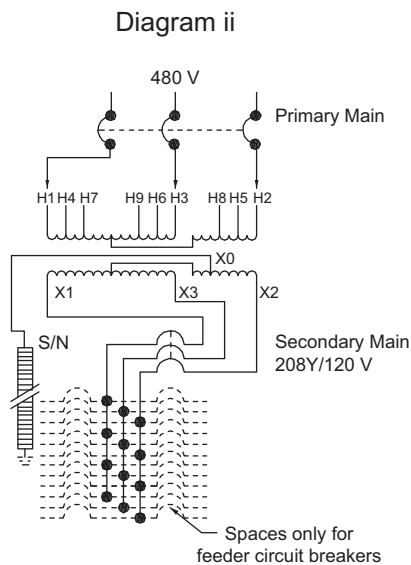
Item	Catalog Number
Box and back plate	39007-189-50
Dead front	39007-186-02
Hinged cover	39002-416-01
Ground bar	PK18GTA
Neutral assembly	SN-38

Wiring Diagrams

Single Phase



Three Phase



Additional Information

Designed for Ease of Installation

The Mini Power-Zone Unit Substation has a unique two-part construction that provides installation flexibility. This two-part construction uses removable transformers, available from factory stock, which can be replaced without disturbing external panelboard wiring. The transformer and panelboard can be mounted one part at a time if there is a space or handling problem.

The panelboard can be removed and wired first, if desired. The transformer simply mounts on top of the panelboard, and the primary and secondary leads are re-connected to the main circuit breakers.

All sizes are carried in Schneider Electric warehouse system stock. Each comes complete with the transformer and the main primary and secondary circuit breakers, all sized in accordance with NEC requirements. Branch circuit breakers are supplied separately.

Replacement Transformers and Interiors

Does not include backfeed secondary main circuit breaker

Phase	kVA	Catalog Number		
		Transformer	Interior	
			Load Center	Panelboard
1	5	MPT5S40F	QON30CCI	NQM18L1C
	7.5	MPT7S40F		
	10	MPT10S40F		
	15	MPT15S40F		NQM30L2C
	25	MPT25S40F		
3	15	MPT15T2F	QON330L200	NQM430L1C
	22.5	MPT22T2F		
	30	MPT30T2F		

Special Applications

Solar Photovoltaic Systems

- NEC 690.64 Point of Connection

The output of a photovoltaic (PV) utility interactive inverter can be connected to either the line or load side of the utility service, based on the system design and the requirements found in NEC 690.64. Mini Power-Zone units are ideal where voltage transformation is needed. The units include both primary and secondary overcurrent protective devices along with panelboard mounted devices for each inverter output.

Particular attention must be paid for load side connections and the requirements of NEC 690.64(B). If the panelboard in the Mini Power-Zone unit contains overcurrent protective devices for both PV inverter sources and system branch circuits or feeders, the sum of the ampere ratings of devices supplying power to the panelboard cannot exceed 120% of its ratings to comply with 690.64(B)(2). In addition, consider 690.64(B)(7), where the sum of the ampere ratings of devices supplying power exceeds the panelboard rating the devices used to connect PV inverters must be located at the opposite end from the input feeder or main circuit location. Since the panelboard devices are backed from the PV inverters, hold down brackets are required to comply with 690.64(B)(6). Contact your local Schneider Electric representative for specific application assistance on using Mini Power-Zone units in PV systems.

Mini Power-Zone® Unit Substation

Product Specifications

- NEC 690.9 (B) Power Transformers

Must meet NEC 450.3 for overcurrent protection for primary protection.

Since the Mini Power-Zone unit will be used in both directions, the main circuit breakers must both comply with the secondary overcurrent protection limit of 125% maximum. That being the case, the limits for the primary circuit breakers at 480 V are as shown in the following table.

kVA	Phase	480 V Current	125% Handle Rating
5	1	10.42	15 ¹
7.5	1	15.63	20 ¹
10	1	20.83	30 ¹
15	1	31.25	40
25	1	50.08	70
15	3	18.04	25
22.5	3	27.06	35
30	3	36.08	50

¹ The standard single phase 5, 7.5, and 10 kVA circuit breakers comply with NEC 690.9 (B). Others will have to be quoted as special orders to meet the requirement.

Product Specifications

Unit Substations

UL Listed per UL 1062 File E92978

Transformers

Specification Number: 26 20 00.16

Product Name: DRY TYPE RESIN ENCAPSULATED TRANSFORMERS

Primary Overcurrent Protection (Circuit Breaker)

Specification Number: 26 28 16.14

Product Name: MOLDED CASE CIRCUIT BREAKERS

Secondary Panelboard and Secondary Main

Specification Number: 26 24 19.05

Product Name: LIGHTING AND APPLIANCE BRANCH CIRCUIT LOAD CENTERS

or

Specification Number: 26 24 16.14

Product Name: LIGHTING AND APPLIANCE BRANCH CIRCUIT PANELBOARDS 240 VAC, 48 VDC MAXIMUM

Schneider Electric

1010 Airpark Center Drive
Nashville, TN 37217 USA
1-888-Square D
1-888-778-2733
www.schneider-electric.us

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09/2009