

# Scepter PVC Molded Junction Boxes



## Technical Catalog

**Scepter®**  
**JBox™**



ELECTRICAL SYSTEMS

### PVC MOLDED JUNCTION BOXES

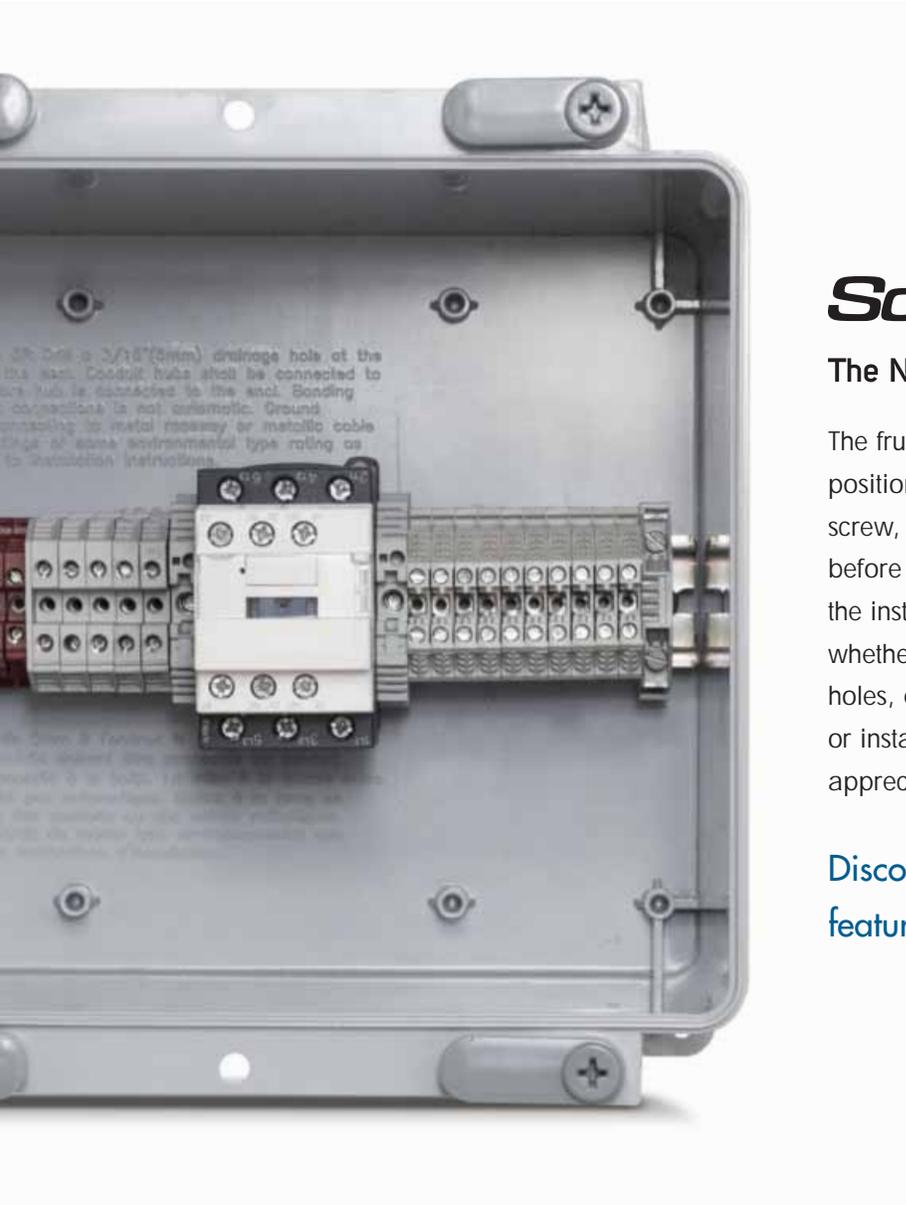
- 4" to 12"
- Fully Certified: NEMA, UL & CSA



**IPEX**

We build tough products for tough environments®

# The **EASIEST** Junction Box you'll **EVER** use



## **Scepter® JBox™**

### The Next Generation Junction Box

The frustrations are gone – no more worries about positioning a gasket or over-tightening a cover screw, and no more loose parts to misplace before installation. We've added features to make the installation of a junction box faster and easier; whether locating and aligning conduit entry holes, easily mounting the box to a wall or pole or installing a cover with only one hand, you will appreciate the new design features.

Discover the many labor-saving features of the **NEW Scepter® JBox™**.

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## BUILT TOUGH TO LAST

The NEW Scepter® JBox™ is ideally suited for indoor and outdoor use and made to perform in the most demanding environments. Made of PVC it is extremely durable and resistant to impact in a wide range of temperatures and not adversely affected by water and chemicals. Built for corrosive environments, the NEW Scepter® JBox™ is entirely non-metallic, eliminating corrosion concerns with screws and other metal parts.

The patented gasket and fastener system provides a reliable water-tight seal that meets the required NEMA rating – each and every time. The gasket is specifically formulated to be resistant to oils (NEMA 12 & 13). The cover/box design ensures a dependable seal while protecting the gasket from physical damage, external environmental forces and water submersion (NEMA 6P).

A true labor saver, the “close-by-hand – tool-assist to open” fasteners are functional and resilient as they are made of a performance grade thermoplastic polyester resin, Valox. The impact modified and UV stabilized Valox material provides exceptional mechanical and thermal properties along with excellent chemical resistance.

### NEMA Rated

1, 2, 3R, 4, 4X, 6, 6P, 12, 13

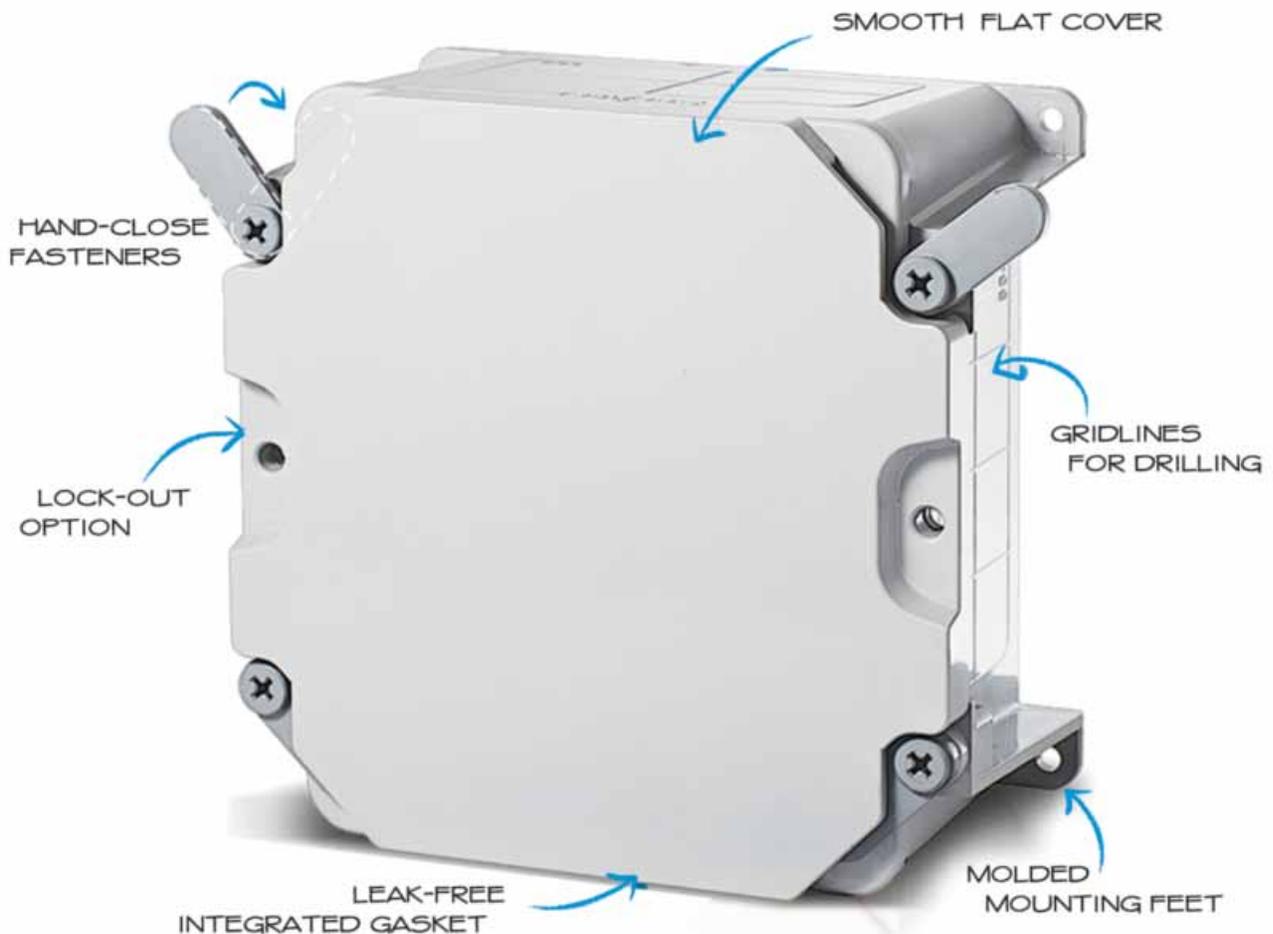
### Listed

CSA C22.2 No. 40

CSA C22.2 No. 85

UL 50 / CSA C22.2 No. 94.1

UL 50E / CSA C22.2 No. 94.2



# THE NEXT GENERATION JUNCTION BOX

## FEATURES & BENEFITS

### FASTENERS

- Close by hand – tool assist to open
- 100% non-metallic – corrosion resistant material
- No loose hardware for easy installation

### LOCK-OUT OPTION

- Available on sizes 6" to 12"
- Use a tie-wrap, bolt or padlock for added security

### INTEGRATED GASKET

- Injection molded gasket permanently fixed to the cover – no installation required
- Proprietary gasket material creates a 6P rated enclosure

### FLAT COVER

- No ribs – offers a flat, smooth surface for mounting of devices or labels
- No engravings

### BACK PANEL

- Designed to fit sizes 8" and 12"
- Made of 14 gauge carbon steel
- White epoxy powder-coated finish
- Easy to cut and drill to mount devices



### GRIDLINES

- Easy reference for drilling knockouts
- Makes conduit alignment a snap
- Indicates a "drill zone"

### MOUNTING FEET

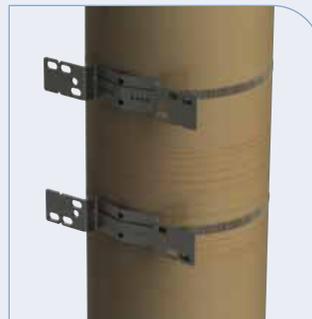
- Molded – no loose parts to assemble
- Located on corners out of the way of conduit connections
- Flush with the back of the box for close surface mounting
- Integrated design of mounting feet offers improved strength

### CONDUCTORS

- Suitable for use with 90°C Rated Conductors

### POLE MOUNTING KIT

- One kit fits 4" to 12" new Scepter JBoxes (PMK4-12)
- Supplied as a complete kit
- Works with wood, concrete, steel and composite poles
- Installs on round, square & octagonal poles up to 15" diameter



# The FASTEST box to INSTALL

The completely redesigned NEW Scepter® JBox™ has added features to make this the fastest box to use – no matter the situation.

## ADVANTAGES

### ZERO FOOTPRINT

- Design allows for installation in corners and immediately adjacent to other products
- Easy access to all mounting feet and fasteners

### INSTALLING OVERHEAD

- Integral fasteners allow for easy overhead positioning and securing

### MOUNTING IN A COVER

- Pilot lights, control switches and other devices are easily mounted
- Cover is free and clear of supporting ribs, and has a uniform thickness

### ADDED SECURITY

- 6" and larger, feature a lock-out option
- Tie-wrap, tamper resistant bolt or padlock will restrict access to the box

### MORE INTERIOR VOLUME

- Increased space from wire pulling and for ease of bend radius
- Increased cubic inch volume allows for more flexibility

## PERFORMANCE RATINGS

Max. Temp. Range	122°F (50°C)
Rec. Operating Temp.	-40°F to 122°F (-40°C to 50°C)
UV and Water Exposure	UL 746C
Flame & Smoke	UL 94V-0 (UL94 Vertical Flame Test)
NEMA	1,2,3R,4,4X,6,6P,12,13
Industrial Control Panels	UL 508A approved

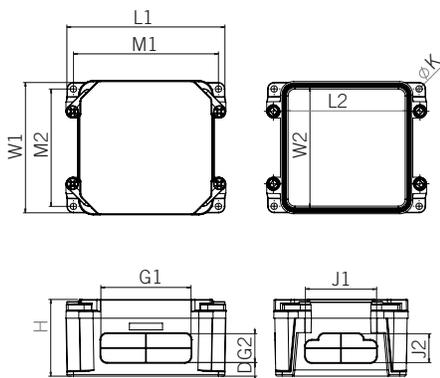


# THE NEXT GENERATION JUNCTION BOX

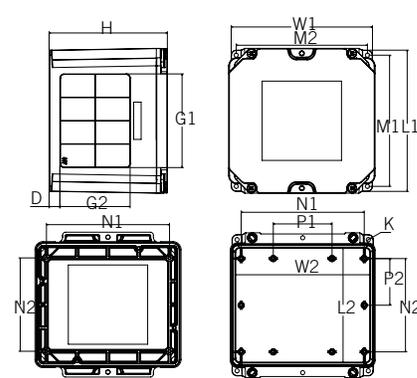
## PRODUCT DIMENSIONS

Size inches	Part Number	Product Code	Lock Out Option	DIN Rail & Back Panel	L1	W1	L2	W2	H	M1	M2	G1	G2	J1	J2	D	K
					inches												
4x4x2	JBX442	277000	-	-	4.97	3.93	3.48	3.48	2.90	4.48	3.44	2.41	1.09	1.72	1.09	0.51	0.24
4x4x4	JBX444	277001	-	-	4.90	3.86	3.48	3.48	4.89	4.41	3.37	2.22	2.97	1.59	2.97	0.59	0.24
5x5x2	JBX552	277002	-	-	5.97	4.93	4.55	4.55	2.90	5.48	4.44	3.41	1.09	2.69	1.09	0.51	0.24
6x3x4	JBX634	277003	✓	-	3.90	5.86	2.48	5.48	4.89	3.41	5.37	1.22	2.72	3.42	2.72	0.59	0.28
6x6x4	JBX664	277004	✓	-	7.58	7.58	5.86	7.20	4.90	6.90	6.90	4.47	2.47	4.47	2.47	0.59	0.28
6x6x6	JBX666	277005	✓	-	7.51	7.51	5.79	7.13	6.90	6.83	6.83	4.22	4.47	4.22	4.47	0.72	0.28

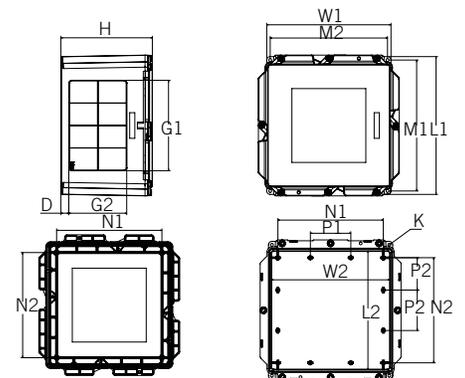
Size inches	Part Number	Product Code	Lock Out Option	DIN Rail & Back Panel	L1	W1	L2	W2	H	M1	M2	G1	G2	N1	N2	P1	P2	D	K
					inches														
8x8x4	JBX884	277006	✓	✓	9.58	9.58	7.86	9.20	4.90	8.90	8.90	6.47	1.97	8.25	6.26	3.94	3.13	0.59	0.28
8x8x7	JBX887	277007	✓	✓	9.47	9.47	7.76	9.10	7.90	8.90	8.90	6.22	4.65	8.25	6.26	3.94	3.13	0.75	0.28
12x12x4	JBX12124	277008	✓	✓	13.58	12.24	11.74	11.74	4.90	12.90	11.56	9.28	2.03	10.26	10.25	3.94	3.13	0.56	0.28
12x12x6	JBX12126	277009	✓	✓	13.58	12.24	11.74	11.74	6.90	12.90	11.56	9.03	3.78	10.26	10.25	3.94	3.13	0.67	0.28
12x12x8	JBX12128	277010	✓	✓	13.58	12.24	11.74	11.74	8.90	12.90	11.56	8.81	5.64	10.26	10.25	3.94	3.13	0.76	0.28



JBX442 - JBX666

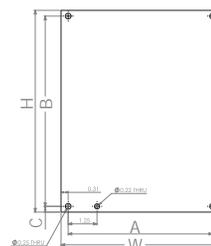


JBX884 - JBX887



JBX12124 - JBX12128

Size inches	Part Number	Product Code	W	H	A	B	C
			inches				
8x8	BP88CSW	077861	6.88	8.75	6.26	8.25	0.25
12x12	BP1212CSW	077865	10.88	10.75	10.26	10.25	0.25



BACK PANELS  
BP88CSW - BP1212CSW

## SHORT FORM SPECIFICATIONS

Junction boxes shall be acceptable for indoor and outdoor use and manufactured of PVC in a gray color analogous to Rigid PVC conduit and fittings. The junction box and its fasteners, hinges or components shall be entirely non-metallic. Boxes shall be NEMA rated 1, 2, 3R, 4, 4X, 6, 6P, 12, 13 and certified to bi-national standard UL50/50E - CSA No.94.1/94.2 by a Nationally Recognized Testing Laboratory (i.e. UL or CSA).

The cover/box seal shall be dual-molded so as to be a permanent part of the cover and the cover secured to the box using non-metallic quarter-turn

“close by hand, tool assist to open” fasteners. To aid in the alignment and proper positioning of conduit connections the box/enclosure shall have embossed gridlines on the sidewalls. The mounting feet shall be a permanent molded feature of the box and not extend beyond the periphery of the box/enclosure. On boxes/enclosures of nominal size 8”X8” and larger, back-panel / DIN rail mounting and pad-lock provisions shall be incorporated into the product.

Acceptable manufacturer: IPEX (Scepter JBox Series)

## APPLICATION / USE

### APPLICATIONS

The Scepter JBoxes are ideal for use wherever PVC conduit and fittings are employed. Scepter JBoxes have no metallic parts or hardware to be of concern making these boxes ideal for indoor, outdoor, wet locations and challenging corrosive environments. They are well suited for a wide range of applications such as corrosive environments, agricultural, wash down, water and waste-water treatment facilities, marine and car washes.

### WHY SELECT PVC FOR AN ENCLOSURE?

Non-metallic PVC boxes/enclosures are lightweight, easily installed and modified, ideal for outdoor exposed to weather applications they are corrosion resistant and offer a high degree of resistance to chemical elements. PVC is a cost effective option for enclosures with a proven long life in indoor and outdoor applications. PVC does not support combustion and is self-extinguishing. See all 10 reasons in the Scepter PVC Conduit Brochure found at [www.ipexamerica.com](http://www.ipexamerica.com).

## PHYSICAL PROPERTIES

### SUNLIGHT RESISTANCE (UV) & WEATHERING

The performance of an enclosure during its service life will be impacted by environmental conditions. Selecting the correct material for the application will ensure a long trouble-free installation. Adverse conditions such as continuous direct exposure to sunlight, extreme temperatures and aggressive elements like wind-blown sand will have an impact on the enclosure. Steel enclosures are prone to corrosion when exposed to moisture and chemical atmospheres, the unprotected finish surfaces of Fiberglass enclosures can be adversely affected by direct exposure to sunlight (a condition known as fiberbloom).

PVC provides an excellent balance between material strength and environmental performance. The surface appearance of Scepter JBoxes are not adversely affected by exposure to UV, can withstand years of weather exposure and are particularly well suited for marine areas and salt water spray.

### MAXIMUM TEMPERATURE RANGE

Scepter JBoxes are acceptable for use in ambient temperatures as permitted by the NEC. The NEC limits the use of PVC in ambient temperatures to 122°F (50°C):

NEC 352.12 Uses Not Permitted

(D) Ambient Temperatures. Where subject to ambient temperatures in excess of 122°F (50°C) unless otherwise listed.

### RECOMMENDED OPERATING TEMPERATURE

The maximum permissible continuous use temperature for the Scepter JBox is 122°F as limited by the NEC.

Enclosures/boxes are designed to provide protection and enclose electrical/electronic controls, instruments, components and wiring for indoor and outdoor applications. Ambient temperature may pose a concern

for the enclosure and the products enclosed. The nature of the materials used to manufacture non-metallic enclosures provide a range of operating use temperatures but what is most important is the temperature rating of the products contained within. For example, if the control equipment within an enclosure has a maximum operating temperature of 120°F, having a box that can withstand 266°F is extraneous.

Declared Operating Temperatures  
of Non-metallic Enclosures

JBX	-40°F to 122°F	(-40°C to 50°C)
ABS	0°F to 125°F	(-18°C to 52°C)
Polycarbonate 'A'	-40°F to 185°F	(-40°C to 85°C)
Polycarbonate 'B'	-31°F to 180°F	(-35°C to 82°C)
Polyester 'A'	-40°F to 266°F	(-40°C to 130°C)
Polyester 'B'	-40°F to 248°F	(-40°C to 120°C)
Fiberglass 'A'	-40°F to 250°F	(-40°C to 120°C)
Fiberglass 'B'	-31°F to 266°F	(-35°C to 130°C)

### ENCLOSURE TEMPERATURE RISE

The difference between the air temperature inside the enclosure resulting from heat generated by components installed within and the air temperature outside the enclosure is the temperature rise.

It is common for enclosures to be unventilated to provide maximum protection for the internal components from environment effects and allow internal heat to be transferred by conduction through the walls of the enclosure. Metallic enclosures will dissipate heat better than non-metallic products; however, they also absorb heat whereas non-metallic enclosures have an insulating effect. Unpainted metallic enclosures directly exposed to the sun often become too hot to touch. Painted metallic enclosures and non-metallic enclosures have similar heat transfer characteristics.

Temperature rise may be important as increased heat can reduce the life of electrical and electronic components and the temperature within the enclosure may impact the operating parameters (i.e. AMR or

Absolute Maximum Rating) of the installed components. As an example, most manufacturers' variable speed drives are designed for full load continuous operation at 104°F (40°C) maximum ambient, operating above the rated temperature reduces the life.

To appreciate the temperature rise and whether or not it is a concern for a specific application the following information is provided as a guide. To determine the heat rise, the enclosure surface area and the total internal heat load are required.

The table provides the total surface area exposed at air for specific Scepter JBox sizes and assumes the box is surface mounted against a wall/surface – the back wall of the box is not included in the surface area calculation.

JBX box	Total Surface Area (sq ft) 5 sides
JBX884	2
JBX887	2.3
JBX12124	3.6
JBX12126	3.9
JBX12128	4.25

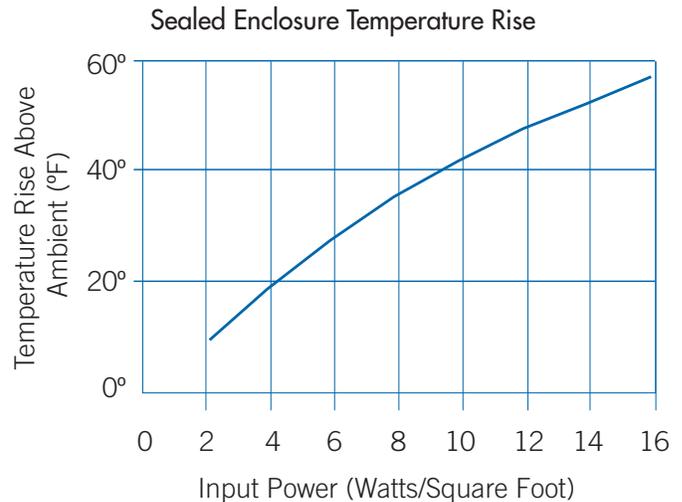
The heat load is the total watts generated by the components within the enclosure.

Temperature Rise (watts/ft<sup>2</sup>) = total input watts / total surface area in square feet

Example: A JBX12126 box has a total internal heat load of 30 watts. The calculation is total watts / surface area (30/3.90) or 7.7 watts/ ft<sup>2</sup>; using the graph, the estimated temperature rise is approximately 35°F.

The calculation and graph is an estimation of temperature rise. Internal component layout, external air movement and other factors can create variations in the actual temperature rise. If in doubt, we recommend applying a safety factor of 25%.

There are options to address an unfavorable temperature rise and its effect on equipment:



1. Increasing the enclosure box size will result in a lower temperature rise
2. Add venting, a fan or other air cooling options (note: this can impact the rating of the enclosure)
3. Heat rises; position equipment within the box accordingly. Equipment that can handle higher heat should be situated at the top.

Note: This information is a guideline only and provided to assist the user in determining the suitability of the product for the application.

Scepter JBoxes can be used in ambient temperature of 122°F (50°C) maximum. The maximum heat rise tolerated in an enclosed, gasketed and sealed enclosure with no venting would be dependent upon the rating of the components installed and the size of the enclosure.

# THE NEXT GENERATION JUNCTION BOX

## FLAME RESISTANCE

The Scepter JBox is manufactured of a specific PVC formulation and the material has been evaluated by UL for flammability in accordance with UL 94. The flame classification is 94V-0.

## IMPACT RESISTANCE

The Scepter JBox has been designed and manufactured to exceed the impact testing requirements of the product standard. Steel ball impact tests were conducted at ambient room temperature and at -31°F (-35°C). The Scepter JBox meets the same impact testing requirements as all non-metallic enclosures (fiberglass, polycarbonate etc.) listed to UL50/50E.

## EMI / RFI SHIELDING

Electromagnetic Interference and Radio Frequency Interference Shielding is not a standard physical feature of non-metallic boxes/enclosures. For non-metallic products a special coating must be applied to provide shielding protection. This customization option is not provided by IPEX on the Scepter JBox however shielding products are commercially available for the user/installer to apply a spray-on or painted shielding.

## RELATIVE THERMAL INDEX

This PVC material used in the manufacture of the Scepter JBox has been evaluated for Relative Thermal Index (RTI) ratings as noted below.

Relative Thermal Index, °F (°C)		
Electrical	Mechanical	
	w/Impact	w/o Impact
200 (95)	185 (85)	200 (95)

## CHEMICAL RESISTANCE

Environmental resistance ratings are based upon tests where the material specimens were subjected to complete immersion in the reagent. This is severe and is not typical of actual installation use. Where there is a question of suitability for the enclosure in a specific environment, physical product samples should be tested under actual conditions. Any information provided on chemical resistance is intended as a guideline only, actual testing in the application environment is always recommended.

The user must determine the suitability of the product in an environment based upon individual characteristics. In many applications, several corrosive agents are present and reactions among them are not always documented. Application environments can be unique necessitating the identification of all possible corrosive elements that may affect the intended enclosure application.

The ability for an enclosure to perform in specific environments is affected by the various materials that comprise the functional elements of the enclosure. To ensure the long term performance of the enclosure, the hardware and components must also be suitable for use in the environment.

Scepter JBoxes are well suited for most environments and offer very good chemical resistance to dilute acids, dilute alkalis, oils and greases, alcohols.

The proprietary gasket has been formulated to provide low temperature flexibility, tear resistance and tensile strength to provide performance in a wide range of environmental conditions. Similar to our PVC boxes the gasket offers good chemical resistance to dilute acids, dilute alkalis, oils, alcohols and water.

## ENCLOSURE RATINGS

### NEMA RATINGS

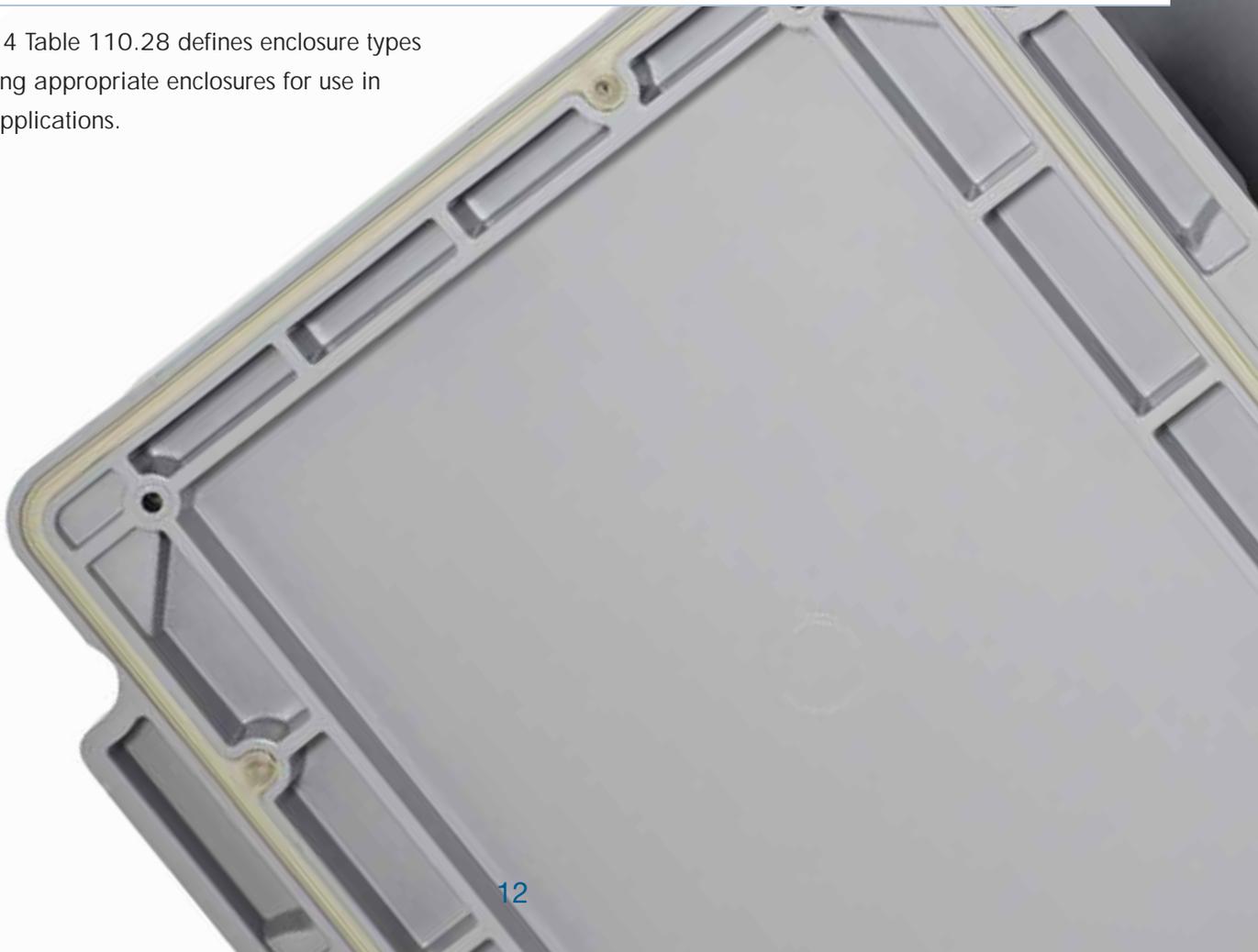
Many applications require the use of a box that has an environmental rating. Enclosures rated to NEMA standards are identified with a marking to define the ability of that enclosure to withstand the specific environmental conditions. The different NEMA ratings that the Scepter JBox is certified to and the conditions are described below.

Type	Description
1	Enclosures for indoor use providing protection from contact with the enclosed equipment and ingress of solid objects (falling dirt).
2	Enclosures for indoor use providing protection from contact with the enclosed equipment, ingress of solid objects (falling dirt) and from harmful effects on equipment due to ingress of water (dripping and light splashing)
3R	Enclosures for indoor or outdoor use providing protection from contact with the enclosed equipment, ingress of solid objects (falling dirt) and from harmful effects on equipment due to ingress of water (rain, sleet, snow) and is undamaged by the external formation of ice.
4	Enclosures for indoor or outdoor use providing protection from contact with the enclosed equipment, ingress of solid objects (falling dirt and windblown dust) and from harmful effects on equipment due to ingress of water (rain, sleet, snow, splashing water and hose directed water) and is undamaged by the external formation of ice.
4X	Enclosures for indoor or outdoor use providing protection from contact with the enclosed equipment, ingress of solid objects (windblown dust) and from harmful effects on equipment due to ingress of water (rain, sleet, snow, splashing water and hose directed water), protection against corrosion and is undamaged by the external formation of ice.
6	Enclosures for indoor or outdoor use providing protection from contact with the enclosed equipment, ingress of solid objects (falling dirt) and from harmful effects on equipment due to ingress of water (hose directed water and entry of water on occasional temporary submersion at a limited depth) and is undamaged by the external formation of ice.
6P	Enclosures for indoor or outdoor use providing protection from contact with the enclosed equipment, ingress of solid objects (falling dirt) and from harmful effects on equipment due to ingress of water (hose directed water and entry of water during prolonged submersion at a limited depth) and is undamaged by the external formation of ice.
12	Enclosures for indoor use providing protection from contact with the enclosed equipment, ingress of solid objects (falling dirt circulating dust, lint, fibers and flyings) and from harmful effects on equipment due to ingress of water (dripping and light splashing).
13	Enclosures for indoor use providing protection from contact with the enclosed equipment, ingress of solid objects (falling dirt circulating dust, lint, fibers and flyings) and from harmful effects on equipment due to ingress of water (dripping and light splashing) and against the spraying, splashing and seepage of oil and non-corrosive coolants.

# THE NEXT GENERATION JUNCTION BOX

Enclosure constructed for:	1	2	3	3R	4	4X	6	6P	12	13
Indoor use	X	X	X	X	X	X	X	X	X	X
Outdoor use			X	X	X	X	X	X		
Enclosure provides degree of protection against:										
Contact with enclosed equipment	X	X	X	X	X	X	X	X	X	X
Ingress of solid objects (falling dirt)	X	X	X	X	X	X	X	X	X	X
Ingress of water (dripping and light splashing)		X	X	X	X	X	X	X	X	X
Ingress of water (rain, sleet, snow)			X	X	X	X	X	X		
Ingress of water (rain, sleet, snow, splashing water and hose directed water)					X	X	X	X		
Ingress of water (hose directed water and occasional temporary submersion at a limited depth)							X	X		
Ingress of water (hose directed water and occasional prolonged submersion at a limited depth)								X		
Oil and coolant seepage									X	X
Oil and coolant spraying and splashing										X

NEC 2014 Table 110.28 defines enclosure types for selecting appropriate enclosures for use in specific applications.



NEMA Enclosure Type Number	IEC Enclosure Classification Designation
1	IP10
2	IP11
3, 3R	IP54
4, 4X	IP55/IP56
6, 6P	IP67
12	IP52
13	IP54

The chart is an approximate comparison between NEMA and IP enclosure ratings

## IP RATINGS

Scepter JBoxes are not IP rated.

IP designations are similar to NEMA ratings, they define the degree of protection the enclosure provides against solid foreign bodies and liquids (water), but they are not equivalent. The IEC rating does not include requirements and testing for corrosion, gasket aging, dust or external icing.

The designation consists of the letters IP followed by two numerals. The first numeral indicates the degree of protection provided with respect to foreign objects entering the enclosure (i.e. hand, finger, tool, dust). The second numeral indicates the degree of protection provided with respect to ingress of water (i.e. splashing, rain, direct hose spray, immersion).



## INSTALLATION

### MOUNTING

The Scepter JBox is designed to be secured in place using integral mounting feet that are external to the box compartment. The mounting feet, located at the corners, are contained within the 'footprint' of the box allowing for close (side-by-side) mounting to other boxes or equipment, walls or structural components without conflict. The mounting holes 1/4" (6mm) diameter (JBX442-JBX634) and 9/32" (7mm) (JBX664-JBX887) allow for screws, bolts and other fasteners to be used to secure the box.

External mounting ensures the boxes are compliant with NEC 314.43. It is the installer's responsibility to correctly secure the Scepter JBox for the application especially if the box will be supporting additional weight inside (i.e. devices on a Din Rail or Back Panel). The selection of fasteners for mounting is dependent upon the surface and material on to which the Scepter JBox is being secured.

### POLE MOUNTING

IPEX has developed a unique universal pole mount bracket for the attachment of Scepter JBox series to poles and posts. The PMK-412 kit is designed to accommodate sizes from 4" to 12" and fit with a round, octagonal or square pole/post up to 15" diameter. Instructions are provided with each kit to adjust the bracket correctly for the specific size of box and stainless steel gear clamps tighten around the pole using a nut driver to provide a secure hold. Those customers who have a banding tool (i.e. Band-It brand) can use the brackets included in the kits with the Band-It supplied bands.

The PMK4-12 pole mount kit was designed to support a weight of up to 40lbs. Additional support should be provided where the installation of a box using the PMK4-12 exceeds 40 lbs.

### CONDUIT CONNECTIONS

To maintain the desired enclosure rating (i.e. NEMA 3R) the conduit connection must provide the same environmental resistance. Solvent cemented PVC conduit and fittings provide excellent results for use in demanding wet location, wash-down and water spray environments. Properly installed PVC fittings provide the best conduit connection method to the Scepter JBox.

PVC conduit hub:

1. Mechanical connection: PVC Male/Terminal Adapter (TA) w/locknut and O-ring
2. Solvent Cement connection: PVC Junction Box Adapter (JBA) and coupling

Threaded connection:

1. Myers Hub, Bullet Hub or similar

### CUSTOM CUTTING

IPEX does not provide custom hole or profile cutting modification services. Our boxes are manufactured of PVC and have a standard wall thickness of 3/16" (4.8mm) (JBX442 – JBX887) and 1/4" (6.35mm) (JBX12124-JBX12128). Custom holes can easily be made on site as needed or pre-fabricated in the shop using a standard hole-saw or Unibit step drill.

### DRILLING AND CUTTING

PVC is the easiest of all box materials to cut and drill allowing installers to use standard drills, hole-saws, step drills and punches to create conduit entries and holes for mounting control devices. There are no health or safety concerns resulting from fibers, fine dust or metal shavings.

A helpful feature of the Scepter JBox design is the ability for the box to lay flat on all sides which will position the box flat and level for the user when drilling/cutting holes. Other products have flanges/mounting feet that

extend from the box preventing the box from being positioned flat and the user must drill and/or cut on an angle.



## CUSTOM COLORS

IPEX does not offer custom colors. Scepter JBox series boxes are standard PVC grey to match PVC conduit and fittings.

## PAINTING RECOMMENDATIONS

PVC weathers extremely well and does not require special protection from UV. We do not recommend painting of PVC boxes; however paint products formulated for adhesion to PVC are commercially available at paint retailers.

## DRAINAGE HOLES

UL50 9.7.2 specifies Types 2 and 3R enclosures are constructed in accordance with 7.3.3.3 shall have instructions indicating the method of (obtaining) providing drainage openings when the enclosure is being used for Types 2 and 3R applications. This information is included on every Scepter JBox - engraved into the bottom inside of the box.

Note: For Type 2 and 3R: Drill a 3/16" (5mm) drainage hole at the lowest point of the enclosure.

## GRID LINES

All sizes of Scepter JBoxes have embossed grid lines on the side walls of the box. These grid lines are designed to be visible when working with the box but discreet when viewed at a distance. The grid lines are a time saving feature for the installer connecting conduit raceways, cables and other fittings to the box. The grid lines offer a quick visual reference for locating the hole cutting location for a connection point. Rather than measuring and duplicating the measurement on the opposite or adjacent wall to create a parallel or perpendicular conduit run, the grid lines are there for the quick reference. Additionally, the outermost grid line defines the 'drill zone' – identifying the outermost point at which a hole can be cut and still permit a connector to be properly fastened in place (i.e. the locknut will fit on the inside without interference).



# THE NEXT GENERATION JUNCTION BOX

## BACK PANEL AND DIN RAIL MOUNTING

Scepter JBoxes, sizes 8" and larger, are supplied with standoffs on the inside base for the mounting of back panels. The spacing of the mounting bosses are noted on dimensional drawings but have been based on standard industry back panels. IPEX offers 14 gauge powder coated carbon steel back panels. Panel mounting screws are not supplied with the back panels; the correct screw to use for mounting a panel into the Scepter JBox is a Pan Head #10 x 1/2" length thread forming screw.

Back Panel Cross Reference

IPEX	BP88CSW	BP1212CSW
Panel Dimension	8.75 x 6.88	10.88 x 10.75
Hoffman	A10P8	n/a
Hammond	14R0907	14R1111
Stahlin	BP108CS	n/a
Rittal	LMPL108CS	n/a

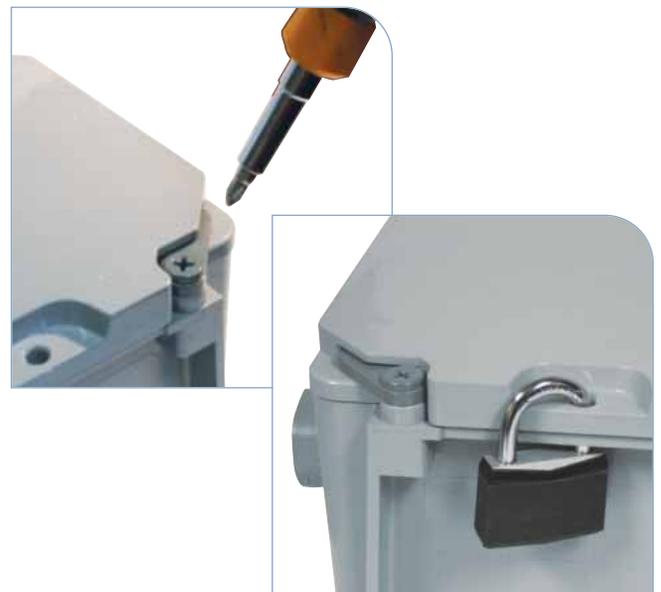
## Din Rail Mounting

In addition to offering mounting provisions for a back plate panel, all boxes 8" and larger have raised bosses for the attachment of DIN rail. Screws are not included for mounting of DIN rail, the correct screw to use for mounting a DIN rail into the Scepter JBox is a Pan Head #10 x 1/2" length thread forming screw.



## SECURITY AND RESTRICTING ACCESS

Scepter JBoxes feature patented 'hand close/tool open' quarter turn fasteners. The fasteners are designed to require a tool (#2 Phillips head screwdriver) to be used to open the fastener and access the box maintaining a standard degree of security access. All boxes (6x6 size and larger) have a provision for locking the cover by using the padlock security hole. The holes are located on opposite walls at the mid-point on the flanged walls (the side with the mounting feet supports). The (.28" or 7mm) hole is designed to accommodate a pad-lock, tie-wrap or bolt (regular or tamper-resistant) to restrict unwanted access to the box.



## GROUNDING AND BONDING

Equipment system grounding and bonding are separate things.

Grounding protects equipment from damage due to induced voltages. Induced voltages (i.e. lightning) are trying to get to earth and thus ground wire connected to ground rods and plates. The equipment grounding conductor and ground rod connection does not protect the ground fault current path.

Bonding refers to the low impedance conductive path that carries a fault current from the point of a ground fault to the supply source. This low impedance path for ground-fault current facilitates the operation of the circuit overcurrent device (i.e. breaker). A fault current through ground (earth) may not create the necessary current as the earth is not a low impedance fault current path.

The National Electrical Code (NEC) states:  
Electrical System Grounding:

Electrical systems that are grounded shall be connected to earth in a manner that will limit the voltage imposed by lightning, line surges, or unintentional contact with higher-voltage lines and that will stabilize the voltage to earth during normal operation.

Effective Ground-Fault Current Path:

An intentionally constructed, low impedance electrically conductive path designed and intended to carry current under ground-fault conditions from the point of a ground fault on a wiring system to the electrical supply source and that facilitates the operation of the overcurrent protective device.

Grounding of Electrical Equipment:

Normally non-current-carrying conductive materials enclosing electrical conductors or equipment, or forming part of such equipment, shall be connected to earth so as to limit the voltage to ground on these materials.

Bonding of Electrical Equipment:

Normally non-current-carrying conductive materials enclosing electrical conductors or equipment, or forming part of such equipment, shall be connected together and to the electrical supply source in a manner that establishes an effective ground-fault current path.

The earth shall not be considered an effective ground-fault current path.

### NEC 2014

314.3 Non-metallic Boxes. Non-metallic boxes shall be permitted only with open wiring on insulators, concealed knob-and-tube wiring, cabled wiring methods with entirely non-metallic sheaths, flexible cords and non-metallic raceways.

Exception No. 1: Where internal bonding means are provided between all entries, non-metallic boxes shall be permitted to be used with metal raceways or metal-armored cables.

Non-metallic conduits connected non-metallic boxes and enclosures do not require bonding. In instances where metallic conduits are connected to a non-metallic box it is the installing electrician's responsibility to properly bond the conductive materials to ensure an effective ground-fault path. This is accomplished by using grounding bushings (or hubs) and the connection of a bonding jumper between all metal raceway and cable entries in compliance with the code rules.



# THE NEXT GENERATION JUNCTION BOX

## DIN Rail ground

DIN rails are normally required to be grounded and a grounding terminal block is readily available from all of the terminal manufacturers. The grounding terminal block has a recessed center screw that engages the DIN rail and the other terminal connection points allow for ground wire attachment.

## Back panel ground

Most Back Panels have 4 mounting holes that align with the mounting bosses in the bottom of the box and an additional 5th hole set to the inside of one corner for the attachment of a ground lug or bolt. The ground can be located anywhere on the panel by drilling another mounting hole where desired.



**Scepter®**  
**JBox™**  
The Next Generation Junction Box



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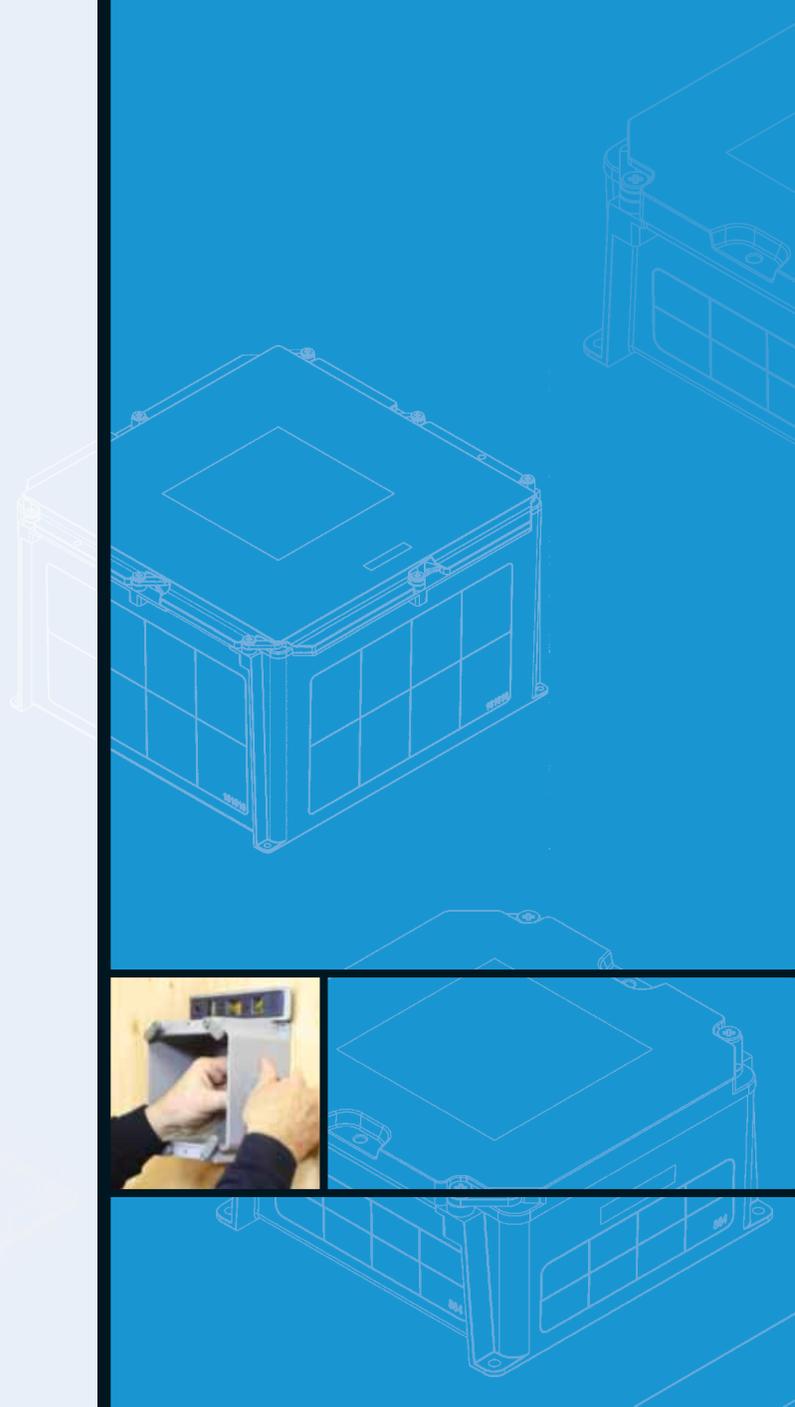
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