

InView Marquee Message Display

Catalog Numbers 2706-P92C, 2706-P94C

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Important User Information

Solid state equipment has operational characteristics differing from those of electromechanical equipment. Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls (Publication [SGI-1.1](#) available from your local Rockwell Automation sales office or online at <http://literature.rockwellautomation.com>) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.





In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.

WARNING 	Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.
IMPORTANT	Identifies information that is critical for successful application and understanding of the product.
ATTENTION 	Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard and recognize the consequences.
SHOCK HAZARD 	Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.
BURN HAZARD 	Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.

Wiring and Safety Guidelines

Install the InView display conforming to NFPA 70E, Electrical Safety Requirements for Employee Workplaces. In addition to the NFPA general guidelines, refer to the following:

Careful cable routing helps minimize electrical noise. Route incoming power to the module by a separate path from the communication cables.

TIP

Do not run communications wiring and power wiring in the same conduit.

WARNING**SHOCK HAZARD**

- Maintain separation of circuits. Route the incoming power directly to the power connection terminal block.
- Do not run the power wiring over the logic board or optional Legacy Communication board.

Where communication and wire paths must cross, make their intersection perpendicular.



Grounding helps limit the effects of noise due to electromagnetic interference (EMI). To avoid problems caused by EMI, properly ground all equipment and use shielded cables.

IMPORTANT

Power wiring must be in accordance with Class I, Division 2 wiring methods (Article 501-4(b) of the National Electrical Code, NFPA70) and in accordance with the local authority having jurisdiction.

Hazardous Location Considerations

This equipment is suitable for use in Class I, Division 2, Groups A, B, C and D or non-hazardous location only. The following WARNING statement applies to use in hazardous locations.

The following information applies when operating this equipment in hazardous locations.	Informations sur l'utilisation de cet équipement en environnements dangereux.	
<p>Products marked "CL I, DIV 2, GP A, B, C, D" are suitable for use in Class I Division 2 Groups A, B, C, D, Hazardous Locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest "T" number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local Authority Having Jurisdiction at the time of installation.</p>	<p>Les produits marqués "CL I, DIV 2, GP A, B, C, D" ne conviennent qu'à une utilisation en environnements de Classe I Division 2 Groupes A, B, C, D dangereux et non dangereux. Chaque produit est livré avec des marquages sur sa plaque d'identification qui indiquent le code de température pour les environnements dangereux. Lorsque plusieurs produits sont combinés dans un système, le code de température le plus défavorable (code de température le plus faible) peut être utilisé pour déterminer le code de température global du système. Les combinaisons d'équipements dans le système sont sujettes à inspection par les autorités locales qualifiées au moment de l'installation.</p>	
<p>WARNING</p> 	<p>EXPLOSION HAZARD -</p> <ul style="list-style-type: none"> Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous. Do not disconnect connections to this equipment unless power has been removed or the area is known to be nonhazardous. Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product. Substitution of components may impair suitability for Class I, Division 2. If this product contains batteries, they must only be changed in an area known to be nonhazardous. 	<p>AVERTISSEMENT</p>  <p>RISQUE D'EXPLOSION -</p> <ul style="list-style-type: none"> Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement. Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher les connecteurs. Fixer tous les connecteurs externes reliés à cet équipement à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens fournis avec ce produit. La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe I, Division 2. S'assurer que l'environnement est classé non dangereux avant de changer les piles.

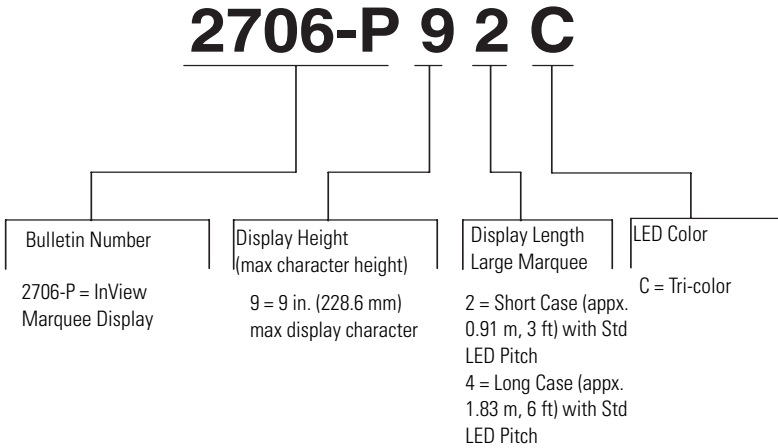
WARNING



This product contains a lithium battery (catalog number 2711P-RY2032). There is a danger of explosion if it is incorrectly replaced. Replace only with the indicated type. Do not replace the battery unless the area is known to be nonhazardous.

Do not dispose of the battery in a fire or incinerator. Dispose of used batteries in accordance with local disposal regulations.

Catalog Number Explanation

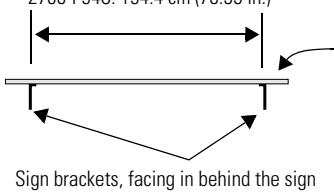


Mount the 2706-P92C and 2706-P94C Displays

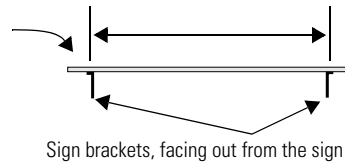
1. Attach the two sign brackets to a wall, ceiling, or other surface.

Be sure to place the brackets so the bracket flanges face appropriately as shown below. Mount the brackets the following distance apart (measured from the center of the mounting holes in each bracket):

Mounted so flanges are hidden behind the sign.
 2706-P92C: 103.0 cm (40.55 in.)
 2706-P94C: 194.4 cm (76.55 in.)



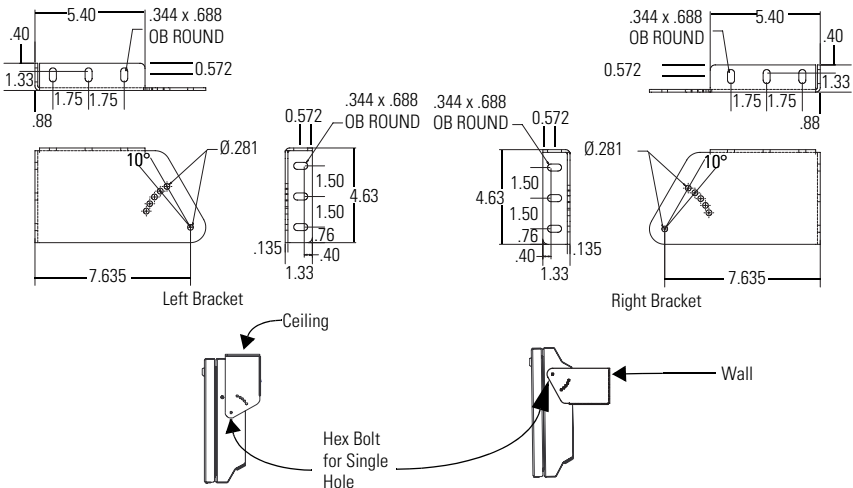
Mounted so flanges show on the sides of the sign.
 2706-P92C: 107.8 cm (43.22 in.)
 2706-P94C: 201.2 cm (79.22 in.)



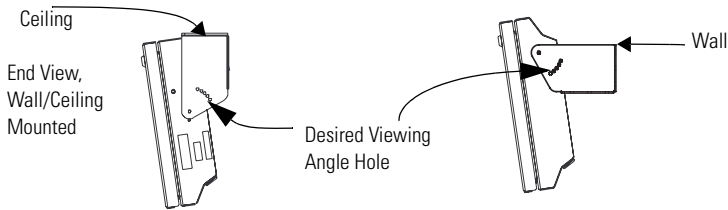
IMPORTANT

Do **not** install the sign directly to drywall or plasterboard. The sign must be fastened to a surface capable of supporting at least four times the weight of the sign.

2. Mount the sign on the sign brackets using the hex bolts supplied. Insert the bolts into the far single holes first, until the desired viewing angle is determined.



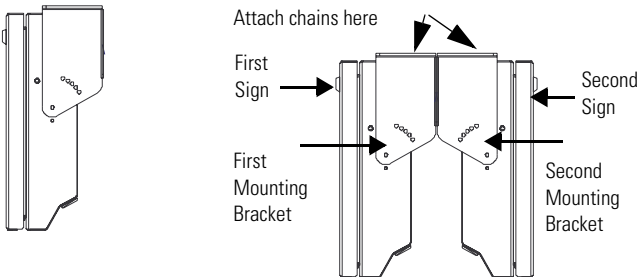
- Tilt the sign to select a viewing angle. To hold the sign in place, inset the remaining bolts into the desired viewing angle hole on each bracket.

**TIP**

Keep a minimum 2.54 cm (1.0 in.) clearance on all sides of the sign for adequate ventilation.

Back-to-back Mounting

- Attach the brackets to the sign in the ceiling mount position. Use the hex bolts supplied.



- Match the signs together back-to-back. Connect them together using a total of six 5/16" bolts and nuts (not supplied).
- Use chains (not supplied) to hang the signs from the ceiling. Attach the chains to the top mounting holes of the bracket.

TIP

Use chains capable of supporting 4 times the total weight of the signs.

Connect the 2706-P92C and 2706-P94C Displays

WARNING

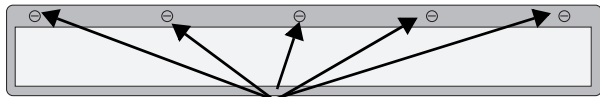


HAZARDOUS VOLTAGE

- Contact with high voltage may cause death or serious injury. Always disconnect power to sign prior to servicing.
- Maintain Separation of circuits. Route the incoming power directly to the power connection terminal block.
- Do not run the power wiring over the logic board or optional Legacy Communication board.

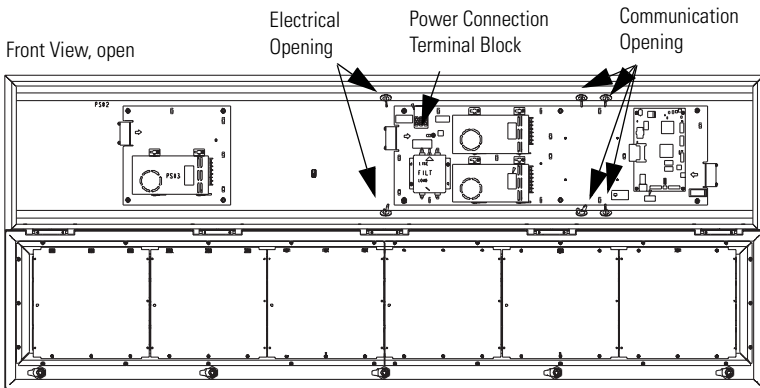
1. Open the front of the sign case by turning the half-turn latches to the left with a large screwdriver. (On the 2706-P92C, there are 3 half-turn latches; on the 2706-P94C there are 5.) Carefully let the front of the case drop forward.

Front View, closed



Half-turn Latches on an 2706-P94C Sign

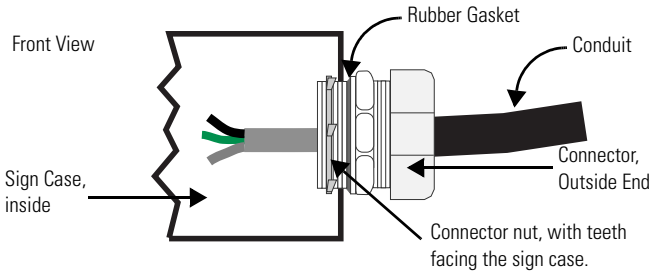
Front View, open



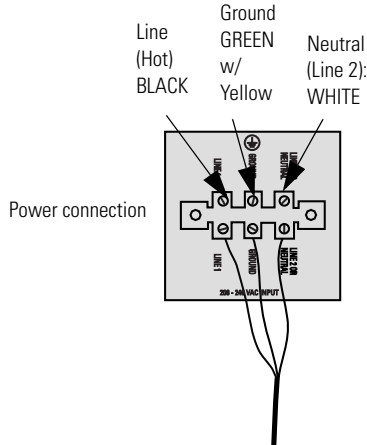
2. Feed electrical cable through 1/2" water-tight conduit, the outside end of the connector (supplied), the electrical opening in the sign case, and then through the inside end of the connector. Screw the inside and outside ends of the connector together until water-tight.

TIP

Use either of the two holes nearest the power connection terminal block.



- Strip the electrical wires back 1/4". Insert the wires into the appropriate terminal connection and tighten the screw to 0.79 N•m (7 lb•in). The terminal block is UL rated for wire ranges of 14 to 8 AWG.



- Remove the necessary hole plugs before connecting the communications cables.

5. Connect the incoming communication wires per the tables below.

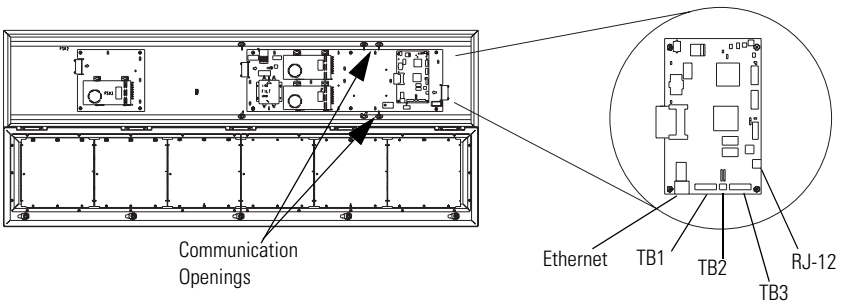
ATTENTION



Use shielded Ethernet cable. Shielded Ethernet cable is required to maintain noise immunity.

The 2706-P Cable1 is used for downloading messages only and must be removed after downloading is complete.

TB2 is used for supplying power to the optional InView Legacy Communication board kit.



TB1 - RS-485

1.GND	4.CH A
2.SHLD	5.CH B
3.COMM	6.TERM

TB2 - Aux +5V

1.+5V	2.GND
-------	-------

TB3 - RS-232

1.TXD	4.CTS
2.RXD	5.GND
3.RTS	6.EGND

Ethernet (RJ-45)⁽¹⁾

1.TD+	5.NC
2.TD-	6.RD-
3.RD+	7.NC
4.NC	8.NC

⁽¹⁾ Use shielded Ethernet cable to maintain noise immunity.

Download Port (RJ-12)⁽¹⁾

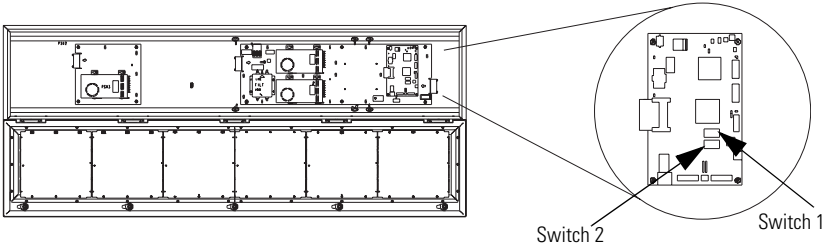
1.Aux +5V	4.RX
2.NC	5.NC
3.TX	6.GND

⁽¹⁾ The 2706-PCable1 is used for downloading messages only and must be removed after downloading is complete.

6. Carefully close the front of the sign case and turn the half-turn latches to the right with a large screwdriver.

Dip Switch Information

There are two dip switches located on the controller board, Switch 1 and Switch 2.



Switch 1

Switch 1 is used to configure the display - RS485 echo enable, baud rate settings, and display size.

- Position 1 enables or disables the echo function.

Enabling the RS485 echo function allows any packets that come in on COM 0 (download, RJ-12 port), COM 1 (RS-232, TB3 port), and the Ethernet TCP/IP port to be sent out the RS485 port. This allows Ethernet TCP/IP and other communication protocols to be converted to RS485 by a single P92 or P94 and then sent out to multiple RS485 networked displays.

TIP

Only enable the echo function on one P9x display.

- Positions 3 and 4 set the baud rate. (See [page 13](#) for default positions.)

If both switches are off, the baud rate can be set via the InView Messaging software. The dip switches take priority over the software setting. If the baud rate is set to 19,200 using the software (positions 3 and 4 set to off) and then set to 9600 using switch 1 (position 3 on and 4 off), the baud rate would then be 9600. Also, once positions 3 and 4 are used to set the baud rate and then they are switched off, the baud rate setting will remain until it is changed by software or a different dip switch setting.

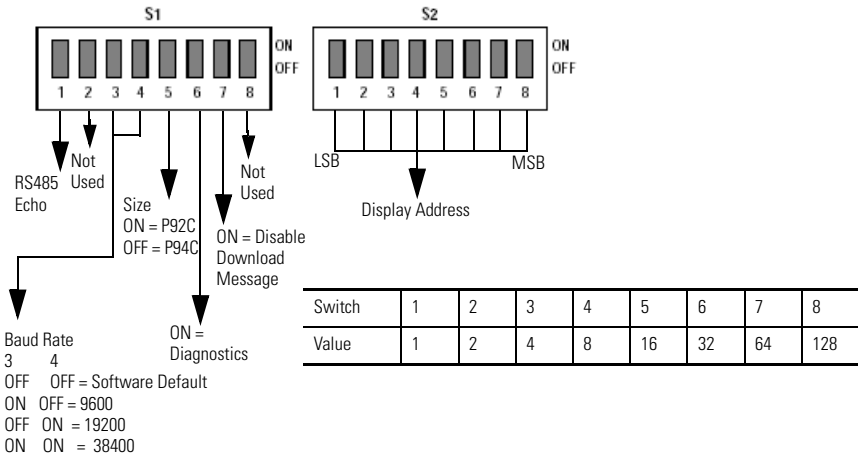
- Position 5 is used to set the display size. This is set by the factory.
- Position 6 is used to turn on diagnostics.
- Position 7 disables download message.

Switch 2

Switch 2 is used to set the serial address of the display. Position 1 is the LSB of the address and position 8 is the MSB of the address.

- If position 1 is on and all other positions are off, the display address will be 1.
- If position 8 is on and all other positions are off, the display address will be 128.
- If all positions are set to off, the serial address can be set using the InView Messaging software.

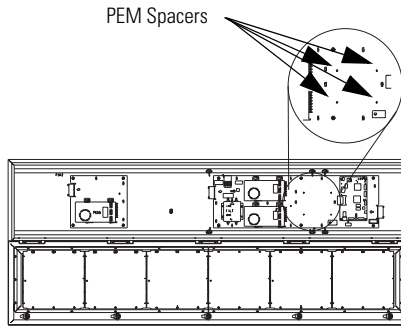
The dip switch setting takes priority over the software setting. If the serial address is set to 2 using the software (all the dip switches set to off) and then switch 2 is used to set the serial address to 3 (position 1 and 2 set to on and the remaining positions set to off), the serial address will then be 3. Also, once Switch 2 is used to set the serial address and then all switch positions are set to off, the serial address setting remains until it is changed by software or the dip switch is set.



Legacy Communications Board Kit

There is an optional Legacy Communications Board Kit available for the P9 series displays. There are a total of six board kits: Remote I/O, DH+, DH-485, ControlNet, DeviceNet, and EtherNet/IP. The Legacy Communications Board Kit converts the six protocols to RS-232. The board kit mounts on the four PEM spacers that are

attached to the internal mounting plate. See publication [2706-IN015](#) for more information on how to install the board kit.



Compact Flash Card

This product uses a Type I Compact Flash Card for message file storage.

2706-P9x Temperature Protection

InView P92C and P94C signs have automatic temperature controls that help to protect the sign from damage when the internal temperature of the sign is too hot to continue normal operation.

- If the internal temperature of the sign reaches a pre-determined “dimming point”, the LED output from the sign is forced into a 50 percent reduced power mode, effectively dimming the brightness of LED output by about 50 percent.
- If the internal temperature of the sign continues to increase, another sensing circuit will execute an automatic shut down to protect the sign from damage. The LED output from the sign is turned off. Two LED pixels will flash in the lower right corner, indicating an auto-shutdown has occurred.
- The dimming and shutdown points are listed in the table below. Once the temperature drops below the auto-shutdown threshold, the LED output is turned on at the dimming level. Once the temperature drops below the dimming threshold, auto-dimming is disabled and the LED brightness is back to 100 percent.

Model	Dimming Point	Auto-shutdown On
2706-P92C	55 °C (131 °F)	75 °C (167 °F)
2706-P94C	55 °C (131 °F)	75 °C (167 °F)

TIP

Take into account the effects of ambient temperature when evaluating mounting locations for the sign. You should always maintain recommended clearance distances around the sign and avoid poorly ventilated mounting locations that could be subject to radiation, convection, conduction or other thermal transfer effects.

Replace the Battery in the InView Message Displays

The terminal contains a lithium battery, which is intended to be replaced during the life of the product.

ATTENTION

The clock module contains lithium. Do not dispose the battery in a fire or incinerator or the clock module may explode. Follow disposal regulations in your area for lithium battery disposal.

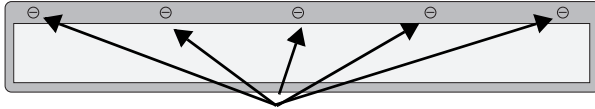


At the end of its life, the used battery should be collected separately from any unsorted municipal waste and recycled.

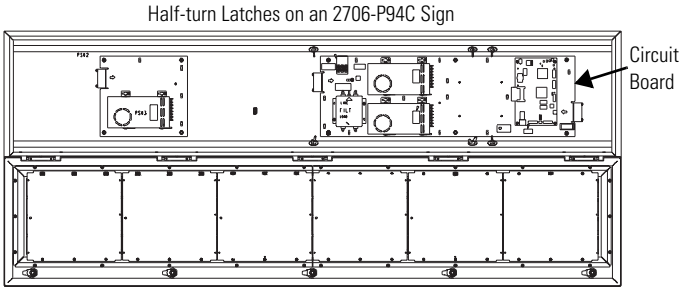
Follow these steps to replace the battery in the InView 2706-P92C or 2706-P94C message displays.

1. Disconnect power from the message display.
2. Turn the half-turn latches all the way to the left until they hit the stop.
3. Carefully lower the door.

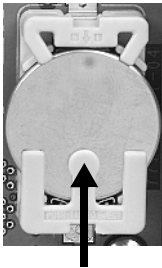
Front View,
closed



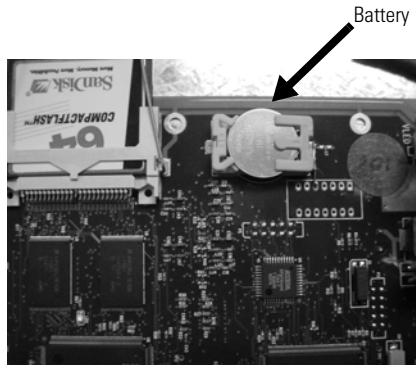
Front View, open



4. Locate the battery on the circuit board.



Press down here to pop battery out.



5. Press down firmly on the middle part of battery retainer clip.
The battery will pop out.
6. Slide the new battery under the 3-prong holder and push down.
7. Raise the door and turn the half-turn latches all the way right until they hit the stop and the door is pulled in.

Specifications

	2706-P92C	2706-P94C
Display		
Display type	LED matrix: Tri-Color (C)	
Display window size (W x H)	91.4 x 24.4 cm (36 x 9.6 in.)	182.9 x 24.4 cm (72 x 9.6 in.)
Display array	120 x 32 pixels	240 x 32 pixels
Center to center pixel spacing (pitch)	0.76 cm (0.3 in.)	
Number of lines	1...5	
Lines of text/character height/ minimum characters per line	1 line/9.6 in./13 ⁽¹⁾ 2 line/4.5 in./13 ⁽¹⁾ 3 line/3.0 in./13 ⁽¹⁾ 4 line/2.1 in./20 ⁽¹⁾ 5 line/1.5 in./24 ⁽¹⁾	1 line/9.6 in./26 ⁽²⁾ 2 line/4.5 in./26 ⁽²⁾ 3 line/3.0 in./26 ⁽²⁾ 4 line/2.1 in./40 ⁽²⁾ 5 line/1.5 in./48 ⁽²⁾
Character set	Standard and Extended ASCII	
Approximate viewing distance	137 m (450 ft)	
Electrical and Environmental		
Input voltage	100...240V AC; 50/60 Hz	
Temperature, operating	0...50 °C (32...122 °F)	
Humidity	5...95% noncondensing	
Ratings	Designed to meet UL types 12 and 13 Designed to meet NEMA 4 Hose Down requirements	
Certifications	cULus, CE and C-Tick	
Enclosure weight, approx.	32 kg (70 lbs)	54.4 kg (120 lbs)
Enclosure dimensions (W x D x H)	105 x 13 x 40 cm (41.14 x 5.25 x 15.9 in.) ⁽¹⁾	196 x 13 x 40 cm (77.2 x 5.25 x 15.9 in.) ⁽²⁾

⁽¹⁾ Display is available in short format (0.91 m, 3 ft).

⁽²⁾ Display is available in long format (1.83 m, 6 ft).

Input Current Requirements for 2706-P92C and 2706-P94C

Line Voltage (VAC)	Frequency (Hz)	100% Display Load (Amp)	50% Display Load (Amp)	25% Display Load (Amp)
100 - P92C	50/60	3.6	2.1	1.3
100 - P94C	50/60	7.1	3.9	2.3
120 - P92C	50/60	2.9	1.7	1.0
120 - P94C	50/60	5.8	3.2	1.9
240 - P92C	50/60	1.4	0.9	0.6
240 - P94C	50/60	2.8	1.6	1.0

Display	Load
100%	Condition - All display pixels are lit in amber
	Usage - Highly unlikely, use this value for sizing input power circuit
50%	Condition - 50% of the display lit in amber (screen full of 32 pixel amber 'B's)
	Usage - Unlikely, not a typical display condition, may be seen with use of bitmaps
25%	Condition - Mixture of red, green and amber characters and spaces
	Usage - Typical display load for most message types

Additional Information

For additional information on communication port wiring and display configuration, refer to the InView Marquee Message Display User Manual, publication [2706-UM016](#).

Notes:

Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products. At <http://support.rockwellautomation.com>, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

For an additional level of technical phone support for installation, configuration and troubleshooting, we offer TechConnect support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://support.rockwellautomation.com>.

Installation Assistance

If you experience a problem within the first 24 hours of installation, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your product up and running.

United States	1.440.646.3434 Monday – Friday, 8 a.m. – 5 p.m. EST
Outside United States	Please contact your local Rockwell Automation representative for any technical support issues.

New Product Satisfaction Return

Rockwell Automation tests all of its products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

United States	Contact your distributor. You must provide a Customer Support case number (call the phone number above to obtain one) to your distributor in order to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

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