

Bulletin 1232/1233 NEMA Pump Control Panels — Narrow Enclosure

Selection Guide

Table of Contents

Description	Page
Bulletin 1232	2
Bulletin 1233	3
Overload Relay Code Selection	4
Modifications	5
Approximate Dimensions	6

NEMA Pump Control Panels — Narrow Enclosure

Product Overview/Product Selection



Bulletin 1232 — NEMA Pump Control Panels — Narrow Enclosure

- Narrow Enclosure Size when Extra Panel Space is Not Required
- NEMA Starter Sizes 1...3
- Fusible Disconnect Type
- Painted Metal Enclosures: Type 3R
- Overload Relays — Eutectic or Solid-State
- Modifications — Factory-Installed
- Accessories — Field-Installed
- Service Entrance Rated

Table of Contents

Overload Relay Code Selection 4

Modifications 5

Approximate Dimensions 6

Standards and Certifications

cULus (File No. E125316)

Product Selection

Fusible Disconnect Type with Class H Fuse Clips

Heater Elements — Starters with eutectic alloy overload relays require three heater elements. Refer to the Industrial Controls catalog for heater element selection tables.

3Ø ● 600V AC Maximum ● 60 Hz ● With 3-Pole Overload Protection

NEMA Size	Continuous Ampere Rating (A)	Maximum Horsepower Rating Full Load Current Must Not Exceed "Continuous Ampere Rating"				Line Voltage (V)	Fuse Clip Rating Amperes (A) Fuses not included. Select on basis of National Electrical Code.	Type 3R Rainproof with Extra Panel Space
		Motor Voltage						Cat. No. ❶
		200V	230V	50 Hz 380...415V	460...575V			
1	27	7-1/2	7-1/2	—	—	208...240	30 ❷	1232-BN❸-❹-24
		—	—	10	10	480...600	30 ❷	1232-BN❸-❹-24
		7-1/2	7-1/2	—	—	208...240	60 ❷	1232-BN❸-❹-25
		—	—	10	10	480...600	60 ❷	1232-BN❸-❹-25
2	45	10	15	—	—	208...240	60 ❷	1232-CN❸-❹-25
		—	—	25	25	480...600	60 ❷	1232-CN❸-❹-25
		10	15	—	—	208...240	100 ❷	1232-CN❸-❹-26
		—	—	25	25	480...600	100 ❷	1232-CN❸-❹-26
3	90	25	30	—	—	208...240	100 ❷	1232-DN❸-❹-26
		—	—	50	50	480...600	100 ❷	1232-DN❸-❹-26
		25	30	—	—	208...240	200 ❷	1232-DN❸-❹-27
		—	—	50	50	480...600	200 ❷	1232-DN❸-❹-27

⊗ Voltage Suffix Code

The cat. no. as listed is incomplete. Select a Voltage Suffix Code from the table below to complete the cat. no. Example: **Cat. No. 1232-BN❸-❹-24** becomes **Cat. No. 1232-BNA❸-❹-24**. For other voltages, consult your local Allen-Bradley distributor.

Voltage ❸		208V	230...240V	460...480V	575...600V
Common Control	60 Hz	H	A	B	C
Transformer Control ❹		AD	AD	CD	CD
120V Separate Control (without transformer)		AD	AD	CD	CD

⊗ Overload Relay Code

Use to order solid-state overload relay. Do not use when ordering eutectic alloy overload relay. The cat. no. as listed is incomplete. Select an overload relay code from page 4 to complete the cat. no. Example: **Cat. No. 1232-BNA❸-❹-24** becomes **Cat. No. 1232-BNA❸-❹-A2D-24**.

- ❶ Class R fuse clips can be supplied as a factory option in place of Class H clips. To order Class R fuse clips, add an "R" after the cat. no. Example: **Cat. No. 1232-BN❸-❹-24** becomes **Cat. No. 1232-BN❸-❹-24R**. Class H fuse clips will accept Class R fuses. However, only Class R fuse clips are the rejection type which limit their use to Class R fuses. To order Class J fuse clips, add a "J" after the cat. no. Example: **Cat. No. 1232-BN❸-❹-24** becomes **Cat. No. 1232-BN❸-❹-24J**.
- ❷ Some applications may require time-delay fuses when this size fuse clip is used.
- ❸ Starters are suitable for use on 50 Hz. Consult your local Allen-Bradley distributor.
- ❹ When selecting a factory-installed control circuit transformer (see Modifications page 5), use the Common Control Voltage Suffix Code to denote the transformer primary voltage. The starter coil and transformer secondary voltage will both be 120V by default. Example: **Cat. No. 1232-BNB❸-❹-24** will have a transformer with a 480V primary/120V secondary voltage and a 120V starter coil. If a starter coil voltage other than 120V is desired, a second Voltage Suffix Code must be added to denote the coil/transformer secondary voltage. Example: **Cat. No. 1232-BNB❸-❹-24** will have a transformer with a 480V primary/24V secondary and a 24V starter coil.



Bulletin 1233 — NEMA Pump Control Panels — Narrow Enclosure

- Narrow Enclosure Size when Extra Panel Space is Not Required
- NEMA Starter Sizes 1...3
- Circuit Breaker Type
- Painted Metal Enclosures: Type 3R
- Overload Relays — Eutectic or Solid-State
- Modifications — Factory-Installed
- Accessories — Field-Installed
- Service Entrance Rated

Table of Contents

Overload Relay Code Selection 4

Modifications 5

Approximate Dimensions 6

Standards and Certifications

cULus (File No. E125316)

Product Selection

Circuit Breaker Type

Heater Elements — Starters with eutectic alloy overload relays require three heater elements. Refer to the Industrial Controls catalog for heater element selection tables.

3Ø ● 600V AC Maximum ● 60 Hz ● With 3-Pole Overload Protection						
NEMA Size	Continuous Ampere Rating (A)	Maximum Horsepower Rating				Type 3R Rainproof with Extra Panel Space
		Full Load Current Must Not Exceed "Continuous Ampere Rating"				
		Motor Voltage				
		200V	230V	460V	575V	Cat. No.
1	27	0...1/3	0...1/3	—	—	1233-BN-32
		1/2...1	1/2...1	0...1	0...1	1233-BN-35
		1-1/2...3	1-1/2...3	1-1/2...3	1-1/2...3	1233-BN-38
		5	—	—	—	1233-BN-39
		7-1/2	5...7-1/2	5...7-1/2	5...7-1/2	1233-BN-40
2	45	—	—	10	10	1233-BN-41
		10	10	—	—	1233-CN-41
		—	15	15	15	1233-CN-42
		—	—	20...25	20...25	1233-CN-44
3	90	15...25	25	—	—	1233-DN-44
		—	30	—	30	1233-DN-45
		—	—	30...50	40...50	1233-DN-47

⊗ **Voltage Suffix Code**

The cat. no. as listed is incomplete. Select a Voltage Suffix Code from the table below to complete the cat. no. Example: **Cat. No. 1233-BN-35** becomes **Cat. No. 1233-BNB-35**. For other voltages, consult your local Allen-Bradley distributor.

Voltage ⊕		208V	230...240V	460...480V	575...600V
Common Control	60 Hz	H	A	B	C
Transformer Control ⊕		HD	AD	BD	CD
120V Separate Control (without transformer)					

⊕ **Overload Relay Code**

Use to order solid-state overload relay. Do not use when ordering eutectic alloy overload relay. The cat. no. as listed is incomplete. Select an overload relay code from page 4 to complete the cat. no. Example: **Cat. No. 1233-BNB-35** becomes **Cat. No. 1233-BNB-A2D-35**.

- ⊕ Starters are suitable for use on 50 Hz. Consult your local Allen-Bradley distributor. For 380...415V, 50 Hz motor voltage, order entry must specify actual horsepower.
- ⊕ When selecting a factory-installed control circuit transformer (see Modifications page 5), use the Common Control Voltage Suffix Code to denote the transformer primary voltage. The starter coil and transformer secondary voltage will both be 120V by default. Example: **Cat. No. 1233-BNB-6P-35** will have a transformer with a 480V primary/120V secondary voltage and a 120V starter coil. If a starter coil voltage other than 120V is desired, a second Voltage Suffix Code must be added to denote the coil/transformer secondary voltage. Example: **Cat. No. 1233-BNB-J-6P-35** will have a transformer with a 480V primary/24V secondary and a 24V starter coil.

AB PLCs

NEMA Pump Control Panels — Narrow Enclosure

Overload Relay Code Selection

Eutectic Alloy Overload Relays — Overload relay codes do not apply. Use cat. no. as listed in product selection tables. Select heater elements from the Industrial Controls catalog.

SMP-1 Solid-State Overload Relay for 3Ø Applications: Class 10, 20, or 30

			Full Load Current Adjustment Range (A)	3Ø Manual Reset Overload Relay Code			3Ø Automatic/Manual Reset Overload Relay Code			
				Class 10	Class 20	Class 30	Class 10	Class 20	Class 30	
			0.1...0.32	A1A	A2A	A3A	A4A	A5A	A6A	
			0.32...1.0	A1C	A2C	A3C	A4C	A5C	A6C	
			1.0...2.9	A1D	A2D	A3D	A4D	A5D	A6D	
			1.6...5.0	A1E	A2E	A3E	A4E	A5E	A6E	
			3.7...12	A1F	A2F	A3F	A4F	A5F	A6F	
			0.19...0.6	A1B	A2B	A3B	A4B	A5B	A6B	
		NEMA Size 1		0.32...1.0	A1C	A2C	A3C	A4C	A5C	A6C
				1.0...2.9	A1D	A2D	A3D	A4D	A5D	A6D
				1.6...5.0	A1E	A2E	A3E	A4E	A5E	A6E
				3.7...12	A1F	A2F	A3F	A4F	A5F	A6F
				5.7...18	A1G	A2G	A3G	A4G	A5G	A6G
				12...38	A1H	A2H	A3H	A4H	A5H	A6H
	NEMA Size 2		5.7...18	A1G	A2G	A3G	A4G	A5G	A6G	
			12...38	A1H	A2H	A3H	A4H	A5H	A6H	
			14...45	A1J	A2J	A3J	A4J	A5J	A6J	
			14...45	A1J	A2J	A3J	A4J	A5J	A6J	
			23...75	A1K	A2K	A3K	A4K	A5K	A6K	
			66...110	A1L	A2L	A3L	A4L	A5L	A6L	
NEMA Size 3										

SMP-2 Solid-State Overload Relay for 3Ø Applications: Automatic/Manual Reset, Class 10, 15, 20, or 30

			Full Load Current Adjustment Range (A)	Automatic/Manual Reset	
				Overload Relay Code	
			0.1...0.32	B1A	
			0.32...1.0	B1C	
			1.0...2.9	B1D	
			1.6...5.0	B1E	
			3.7...12	B1F	
			0.19...0.6	B1B	
		NEMA Size 1		0.32...1.0	B1C
				1.0...2.9	B1D
				1.6...5.0	B1E
				3.7...12	B1F
				5.7...18	B1G
				12...38	B1H
	NEMA Size 2		5.7...18	B1G	
			12...38	B1H	
			14...45	B1J	
			14...45	B1J	
			23...75	B1K	
			66...110	B1L	
NEMA Size 3					

NEMA Pump Control Panels — Narrow Enclosure

Modifications — Factory-Installed

Description of Modification		Suffix No.	Enclosure Type	Starter Size			
				1	2	3	
Pilot Devices in Cover or Flange							
Full Voltage Non-Reversing Single Speed Starters	START-STOP Push Button	1	3R	A	A	A	
	ON-OFF Push Button	1E	3R	A	A	A	
	HAND-OFF-AUTO Selector Switch	3	3R	A	A	A	
	OFF-ON Selector Switch	3E	3R	A	A	A	
	PILOT LIGHT	Transformer Type — Incandescent Bulb	4 ❶	3R	A	A	A
		Transformer Type — LED Bulb	4L ❶	3R	A	A	A
	PUSH-TO-TEST PILOT LIGHT	5 ❶	3R	A	A	A	
	Trans. — Incandescent Bulb	5L ❶	3R	A	A	A	
Control Circuit Transformer Includes 2 Primary Fuses and 1 Secondary Fuse	With Standard Capacity 60 or 50 Hz	6P	3R	A	A	A	
	With Standard Capacity with Fuse Covers	6PC	3R	A	A	A	
	With 100 Watt Extra Capacity 60 or 50 Hz	6XP	3R	A	A	A	
	With 100 Watt Extra Capacity with Fuse Covers	6XPC	3R	A	A	A	
Control Circuit	Auxiliary Contact installed on contactors	N.O.	90	3R	A	A	A
		N.C.	91	3R	A	A	A
	Auxiliary Contact installed on disconnect or circuit breaker	N.O.	98	3R	A	A	A
		N.C.	99	3R	A	A	A
	Control Circuit Fuse Block Less Transformer	1 Fuse — Fuse Included	21	3R	A	A	A
		1 Fuse with Protective Cover — Fuse Included	21C	3R	A	A	A
		2 Fuses — Fuses Included	22	3R	A	A	A
		2 Fuses with Protective Covers — Fuses Included	22C	3R	A	A	A
	Surge Suppression for 120V or 240V AC Coil	17	3R	A	A	A	
	Terminal Blocks (Cat. No. 1492-HC6)	6-Point Block	TB6	3R	A	A	A
Terminal Blocks (Cat. No. 1492-HC12)	12-Point Block	TB12	3R	A	A	A	
Overload Relays (Eutectic Alloy)	N.O. Alarm Contact Adder (Bulletin 592)	9	3R	A	A	A	
	N.C. Alarm Contact Adder (Bulletin 592)	9A	3R	A	A	A	
Auxiliary Relays (Indicate Contact Arrangement and Coil Voltage)	3Ø Powermonitor (Timemark Model 258)	400	3R	A	A	A	
Handles For Disconnect or Circuit Breaker	Painted Metal	412	3R	A	A	A	
Fuse Cover Protective Fuse Cover for Disconnect Switch — 30, 60, and 100 A		414	3R	A	A	A	
Control Relay (Plug-In)	2-Pole	415	3R	A	A	A	
	3-Pole	416	3R	A	A	A	
Timing Relay (Plug-In)	On Delay	417	3R	A	A	A	
	Off Delay	418	3R	A	A	A	
Electrical Interlock	Early Break (1 N.O. and 1 N.C.)	420	3R	A	A	A	
	Early Break (2 N.O. and 2 N.C.)	421	3R	A	A	A	

❶ The suffix number is incomplete. Specify the lens color with the following letters: **A** = Amber; **B** = Blue; **C** = Clear; **G** = Green; **W** = White; **R** = Red.

A = Available

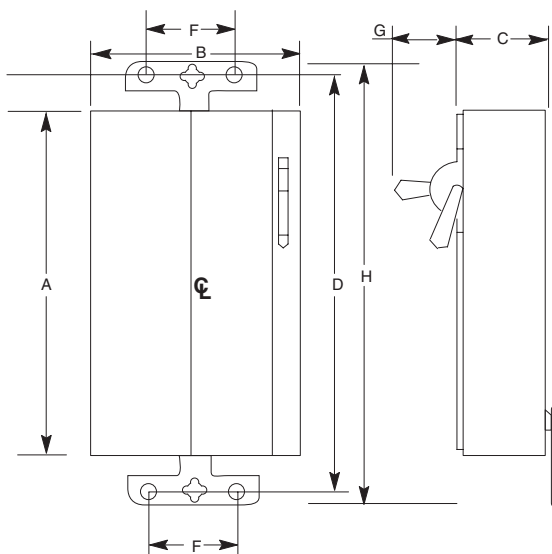
AB PLCs

NEMA Pump Control Panels — Narrow Enclosure

Approximate Dimensions

Type 3R (Enclosure Code N) Rainproof Enclosures without Extra Panel Space

Approximate dimensions are shown in inches (millimeters). Dimensions are not intended to be used for manufacturing purposes.



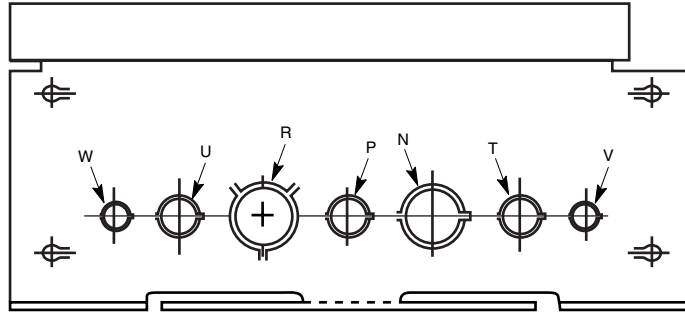
Sizes 1...2

NEMA Size	A Height	B Width	C Depth	D	E	F	G Handle Depth	H	J	Approx. Shipping Weight lbs (kg)
1...2	27.50 (698)	10.5 (267)	8.26 (210)	28.88 (733)	①	7 (178)	5.56 (141)	29.75 (756)	0.81 (21)	40 (18.14)
3	30 (762)	20.5 (521)	8.72 (221)	34.88 (886)	10 (254)	10 (254)	5.56 (141)	36.38 (924)	—	90 (40.82)

① Sizes 1 and 2 have one top mounting hole located on the center line. All sizes in large enclosures have two top mounting holes located as shown.

Type 3R (Enclosure Code N) Rainproof Enclosures without Extra Panel Space, Continued

Approximate dimensions are shown in inches (millimeters). Dimensions are not intended to be used for manufacturing purposes.



NEMA Size	N		P		R		T	
	Inside	Outside	Inside	Outside	Inside	Outside	Inside	Outside
1	1-3/8 (35) 1" Hub	1-23/32 (44) 1-1/4" Hub	7/8 (22) 1/2" Hub	1-1/8 (29) 3/4" Hub	1-23/32 (44) 1-1/4" Hub	1-31/32 (50) 1-1/2" Hub	7/8 (22) 1/2" Hub	1-1/8 (29) 3/4" Hub
2	1-3/8 (35) 1" Hub	1-23/32 (44) 1-1/4" Hub	7/8 (22) 1/2" Hub	1-1/8 (29) 3/4" Hub	1-23/32 (44) 1-1/4" Hub	1-31/32 (50) 1-1/2" Hub	7/8 (22) 1/2" Hub	1-1/8 (29) 3/4" Hub
3	7/8 (22) 1/2" Hub	1-1/8 (29) 3/4" Hub	1-31/32 (50) 1-1/2" Hub	2-15/32 (63) 2" Hub	1-3/8 (35) 1" Hub	1-23/32 (44) 1-1/4" Hub	1-3/8 (35) 1" Hub	1-23/32 (44) 1-1/4" Hub

NEMA Size	U		V		W	
	Inside	Outside	Inside	Outside	Inside	Outside
1	7/8 (22) 1/2" Hub	1-1/8 (29) 3/4" Hub	—	—	7/8 (22) 1/2" Hub	1-1/8 (29) 3/4" Hub
2	7/8 (22) 1/2" Hub	1-1/8 (29) 3/4" Hub	—	—	7/8 (22) 1/2" Hub	1-1/8 (29) 3/4" Hub
3	7/8 (22) 1/2" Hub	1-1/8 (29) 3/4" Hub	1-31/32 (50) 1-1/2" Hub	2-15/32 (63) 2" Hub	3 (76) 2-1/2" Hub	3 (76) 2-1/2" Hub

www.rockwellautomation.com

Corporate Headquarters

Rockwell Automation, 777 East Wisconsin Avenue, Suite 1400, Milwaukee, WI, 53202-5302 USA, Tel: (1) 414.212.5200, Fax: (1) 414.212.5201

Headquarters for Allen-Bradley Products, Rockwell Software Products and Global Manufacturing Solutions

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe: Rockwell Automation SA/NV, Vorstlaan/Boulevard du Souverain 36-BP 3A/B, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

Asia Pacific: Rockwell Automation, 27/F Citicorp Centre, 18 Whitfield Road, Causeway Bay, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Headquarters for Dodge and Reliance Electric Products

Americas: Rockwell Automation, 6040 Ponders Court, Greenville, SC 29615-4617 USA, Tel: (1) 864.297.4800, Fax: (1) 864.281.2433

Europe: Rockwell Automation, Brühlstraße 22, D-74834 Elztal-Dallau, Germany, Tel: (49) 6261 9410, Fax: (49) 6261 1774

Asia Pacific: Rockwell Automation, 55 Newton Road, #11-01/02 Revenue House, Singapore 307987, Tel: (65) 351 6723, Fax: (65) 355 1733

Publication 1232-SG001A-EN-P - March 2003