

ABB US ELIP(THOMAS & BETTS) – THE REYNOLDS COMPANY - TECH TALK

Finding the Right Cable Protection Solution

Presented by ABB

Kenny Espinosa; Sales Application Engineer

Presentation Overview

- Safety Moment
- About the presenter
- Misapplication Trends
- UL508A
- CPS Online tool
- Summary
- Resources & Support

Safety Moment



Please check the tire pressure in your cars!

- The #1 cause of people losing control in wet weather is improperly inflated tires
- The change to cooler temps affects the tires
- The appropriate tire pressure for your vehicle can be found in the frame of your driver side door
- Do this for all your vehicles. It only takes 10 min!

About Me:

Kenny Espinosa

Sales Application Engineer

20+ Years Industry Experience

- 12+ years with ABB/T&B
- I cover central and west Texas
- I call on Engineering firms, OEM's and End Users
- Graduated From Texas A&M - Industrial Distribution Program (a long time ago)
- Was a high school football ref for 22 seasons
- I am usually at Baseball games or volleyball games on the weekends watching my kids compete.
- I love to BBQ/Cook – if you have a pellet grill – lets talk!

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Corrosion's Annual Vertical Market Cost



WWTP
\$36 billion



Bridges & Tunnels
\$8 billion



Refining
\$11 billion



Electrical Utilities
\$7 billion



Food & Beverage
\$3 billion



Oil & Gas
\$2 billion


Here are 3 major trends I have noticed:

- Improper Installation
- Improper use of dissimilar metals
- Matching the proper fittings to the enclosure and the environment



UL 508A – Standard for Industrial Control Panels

“The Panel Builders Standard”



UL 508A

STANDARD FOR SAFETY
Industrial Control Panels

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DISTRIBUTION WITHOUT PERMISSION FROM UL

 **US LISTED**

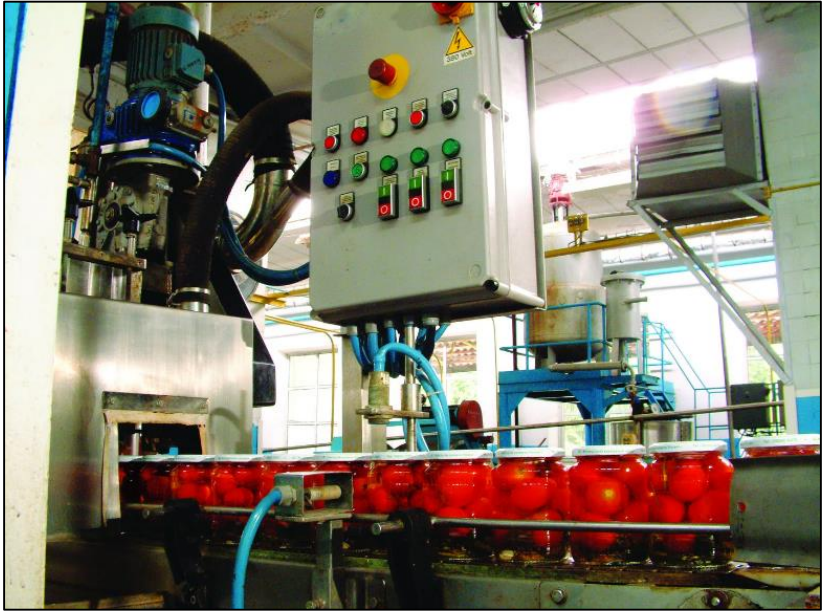
ENCLOSED INDUSTRIAL CONTROL PANEL

No. B 84728761



Machine OEMs, Panel Builders, Integrators

UL 508A Key Customers



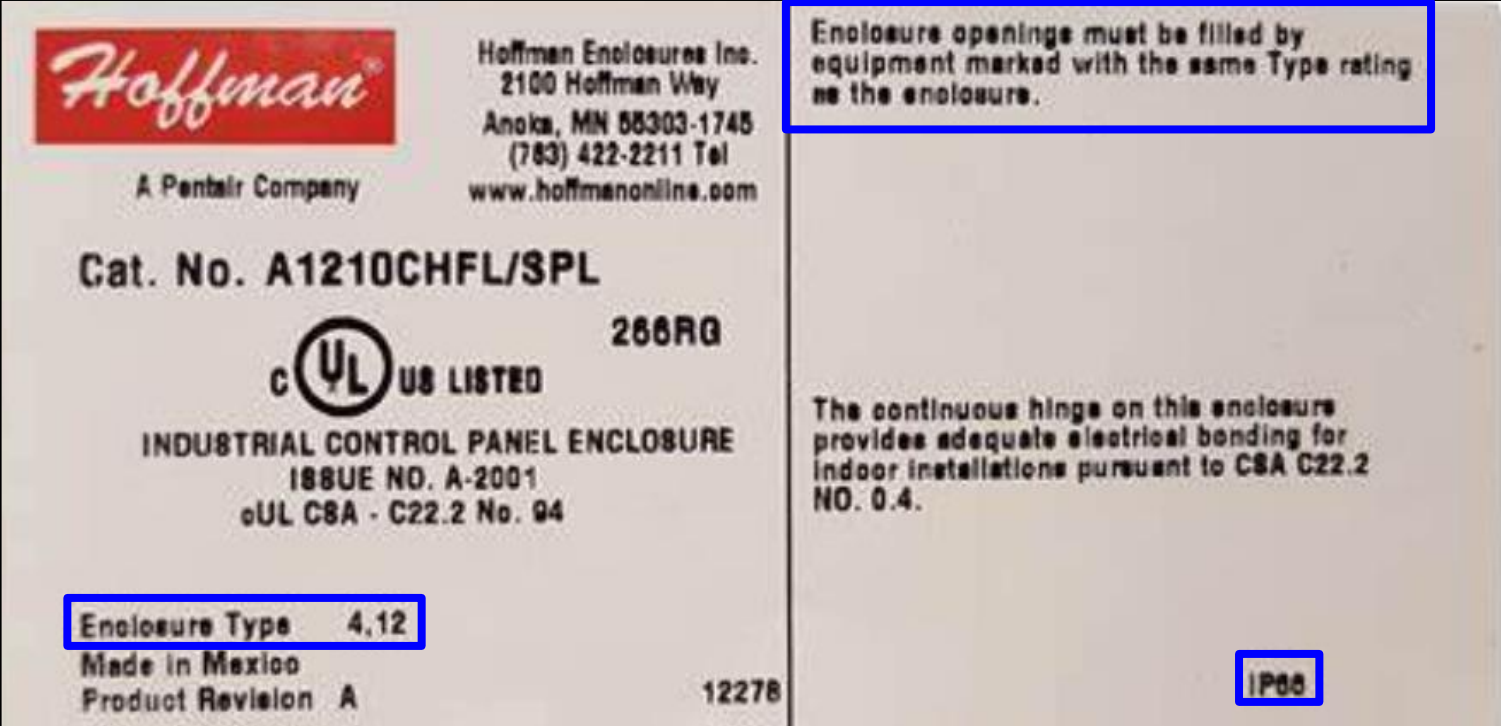
UL 508A “Sec. 19.0 Enclosure Openings” - Ingress Rating Requirements

Table 19.1
Openings for conduit connections in enclosures with environmental rating other than Type 1

Enclosure type (Column 1)	Conduit instructions (Column 2)
2, 3R, 3RX	a) All holes for conduit shall be below all uninsulated live parts; or b) Conduit openings above the lowest uninsulated live parts shall be <u>provided with conduit fittings having an environmental rating that complies with Table 19.2</u> ; or c) The enclosure shall be marked as in 53.2 with instructions for the installer to apply fittings complying with (a) or (b).
3, 3S, 3SX, 3X, 4, 4X, 5, 12, 12K	d) All holes for conduit shall be <u>provided with conduit fittings having an environmental rating that complies with Table 19.2</u> or as specified by the enclosure manufacturer; or e) <u>The enclosure shall be marked as in 53.3 with instructions to apply fittings complying with (d).</u>
6, 6P	f) All holes for conduit shall be <u>provided with conduit fittings having an environmental rating that complies with Table 19.2.</u>
13	g) All holes for conduit shall be <u>provided with conduit fittings having an environmental rating that complies with Table 19.2</u> ; or h) No conduit openings shall be provided.

Requirements for “UL 508A Panel Shops” and
builders who follow UL 508A guidelines

Enclosure Rating Labels & Marking Requirements



“Enclosure openings must be filled by equipment marked with the same Type rating on the enclosure”

Attention Installers

To maintain UL 508A Enclosure Ingress Rating requirement, use T&B conduit fittings specified below. Open QR Code for product selection and technical details.

- Ser. 53xx (Steel/Malleable Iron)
- Ser. 53xxSST6 (Stainless Steel)
- Ser. 52xxAL (Aluminum)
- Ser. 53xx-NB (Nickel Plated Brass)

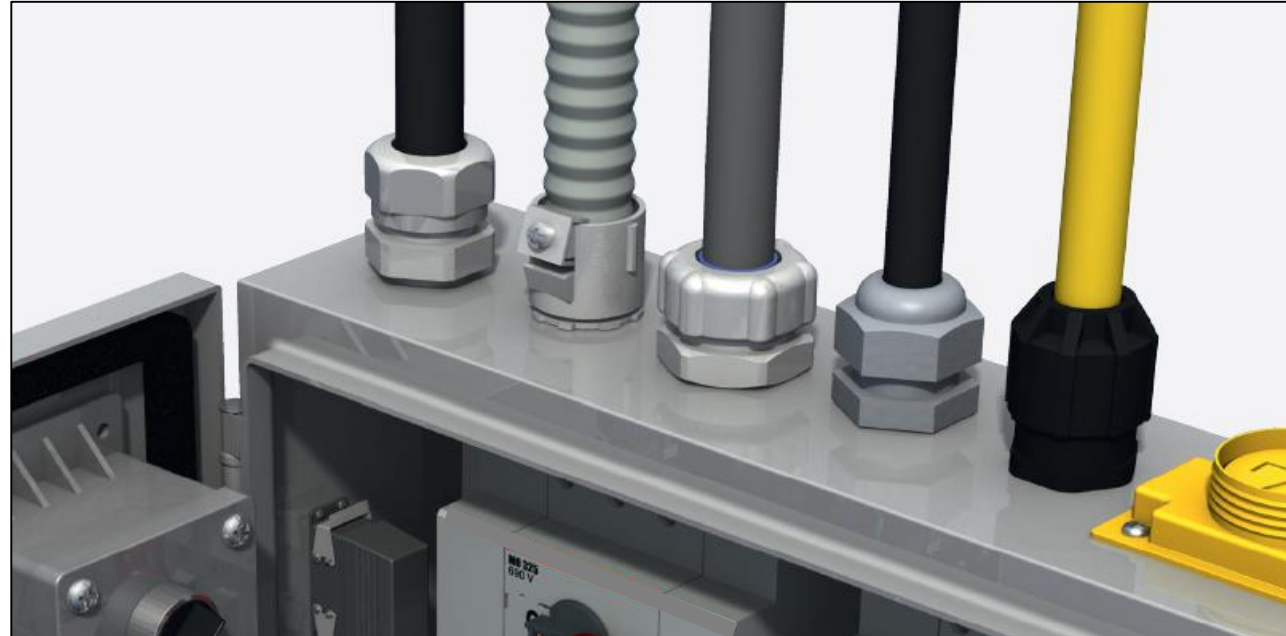


UL 508A, Sec. 53 - Enclosure Markings

53.3 An enclosed industrial control panel marked as Type 3, 3S, 3SX, 3X, 4, 4X, 5, or 12 enclosure as specified in [53.1](#) that is not provided with conduit hubs as specified in [Table 19.1](#) shall be marked with instructions identifying the specific hub or fitting intended to be used or to use hubs or fittings with the same environmental rating as the enclosure.

“Cable Protection Systems for Industrial Enclosures”

Selection Tool on e-Catalog Product Selector



T&B Liquidtight Systems®

“Ingress Integrity – System Ingress Ratings”



T&B Liquidtight Systems™



Stainless Steel



Non-Metallic

UL/CSA Ingress Ratings
 Indoor: Type **4, 4X, 12, 13**
 Outdoor: Type **3, 3R, 4, 4X**

IEC Ingress Ratings
IP66, IP67, IP68, IP69



Mild Steel



Aluminum



Non-Metallic Enclosures

Cable Protection Systems

Bulletin	Product Line	Material Type	Ingress Ratings				Application	Metallic FCS							Non-Metallic FCS					Cable Glands & Cord Connectors						
			NEMA	UL, cUL	CSA	IEC		Gen Purpose	Wide Temp	Gen Purpose Corrosion	Halogen Free	EMC	Ext Temp	Ext Temp Corrosion	Corrosion			EMC	Halogen Free	Corrosion						
			Type A	Type B	Type C	Type C		Type C	SST	AL	NM	EMC	Halogen Free													
PCR	PolyPro Polyester Enclosures, Type 4X	Polyester	4, 4X, 12, 13	4, 4X, 12, 13	4, 4X, 12, 13	IP 66	Harsh chemicals, corrosion, indoor & outdoor	LTGU	---	LT6GE	---	---	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
DWS12	Polypro WiFi, Type 4X	Polyester	4, 4X, 12, 13	4, 4X, 12, 13	4, 4X, 12, 13	IP 66	UV protection, indoor & outdoor, WIFI & LAN	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	C6	---
A48	Continuous Hinge, Type 4X	Molded Fiberglass	4, 4X, 12, 13	4, 4X, 12, 13	4, 4X, 12, 13	IP 66	Corrosive, chemical, temperature, weather	LTGU	LTTU	LT6GE	---	---	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
DWS12	Hinge Cover WiFi, Type 4X	Molded Fiberglass	4, 4X, 12, 13	4, 4X, 12, 13	4, 4X, 12, 13	IP 66	UV protection, indoor & outdoor, WIFI & LAN	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	C6	---
A50	Screw or hinge cover w/ quick release latch, Type 4X	Molded Fiberglass	3R, 3RX, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	IP 66	Corrosive, chemical, temperature, weather	LTGU	LTTU	LT6GE	---	---	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
HJ	Raised Cover with Screws, Type 4X	Molded Fiberglass	3R, 3RX, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	IP 66	Halogen Free, Flammability per 508A	---	---	---	---	---	---	---	---	---	---	---	---	---	XPCS	---	---	---	---	RBCG
HJ	Raised Cover with Latches, Type 4X	Molded Fiberglass	3R, 3RX, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	IP 66	Halogen Free, Flammability per 508A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	XPCS	---	---	---	RBCG
HJ	Flat Cover with Screws, Type 4X	Molded Fiberglass	3R, 3RX, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	IP 66	Halogen Free, Flammability per 508A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	XPCS	---	---	---	RBCG
HJ	Flat Cover with Latches, Type 4X	Molded Fiberglass	3R, 3RX, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	IP 66	Halogen Free, Flammability per 508A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	XPCS	---	---	---	RBCG
HJ	Flat Clear Cover with Latches, Type 4X	Molded Fiberglass	3R, 3RX, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	IP 66	Halogen Free, Flammability per 508A	---	---	---	---	---	---	---	---	---	---	---	---	---	---	XPCS	---	---	---	RBCG
UX1	Ultrx, Type 4X	Molded Fiberglass	3R, 3RX, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	IP 66	Corrosive, chemical, temperature, weather	LTGU	LTTU	LT6GE	---	---	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	---	---	---	---	RBCG
DWS12	Ultrx WiFi, Type 4X	Molded Fiberglass	4, 4X, 12, 13	4, 4X, 12, 13	4, 4X, 12, 13	IP 66	UV protection, indoor & outdoor, WIFI & LAN	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	C6	---
A17W3	Hinge Cover with 3-point Latch, Type 4X	Molded Fiberglass	3R, 3RX, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	IP 66	Corrosive, chemical, temperature, weather	LTGU	LTTU	LT6GE	---	---	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
A17WM	Hinge Cover with Quick Release Latch, Type 4X	Molded Fiberglass	3R, 3RX, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	IP 66	Corrosive, chemical, temperature, weather	LTGU	LTTU	LT6GE	---	---	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
A17WD	Fiberglass Disconnect, Type 4X	Molded Fiberglass	3R, 3RX, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	---	IP 66	Corrosive, chemical, temperature, weather	LTGU	LTTU	LT6GE	---	---	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
HL3	Zonex Non-Metallic Terminal Enclosure	Molded Fiberglass	4, 4X, 12	4, 4X, 12	---	IP 66	Corrosion Environments, HazLo, ATEX, IEC E	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
A17	Free Stand, Type 4X	Molded Fiberglass	3R, 3RX, 4, 4X, 12, 13	3R, 4, 4X, 12, 13	---	IP 66	Corrosive, chemical, temperature, weather	LTGU	LTTU	LT6GE	---	---	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
A17	2 Door, Free Stand, Type 4X	Molded Fiberglass	3R, 3RX, 4, 4X, 12, 13	3, 3R, 4, 4X, 12	---	IP 66	Corrosive, chemical, temperature, weather	LTGU	LTTU	LT6GE	---	---	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
Q41	Q Line D Pushbutton, Type 4X	Polycarbonate	4, 4X, 12	4, 4X, 12, 13	4, 4X, 12	IP 67	Corrosive, chemical, temperature, indoor	LTGU	LTTU	LT6GE	---	---	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
Q41	Q Line D, Type 4X	Polycarbonate or A	4, 4X, 6, 12, 13*	4, 4X, 6, 12, 13	4, 4X, 12	IP 67	Corrosive, chemical, temperature, indoor, *	LTGU	LTTU	LT6GE	---	---	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
Q41EM	Q Line D, EMC, Type 4X	Polycarbonate	4, 4X, 12, 13	4, 4X, 12, 13	---	IP 66	Corrosive, EMC Protection	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	C6	---
Q41	Q Line E, Type 4X	Polycarbonate or A	4, 4X, 6, 12, 13*	4, 4X, 6, 12, 13	4, 4X, 12	IP 67	Corrosive, chemical, temperature, indoor, *	LTGU	LTTU	LT6GE	---	---	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
Q41EM	Q Line E, EMC, Type 4X	Polycarbonate	4, 4X, 12, 13	4, 4X, 12, 13	---	IP 66	Corrosive, EMC Protection	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	C6	---
Q41	Q Line I, Type 4X	Polycarbonate or A	4, 4X, 12, 13*	4, 4X, 12, 13	4, 4X, 12, 13	IP 66	Corrosive, chemical, temperature, indoor, *	LTGU	LTTU	LT6GE	---	---	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
Q41EM	Q Line I, EMC, Type 4X	Polycarbonate	4, 4X, 12, 13	4, 4X, 12, 13	---	IP 66	Corrosive, EMC Protection	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	C6	---

[LTGU_QST_0722.pdf](#)
 [LT6GE_QST_0722.pdf](#)
 [LTXE_QST_0722.pdf](#)
 [LT6XE_QST_0722.pdf](#)
 [TYPEA_O_QST_0722.pdf](#)
 [CYL_QST_0722.pdf](#)
 [XPCS_QST_0722.pdf](#)
 [CC_QST_0722.pdf](#)



Non-Metallic Enclosures

Bulletin	Product Line	Material Type	Ingress Ratings				Application
			NEMA	UL, cUL	CSA	IEC	
PCR	PolyPro Polyester Enclosures, Type 4X	Polyester	4, 4X, 12, 13	4, 4X, 12, 13	4, 4X, 12, 13	IP 66	Harsh chemicals, corrosion, indoor & outdoor
DWS12	Polypro WIFI, Type 4X	Polyester	4, 4X, 12, 13	4, 4X, 12, 13	4, 4X, 12, 13	IP 66	UV protection, indoor & outdoor, WIFI & LAN Networks
A48	Continuous Hinge, Type 4X	Molded Fiberglass	4, 4X, 12, 13	4, 4X, 12, 13	4, 4X, 12, 13	IP 66	Corrosive, chemical, temperature, weatherability
DWS12	Hinge Cover WIFI, Type 4X	Molded Fiberglass	4, 4X, 12, 13	4, 4X, 12, 13	4, 4X, 12, 13	IP 66	UV protection, indoor & outdoor, WIFI & LAN Networks
A50	Screw or hinge cover w/ quick release latch, Type 4X	Molded Fiberglass	3, 3R, 3RX, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	3R, 4, 4X, 12	IP 66	Corrosive, chemical, temperature, weatherability
HJ	Raised Cover with Screws, Type 4X	Molded Fiberglass	3, 3R, 3RX, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	IP 66	Halogen Free, Flammability per 508A
HJ	Raised Cover with Latches, Type 4X	Molded Fiberglass	3, 3R, 3RX, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	IP 66	Halogen Free, Flammability per 508A
HJ	Flat Cover with Screws, Type 4X	Molded Fiberglass	3, 3R, 3RX, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	IP 66	Halogen Free, Flammability per 508A
HJ	Flat Cover with Latches, Type 4X	Molded Fiberglass	3, 3R, 3RX, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	IP 66	Halogen Free, Flammability per 508A
HJ	Flat Clear Cover with Latches, Type 4X	Molded Fiberglass	3, 3R, 3RX, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	IP 66	Halogen Free, Flammability per 508A
UX1	Ultrx, Type 4X	Molded Fiberglass	3, 3R, 3RX, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	IP 66	Corrosive, chemical, temperature, weatherability
DWS12	Ultrx WIFI, Type 4X	Molded Fiberglass	4, 4X, 12, 13	4, 4X, 12, 13	4, 4X, 12, 13	IP 66	UV protection, indoor & outdoor, WIFI & LAN Networks
A17W3	Hinge Cover with 3-point Latch, Type 4X	Molded Fiberglass	3, 3R, 3RX, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	IP 66	Corrosive, chemical, temperature, weatherability
A17WM	Hinge Cover with Quick Release Latch, Type 4X	Molded Fiberglass	3, 3R, 3RX, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	IP 66	Corrosive, chemical, temperature, weatherability
A17WD	Fiberglass Disconnect, Type 4X	Molded Fiberglass	3, 3R, 3RX, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	---	IP 66	Corrosive, chemical, temperature, weatherability
HL3	Zonex Non-Metallic Terminal Enclosure	Molded Fiberglass	4, 4X, 12	4, 4X, 12	---	IP 66	Corrosion Environments, HazLo, ATEX, IEC EX, Zone 1 & 2
A17	Free Stand, Type 4X	Molded Fiberglass	3, 3R, 3RX, 4, 4X, 12, 13	3, 3R, 4, 4X, 12, 13	---	IP 66	Corrosive, chemical, temperature, weatherability
A17	2 Door, Free Stand, Type 4X	Molded Fiberglass	3, 3R, 3RX, 4, 4X, 12, 13	3, 3R, 4, 4X, 12	---	IP 66	Corrosive, chemical, temperature, weatherability
Q41	Q Line D Pushbutton, Type 4X	Polycarbonate	4, 4X, 12	4, 4X, 12, 13	4, 4X, 12	IP 67	Corrosive, chemical, temperature, Indoor
Q41	Q Line D, Type 4X	Polycarbonate or ABS*	4, 4X, 6, 12, 13*	4, 4X, 6, 12, 13	4, 4X, 12	IP 67	Corrosive, chemical, temperature, Indoor, * Non-UL/CSA
Q41EM	Q Line D, EMC, Type 4X	Polycarbonate	4, 4X, 12, 13	4, 4X, 12, 13	---	IP 66	Corrosive, EMC Protection
Q41	Q Line E, Type 4X	Polycarbonate or ABS*	4, 4X, 6, 12, 13*	4, 4X, 6, 12, 13	4, 4X, 12	IP 67	Corrosive, chemical, temperature, Indoor, * Non-UL/CSA
Q41EM	Q Line E, EMC, Type 4X	Polycarbonate	4, 4X, 12, 13	4, 4X, 12, 13	---	IP 66	Corrosive, EMC Protection
Q41	Q Line I, Type 4X	Polycarbonate or ABS*	4, 4X, 12, 13*	4, 4X, 12, 13	4, 4X, 12, 13	IP 66	Corrosive, chemical, temperature, Indoor, * Non-UL/CSA
Q41EM	Q Line I, EMC, Type 4X	Polycarbonate	4, 4X, 12, 13	4, 4X, 12, 13	---	IP 66	Corrosive, EMC Protection

Cable Protection Systems

Metallic FCS							Non-Metallic FCS					Cable Glands & Cord Connectors				
Gen Purpose	Wide Temp	Gen Purpose Corrosion	Halogen Free	EMC	Ext Temp	Ext Temp Corrosion	Corrosion			EMC	Halogen Free	Corrosion			EMC	Halogen Free
							Type A	Type B	Type C	Type C	Type C	SST	AL	NM		
LTGU	---	LT6GE	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	--
---	---	---	---	LTEU	---	---	TYPEA O	TYPEB	---	EMC CYL	---	---	---	---	C6	---
LTGU	LTTU	LT6GE	Corrosion	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
---	---	---	---	LTEU	---	---	TYPEA O	TYPEB	---	EMC CYL	---	---	---	---	C6	---
LTGU	LTTU	LT6GE	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
---	---	---	LTZU	---	---	---	---	---	---	---	XPCS	---	---	---	---	RBCG
---	---	---	LTZU	---	---	---	---	---	---	---	XPCS	---	---	---	---	RBCG
---	---	---	LTZU	---	---	---	---	---	---	---	XPCS	---	---	---	---	RBCG
---	---	---	LTZU	---	---	---	---	---	---	---	XPCS	---	---	---	---	RBCG
---	---	---	LTZU	---	---	---	---	---	---	---	XPCS	---	---	---	---	RBCG
LTGU	LTTU	LT6GE	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	---	---	---	---	RBCG
---	---	---	---	LTEU	---	---	TYPEA O	TYPEB	CYL	---	---	---	---	---	C6	---
LTGU	LTTU	LT6GE	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
LTGU	LTTU	LT6GE	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
LTGU	LTTU	LT6GE	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
---	---	---	---	---	---	---	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
LTGU	LTTU	LT6GE	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
LTGU	LTTU	LT6GE	Temperature	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
LTGU	LTTU	LT6GE	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
LTGU	LTTU	LT6GE	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
LTGU	LTTU	LT6GE	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
---	---	---	---	LTEU	---	---	---	---	---	EMC CYL	---	---	---	---	C6	---
LTGU	LTTU	LT6GE	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
---	---	---	EMC	LTEU	---	---	---	---	---	EMC CYL	---	---	---	---	C6	---
LTGU	LTTU	LT6GE	---	---	LTXE	LT6XE	TYPEA O	TYPEB	CYL	---	---	Ranger SST	Ranger AL	Ranger NM	---	---
---	---	---	---	LTEU	---	---	---	---	---	EMC CYL	---	---	---	---	C6	---
LTGU_QST_0722.pdf		LT6GE_QST_0722.pdf		LTEU_QST_0722.pdf		LT6XE_QST_0722.pdf		TYPEB_QST_0722.pdf		EMC_CYL_QST_0722.pdf		CC_QST_0722.pdf				
LTTU_QST_0722.pdf		LTZU_QST_0722.pdf		LTXE_QST_0722.pdf		TYPEA_O_QST_0722.pdf		CYL_QST_0722.pdf		XPCS_QST_0722.pdf						

Home

Electrical Distribution

ANSI Instrument Transformers and Sensors

Building Automation & Controls

Bus Bar System (Smisline)

Busway

Cable Protection Systems for Industrial Enclosures

Circuit Breaker Kits - Trip Units - Racks - Cabinets

Circuit Breakers

Contactors

Distribution Automation

Drives and Soft Starters

Electronic Relays & Controls

Emergency Lighting

Electrical Distribution

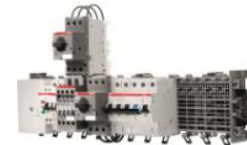
- Catalog Center
- Product Selector
- Publication Libr
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ANSI Instrument Transformers and Sensors



Building Automation & Controls



Bus Bar System (Smisline)



Busway



Cable Protection Systems for Industrial Enclosures



Circuit Breaker Kits - Trip Units - Racks - Cabinets

CPS Selection Tool Demo

Hoffman - Aluminum






Products Services Industries Resources Your Business About Us

[Home](#) > Cable Protection Systems for Industrial Enclosures

Cable Protection Systems for Industrial Enclosures

Carlton - Non-Metallic
Hoffman - Aluminum
Hoffman - Mild Steel
Hoffman - Non-Metallic
Hoffman - Stainless

Cable Protection Systems for Industrial Enclosures

 Carlton <u>Carlton - Non-Metallic</u>	 Hoffman <u>Hoffman - Aluminum</u>	 Hoffman <u>Hoffman - Mild Steel</u>
 Hoffman <u>Hoffman - Non-Metallic</u>	 Hoffman <u>Hoffman - Stainless</u>	

Click on desired enclosure category:

- Non-metallic
- Aluminum
- Mild Steel
- Stainless Steel

CPS Selection Tool Demo



Hoffman Aluminum – Hover Window

Home > Cable Protection Systems for Industrial Enclosures > Hoffman - Aluminum

Narrow your results + -

Enclosure Type -

- A4A: Continuous Hinge with Clamps, Type 4X
- A51A: Clamp Cover, Type 4X
- A51A: Continuous Hinge with Clamps, Type 12
- CA1: Compact, Type 4X**

... +

Select a Cable Protection Solution -

- Cable Glands & Cord Connectors

... +

Hoffman - Aluminum

9 products match your selections

Display 10 per page Compare

Image	Catalog No.	Description	
		Enclosure Type: CA1: Compact, Type 4X Material Type: Cast Aluminum NEMA 4, 4X, 12, 13 UL, cUL 4, 4X, 12, 13 CSA 4, 4X, 12, 13 IEC IP66 App. Notes Corrosive, Indoor or Outdoor, Light Weight	Non-Metallic Type C, UR/CSA, 3/8 to 5" <input type="checkbox"/>
	LTAE (A)	Stainless Steel, CE, 3/8 to 4", Stainless Steel Core	<input type="checkbox"/>
	LTAE (A)	General Purpose, CE, 3/8 to 4", Aluminum Core	<input type="checkbox"/>
	LTGU (A)	General Purpose, UL/CSA, 3/8 to 4", Steel Core	<input type="checkbox"/>

CPS Selection Tool Demo

Hoffman Aluminum – Flexible Metallic

- Click the desired specific enclosure model
- Click the desired type of cable protection solution (Flexible metallic, Flexible non-metallic, Cable glands and cord connectors)
- Once you've selected both, output will display all T&B Liquidtight recommendations that have matching ingress ratings and application characteristics of the enclosure you've selected
- Click on Conduit Type. for more information

* **Be sure to only select one enclosure type,**

Home > Cable Protection Systems for Industrial Enclosures > Hoffman - Aluminum

Narrow your results clear + -

Enclosure Type -

- A4A: Continuous Hinge with Clamps, Type 4X
- A51A: Clamp Cover, Type 4X
- A51A: Continuous Hinge with Clamps, Type 12
- CA1: Compact, Type 4X
- ... +

Select a Cable Protection Solution -

- Cable Glands & Cord Connectors
- Flexible Metallic
- Flexible Non-Metallic
- ... -

Hoffman - Aluminum

3 products match your selections

Display per page

Image	Catalog No.	Description
	LT6GE (A)	Stainless Steel, CE, 3/8 to 4", Stainless Steel Core
	LTAE (A)	General Purpose, CE, 3/8 to 4", Aluminum Core
	LTGU (A)	General Purpose, UL/CSA, 3/8 to 4", Steel Core

CPS Tool Demo

- After choosing the product, you will be led to this screen
- Click on link to the Quick Select Table to reach complete bill of materials

Products Services Industries Resources Your Business About Us

Home > Cable Protection Systems for Industrial Enclosures > Hoffman - Aluminum

Representative Image [View Larger](#)

Catalog No. : LTAE (A)
Description: General Purpose, CE, 3/8 to 4", Aluminum Core
UPC:
For more info visit: electrification.us.abb.com

Specifications Publications Buy Online

Descriptors

Category Hoffman - Aluminum

Specifications

Quick Select Table	LTAE_QST_0722.pdf
Select a Cable Protection Solution	Flexible Metallic
Enclosure Type	A51A: Continuous Hinge with Clamps, Type 12 A51A: Clamp Cover, Type 4X A4A: Continuous Hinge with Clamps, Type 4X CA1: Compact, Type 4X


CPS Selection Tool Demo

Hoffman Non-Metallic – Type A

Quick Select Table: TYPE A Non-metallic Conduit, UL Listed

LT Fitting Ingress Ratings: ¹⁾
 Non-metallic & Stainless Steel Fittings:
 NEMA: Type 3, 3R, 4, 4X, 12, 13
 IEC Ingress: IP66, IP69
 Steel Fittings:
 NEMA: Type 3, 3R, 4, 12, 13

System Temperature Ratings:
 UL: Dry: -18 to +105°C (-28 to +221°F)
 Oil: -18 to +70°C (-28 to +158°F)
 Wet: -18 to +60°C (-28 to +140°F)
 cULus: Dry: -18 to +105°C (-28 to +221°F)




TYPE A Non-metallic Liquid-tight Flexible Conduit References:
 Technical Data Sheet: TDS000630
 Chemical Resistance Guide: TDS000117
 UL 1660
 CSA C22.2, No. 227.2

**UL File: E95745
 UL File: E95746**

Type A Liquid-tight Fitting References:
 Technical Data Sheet: TDS000592 (Ser. 6300)
 TDS000628 (Ser. 6300SST)
 TDS000629 (Ser. 3700)
 Chemical Resist. Guide: TDS000081
 UL 514B
 UL File: E23018


Typical Applications: UL Listed and CSA Certified for General Purpose Applications where bonding is required and highest performance under severe environmental conditions.

Liquid-tight Flexible Non-Metallic Conduit (LFNCA)										Fittings										Accessories				
Core Material: PVC Web Mesh Jacket Material: PVC, Smooth, Orange Copper Bonding Wire: None										Reinforced Resin Stainless Steel 304 Steel Galv														
T&B Liquidtight Systems TYPEA- 3/4 in (21mm) ABB 																								
Trade Size Reference		Catalog #		Technical		Type		Supplied with Sealing O-Ring & Steel Locknut			Supplied with 320s Seal-Gasket & SST Locknut			Supplied with 320s Seal-Gasket & Steel Locknut				Seal Gasket		Conduit Supports				
UL	CSA	ISO/IEC	Part No.	Carton Feet	Meters	UL Bond Wire	ID Range	Min. Bend Radius	Std.	Thread	Straight	45°	90°	Straight	45°	90°	Straight	45°	90°	Std	Steel 1 W	Steel 2H	SST 2H	SST 1H
Inch	Metric	Metric					Inch	mm	Inch	mm	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
3/8"	12mm	16mm	TYPEA12-50	250	75	No	0.485	12.3	2.5"	64mm	6300-12	6300-12	6300-12	6300-12	6300-12	6300-12	6300-12	6300-12	6300-12	6300-12	6300-12	6300-12	6300-12	6300-12
1/2"	16mm	20mm	TYPEA16-50	200	60	No	0.620	15.7	3.0"	76mm	6300-16	6300-16	6300-16	6300-16	6300-16	6300-16	6300-16	6300-16	6300-16	6300-16	6300-16	6300-16	6300-16	6300-16
3/4"	21mm	25mm	TYPEA21-50	175	54	No	0.815	20.7	4.0"	102mm	6300-21	6300-21	6300-21	6300-21	6300-21	6300-21	6300-21	6300-21	6300-21	6300-21	6300-21	6300-21	6300-21	6300-21
1"	27mm	32mm	TYPEA27-100	100							6300-27	6300-27	6300-27	6300-27	6300-27	6300-27	6300-27	6300-27	6300-27	6300-27	6300-27	6300-27	6300-27	6300-27
1-1/4"	35mm	40mm	TYPEA35-100	100							6300-35	6300-35	6300-35	6300-35	6300-35	6300-35	6300-35	6300-35	6300-35	6300-35	6300-35	6300-35	6300-35	6300-35
1-1/2"	41mm	50mm	TYPEA41-50	50							6300-41	6300-41	6300-41	6300-41	6300-41	6300-41	6300-41	6300-41	6300-41	6300-41	6300-41	6300-41	6300-41	6300-41
2"	53mm	63mm	TYPEA53-50	50							6300-53	6300-53	6300-53	6300-53	6300-53	6300-53	6300-53	6300-53	6300-53	6300-53	6300-53	6300-53	6300-53	6300-53
2-1/2"	63mm	70mm	TYPEA63-50								6300-63	6300-63	6300-63	6300-63	6300-63	6300-63	6300-63	6300-63	6300-63	6300-63	6300-63	6300-63	6300-63	6300-63
3"	78mm	80mm	TYPEA78-50								6300-78	6300-78	6300-78	6300-78	6300-78	6300-78	6300-78	6300-78	6300-78	6300-78	6300-78	6300-78	6300-78	6300-78
4"	103mm	100mm	TYPEA103-50								6300-103	6300-103	6300-103	6300-103	6300-103	6300-103	6300-103	6300-103	6300-103	6300-103	6300-103	6300-103	6300-103	6300-103

TECHNICAL DATA SHEET - INTERACTIVE PDF
Conduit, Type A, non-metallic, flexible

T&B Liquidtight Systems

Designed to provide UL Type A cable protection where liquid-tight performance and high flexibility are required.

Certifications / Standards:

 3-Part Specification 26 09 0124
 End User Tools

Features:

- Flexible, high strength, 320s PVC, 320s Web Mesh
- Liquid-tight, non-metallic conduit
- Available in 12mm, 16mm, 20mm, 25mm, 32mm, 40mm, 50mm, 63mm, 70mm, 80mm, 100mm, 103mm
- No metal parts to help you from abrasion or bending
- Smooth, slippery inner core of flexible PVC that is bonded to the exterior of flexible PVC
- Multiple color-coded end caps for identification
- Single threaded


Applications:

- Designed to provide liquid-tight flexible cable protection between the fittings, conduits and enclosure wall
- For use with T&B Liquidtight Type A fittings to ensure liquid-tight connection
- Series 6300 equipment
- Series 6300ST stainless steel
- For use in outdoor, indoor, corrosive, and hazardous environments
- Suitable for use in high-voltage applications
- Typical applications include: general purpose industrial and commercial construction, machine OEMs, panel builders, indoor and outdoor applications

TECHNICAL DATA SHEET - INTERACTIVE PDF
Fittings, Series 6300 Non-metallic Liquid-tight Type A
 For use with non-metallic Type A raceway

T&B Liquidtight Systems

Glass filled reinforced thermoplastic components provide excellent durability in the most demanding applications for Type A conduit.

Certifications / Standards:

 3-Part Specification End User Tools

Features:

- Thermoplastic, glass reinforced body and gasket
- Available in 12mm, 16mm, 20mm, 25mm, 32mm, 40mm, 50mm, 63mm, 70mm, 80mm, 100mm, 103mm
- Provided with a captive O-ring seal and locknut
- Ideal for use in highly corrosive environments

Applications:

- Designed to provide a liquid-tight connection between the fittings, conduits and enclosure wall
- Used to connect flexible liquid-tight Type A conduit to rigid components
- Typical applications include: general purpose industrial and commercial construction, machine OEMs, panel builders, indoor and outdoor applications
- Liquid-tight applications against water, oils, cooling fluids, and acids
- For use in hazardous locations up to 1,000 V

The responsibility of the user based on actual application, standards and local etc.

T&B Liquidtight Systems®

CPS Selection Tool Demo

Hoffman Mild Steel – Cable & Cord

Quick Select Table: Cord Connectors & Cable Glands

Ingress Ratings:		UL: 6 NEMA: 3, 3R, 4, 6, 12 IEC: IP66 File: E13938 Sec.10	UL: 4, 4X, 6 NEMA: 3, 3R, 4, 4X, 6, 12 IEC: IP66 File: E13938 Sec.10	UL: 4X, 6 NEMA: 3, 3R, 4, 4X, 6, 12 IEC: IP66 File: E13938 Sec.10	UL: NA NEMA: 3, 3R, 4, 12 IEC: IP66	UL: NA NEMA: 4, 4X, 12 IEC: IP68, IP69	UL: NA NEMA: 4, 4X, 12 IEC: IP66, IP68	UL: NA NEMA: 4, 4X, 12 IEC: IP66, IP68	UL: 4X, 6 NEMA: 3, 3R, 4, 4X, 6, 12 IEC: IP66, IP68 File: E13938 Sec.9	UL: NA NEMA: 3, 3R, 4, 4X, 12 IEC: IP66																					
Type	Metallic Cord Connectors								Non-Metallic Cord Connectors				Accessories																		
	Ranger® Ser. 2900/4900 General Purpose - Steel		Ranger® Ser. 2900SS17 Stainless Steel		Ranger® Ser. 2900AL/4900AL Aluminum		T&B® Ser. 2500/2200 General Purpose - Steel		SAM Cable Gland Stainless Steel (EP & EMC)		RBCG Series Halogen Free - NPB		C5 Series EMC - NPB		C3 Series Ex - NPB		Ranger® Ser. 2900NM General Purpose (Nylon)				Black Beauty® Ser. 2600 General Purpose (Nylon)				Seal Gaskets				Lock Nuts		
Trade Size	Straight		45°		90°		Cable Range (Min-Max In)		Straight		45°		90°		Cable Range (Min-Max In)		Straight		45°		90°		Cable Range (Min-Max In)		Steel		SS17		Al		
1/4"	2900		4900		2900SS17		2900AL		2500		2200		2500		2200		2500		2200		2900NM		2600		2900		2600		2600		
3/8"	2900		4900		2900SS17		2900AL		2500		2200		2500		2200		2500		2200		2900NM		2600		2900		2600		2600		
1/2"	2900		4900		2900SS17		2900AL		2500		2200		2500		2200		2500		2200		2900NM		2600		2900		2600		2600		
3/4"	2900		4900		2900SS17		2900AL		2500		2200		2500		2200		2500		2200		2900NM		2600		2900		2600		2600		
1"	2900		4900		2900SS17		2900AL		2500		2200		2500		2200		2500		2200		2900NM		2600		2900		2600		2600		
1-1/4"	2900		4900		2900SS17		2900AL		2500		2200		2500		2200		2500		2200		2900NM		2600		2900		2600		2600		
1-1/2"	2900		4900		2900SS17		2900AL		2500		2200		2500		2200		2500		2200		2900NM		2600		2900		2600		2600		
2"	2900		4900		2900SS17		2900AL		2500		2200		2500		2200		2500		2200		2900NM		2600		2900		2600		2600		
2-1/2"	2900		4900		2900SS17		2900AL		2500		2200		2500		2200		2500		2200		2900NM		2600		2900		2600		2600		
3"	2900		4900		2900SS17		2900AL		2500		2200		2500		2200		2500		2200		2900NM		2600		2900		2600		2600		

TECHNICAL DATA SHEET

ABB cable glands – NSG series
General purpose nylon cable glands



Ideal for installations such as robot manufacturers, packaging equipment, machine tool building and other industrial OEM and MRO applications.

Certifications / Standards:

- UL
- CE

Features & Benefits:

- Large cable clamping range
- Light weight mechanical grip
- Full length tool-free installation
- Corrosion resistant

Applications:

- General purpose
- Machine building
- Maintenance and repair
- Available for cable trays
- Non-ferrous
- Flame retardant

Environmental ratings:

Working Temperature:

- Normal use: -25 to +55°C (-13 to +132°F)

Ingress protection:

- To meet ingress protection, use suitable gaskets and lock nut when required
- Type 60 or 6 Series (EMC Series Sealing Ring)
- UL and IP66 certified

File:

- See publication 105000001

Chemical resistance guide:

- See publication 105000001

Conforms to:

- UL
- CSA C22.2 08.10
- EN 50308
- ATEX 100
- ATEX 200
- ATEX 300
- ATEX 400
- ATEX 500
- ATEX 600
- ATEX 700
- ATEX 800
- ATEX 900
- ATEX 1000
- ATEX 1100
- ATEX 1200
- ATEX 1300
- ATEX 1400
- ATEX 1500
- ATEX 1600
- ATEX 1700
- ATEX 1800
- ATEX 1900
- ATEX 2000
- ATEX 2100
- ATEX 2200
- ATEX 2300
- ATEX 2400
- ATEX 2500
- ATEX 2600
- ATEX 2700
- ATEX 2800
- ATEX 2900
- ATEX 3000
- ATEX 3100
- ATEX 3200
- ATEX 3300
- ATEX 3400
- ATEX 3500
- ATEX 3600
- ATEX 3700
- ATEX 3800
- ATEX 3900
- ATEX 4000
- ATEX 4100
- ATEX 4200
- ATEX 4300
- ATEX 4400
- ATEX 4500
- ATEX 4600
- ATEX 4700
- ATEX 4800
- ATEX 4900
- ATEX 5000
- ATEX 5100
- ATEX 5200
- ATEX 5300
- ATEX 5400
- ATEX 5500
- ATEX 5600
- ATEX 5700
- ATEX 5800
- ATEX 5900
- ATEX 6000
- ATEX 6100
- ATEX 6200
- ATEX 6300
- ATEX 6400
- ATEX 6500
- ATEX 6600
- ATEX 6700
- ATEX 6800
- ATEX 6900
- ATEX 7000
- ATEX 7100
- ATEX 7200
- ATEX 7300
- ATEX 7400
- ATEX 7500
- ATEX 7600
- ATEX 7700
- ATEX 7800
- ATEX 7900
- ATEX 8000
- ATEX 8100
- ATEX 8200
- ATEX 8300
- ATEX 8400
- ATEX 8500
- ATEX 8600
- ATEX 8700
- ATEX 8800
- ATEX 8900
- ATEX 9000
- ATEX 9100
- ATEX 9200
- ATEX 9300
- ATEX 9400
- ATEX 9500
- ATEX 9600
- ATEX 9700
- ATEX 9800
- ATEX 9900
- ATEX 10000

Abb: T&B Liquidtight Systems® Quick Select Tables are intended to assist users with recommended component selection for Cable Protection System solutions. Final component selection is the responsibility of the user based on actual application, standards and local electrical code requirements. The information in this QTS is regularly updated and is subject to change at the discretion of T&B/ABB. Go to <https://library.abb.com/> for latest document revision.

- Notes:
- 1) Seal Gaskets required to achieve ingress ratings
 - 2)
 - 3)
 - 4)

CC_QST_0722.pdf
T&B Liquidtight Systems®

T&B Liquidtight Systems™

Ingress Integrity Testing

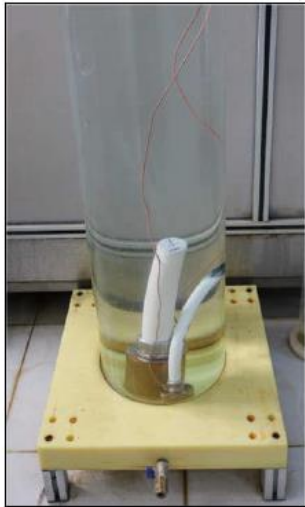
Umbrella Testing: 3/8", 1", 2", 4" Trade Sizes

UL Ingress Protection:

- UL Type 13 Oil Exclusion Test - *Passed*
- UL Type 4 Water Hose Test - *Passed*
- UL Type 4X Outdoor Corrosion Test – *Passed*

IEC Ingress Protection:

- IP 6X Dust-tight Test – *Passed*
- IP X6 Hose Test – *Passed*
- IP X7 Submersion Test – *Passed*
- IP X8 Submersion Test – *Passed*
- IP x9 High Pressure Washer Test - *Passed*



Desk/Counter Mat and Wall Chart

T&B Liquidtight Systems™

"Solutions Expert for Everything Liquid-tight"

General Purpose										Wide Temperature (-60 to +150°C)										Extreme Temperature (-60 to +150°C)										Stainless Steel - Corrosion									
Type LTGU Conduit					Ser. 5300 Liquid-tight Fittings - Steel/MI					Type LTTU Conduit					Ser. 5300-HT Liquid-tight Fittings - Steel/MI					Type LTXE Conduit					Ser. 5300-HT Liquid-tight Fittings - Steel/MI					Type LTGE Conduit					Ser. 5300SST6 Liquid-tight Fittings - Stainless Steel				
UL	CSA	Trade Size	Thread Type	Part No.	Feet	UL Bond Wire	Straight	45°	90°	All Ground	Seal Gasket	Locknuts	Part No.	Feet	UL Bond Wire	Straight	45°	90°	Seal Gasket	Locknuts	Part No.	Feet	UL Bond Wire	Straight	45°	90°	Seal Gasket	Locknuts	Part No.	Feet	UL Bond Wire	Straight	45°	90°	Seal Gasket	Locknuts			
3/8"	12mm	1/2" NPT	LTGU501G-C	100	Yes	5331	5341	5351	...GR	5261	Included with fitting	LTTU501G-C	100	Yes	5331-HT	5341-HT	5351-HT	5261-HT	Included with fitting	LTXFU501L-C	100	No	5331-HT	5341-HT	5351-HT	5261-HT	Included with fitting	LTGE501G-C	100	No	5331SST6	5341SST6	5351SST6	5261	1415ST				
1/2"	16mm	1/2" NPT	LTGU502G-C	100	Yes	5332	5342	5352-TB	...GR	5262		LTTU502G-C	100	Yes	5332-HT	5342-HT	5352-HT	5262-HT		LTXFU502L-C	100	No	5332-HT	5342-HT	5352-HT	5262-HT		LTGE502G-C	100	No	5332SST6	5342SST6	5352SST6	5262	1425ST				
3/4"	21mm	3/4" NPT	LTGU503G-C	100	Yes	5333	5343	5353	...GR	5263		LTTU503G-C	100	Yes	5333-HT	5343-HT	5353-HT	5263-HT		LTXFU503L-C	100	No	5333-HT	5343-HT	5353-HT	5263-HT		LTGE503G-C	100	No	5333SST6	5343SST6	5353SST6	5263	1435ST				
1"	27mm	1" NPT	LTGU504G-C	100	Yes	5334-TB	5344	5354	...GR	5264		LTTU504G-C	100	Yes	5334-HT	5344-HT	5354-HT	5264-HT		LTXFU504L-C	100	No	5334-HT	5344-HT	5354-HT	5264-HT		LTGE504G-C	100	No	5334SST6	5344SST6	5354SST6	5264	1445ST				
1-1/4"	35mm	1-1/4" NPT	LTGU505G-B	50	Yes	5335	5345	5355	...GR	5265		LTTU505G-B	50	Yes	5335-HT	5345-HT	5355-HT	5265-HT		LTXFU505L-B	50	No	5335-HT	5345-HT	5355-HT	5265-HT		LTGE505G-B	50	No	5335SST6	5345SST6	5355SST6	5265	1455ST				
1-1/2"	41mm	1-1/2" NPT	LTGU506G-B	50	No	5336	5346	5356	...GR	5266		LTTU506G-B	50	No	5336-HT	5346-HT	5356-HT	5266-HT		LTXFU506L-B	50	No	5336-HT	5346-HT	5356-HT	5266-HT		LTGE506G-B	50	No	5336SST6	5346SST6	5356SST6	5266	1465ST				
2"	53mm	2" NPT	LTGU507G-B	50	No	5337	5347	5357	...GR	5267		LTTU507G-B	50	No	5337-HT	5347-HT	5357-HT	5267-HT		LTXFU507L-B	50	No	5337-HT	5347-HT	5357-HT	5267-HT		LTGE507G-B	50	No	5337SST6	5347SST6	5357SST6	5267	1475ST				
2-1/2"	63mm	2-1/2" NPT	LTGU508G-A	25	No	5338	5348	5358	...GR	5268		LTTU508G-A	25	No	5338-HT	5348-HT	5358-HT	5268-HT		LTXFU508L-A	25	No	5338-HT	5348-HT	5358-HT	5268-HT		LTGE508G-A	25	No	---	---	---	---	---				
3"	78mm	3" NPT	LTGU509G-A	25	No	5339	5349	5359	...GR	5269		LTTU509G-A	25	No	5339-HT	5349-HT	5359-HT	5269-HT		LTXFU509L-A	25	No	5339-HT	5349-HT	5359-HT	5269-HT		LTGE509G-A	25	No	---	---	---	---	---				
4"	103mm	4" NPT	LTGU511G-A	25	No	5340	5350	5360	...GR	5270		LTTU511G-A	25	No	5340-HT	5350-HT	5360-HT	5270-HT		LTXFU511L-A	25	No	5340-HT	5350-HT	5360-HT	5270-HT		LTGE511G-A	25	No	---	---	---	---	---				

Note: Products must be installed in accordance with applicable national and local electrical codes

Aluminum										Food & Beverage - Metallic										Food & Beverage - Type A Non-Metallic										General Purpose - Type B Non-Metallic										Supports	
Conduit Type LTAE					Ser. 5200AL Liquid-tight Fittings					Conduit Type LTFU Blue UL/CSA					Ser. 5300SST6-FB Liquid-tight Fittings					Type A Blue Antimicrobial UL/CSA					Ser. 6300 Liquid-tight Fittings					Type LTC Conduit UL/CSA					Ser. 5200/5300 Liquid-tight Fittings					1 & 2 Hole	
UL	CSA	Trade Size	Thread Type	Part No.	Feet	UL Bond Wire	Straight	45°	90°	All Ground	Seal Gasket	Locknuts	Part No.	Feet	UL Bond Wire	Straight	45°	90°	Seal Gasket	Locknuts	Part No.	Feet	UL Bond Wire	Straight	45°	90°	Seal Kit	Locknuts	Part No.	Feet	UL Bond Wire	Straight	45°	90°	Locknuts	Steel	Stainless				
3/8"	12mm	1/2" NPT	LTAE502G-C	100	Yes	5331AL	---	5351AL	...GR	5261	Included with fitting	LTFU501L-C	100	Yes	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	HS-101	HS101-SS		
1/2"	16mm	1/2" NPT	LTAE503G-C	100	Yes	5332AL	---	5352AL	...GR	5262		LTFU502L-C	100	Yes	5332SST6-FB	5342SST6-FB	5352SST6-FB	5262-FB	1425ST	TYPEA050L-C	100	No	6302	---	6322	5262	LTC039	100	No	L738P	L7438P	L7938P	---	---	---	---	---	HS-102	HS102-SS		
3/4"	21mm	3/4" NPT	LTAE504G-C	100	Yes	5333AL	---	5353AL	...GR	5263		LTFU503L-C	100	Yes	5333SST6-FB	5343SST6-FB	5353SST6-FB	5263-FB	1435ST	TYPEA075L-C	100	No	6303	---	6323	5263	LTC040	100	No	L775P	L7475P	L7975P	---	---	---	---	---	HS-103	HS103-SS		
1"	27mm	1" NPT	LTAE505G-B	100	Yes	5334AL	---	5354AL	...GR	5264		LTFU504L-C	100	Yes	5334SST6-FB	5344SST6-FB	5354SST6-FB	5264-FB	1445ST	TYPEA100L-C	100	No	6304	---	6324	5264	LTC041	100	No	L7100P	L74100P	L79100P	---	---	---	---	---	HS-104	HS104-SS		
1-1/4"	35mm	1-1/4" NPT	LTAE506G-B	50	Yes	5335AL	---	5355AL	...GR	5265		LTFU505L-B	50	Yes	5335SST6-FB	5345SST6-FB	5355SST6-FB	5265-FB	1455ST	TYPEA125L-B	50	No	6305	---	6325	5265	LTC042	50	No	L7125P	L74125P	L79125P	---	---	---	---	---	HS-105	HS105-SS		
1-1/2"	41mm	1-1/2" NPT	LTAE507G-B	50	No	5336AL	---	5356AL	...GR	5266		LTFU506L-B	50	No	5336SST6-FB	5346SST6-FB	5356SST6-FB	5266-FB	1465ST	TYPEA150L-B	50	No	6306	---	6326	5266	LTC043	50	No	L7150P	L74150P	L79150P	---	---	---	---	---	HS-106	HS106-SS		
2"	53mm	2" NPT	LTAE508G-A	50	No	5337AL	---	5357AL	...GR	5267		LTFU507L-B	50	No	5337SST6-FB	5347SST6-FB	5357SST6-FB	5267-FB	1475ST	TYPEA200L-B	50	No	6307	---	6327	5267	LTC044	50	No	L7200P	L74200P	L79200P	---	---	---	---	---	HS-107	HS107-SS		
2-1/2"	63mm	2-1/2" NPT	LTAE509G-A	25	No	5338AL	---	---	...GR	5268		LTFU508L-A	25	No	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	HS-108	HS108-SS			
3"	78mm	3" NPT	LTAE511G-A	25	No	5339AL	---	---	...GR	5269		LTFU509L-A	25	No	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	HS-109	HS109-SS			
4"	103mm	4" NPT	LTAE511G-A	25	No	5340AL	---	---	...GR	5270		LTFU511L-A	25	No	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	HS-110	HS110-SS			

Visit our Website:

- CPS Selection Tool
- Application Profiles
- Technical Data Sheets
- Product Catalogs
- Quick Select Tables



Enclosure Ingress Sticker

Attention Installers

To maintain UL 508A Enclosure Ingress Rating requirement, use T&B conduit fittings specified below.
Open QR Code for product selection and technical details.

- Ser. 53xx (Steel/Malleable Iron)
- Ser. 53xxSST6 (Stainless Steel)
- Ser. 52xxAL (Aluminum)
- Ser. 53xx-NB (Nickel Plated Brass)



T&B Liquidtight Fittings							
Type	Steel/MI		Aluminum		Stainless Steel 316		Seal
Ingress	UL 3, 3R, 4, 12, 13		UL 3, 3R, 4, 12, 13		UL 3, 3R, 4, 4X, 12, 13		Gasket
Size	Straight	90 Elbow	Straight	90 Elbow	Straight	90 Elbow	
3/8"	5331	5351	5231AL	5251	5331SST6	5351SST6	5261
1/2"	5332	5352	5232AL	5252	5332SST6	5352SST6	5262
3/4"	5333	5353	5233AL	5253	5333SST6	5353SST6	5263
1"	5334-TB	5354	5234AL	5254	5334SST6	5354SST6	5264
1-1/4"	5335	5355	5235AL	5255	5335SST6	5355SST6	5265
1-1/2"	5336	5356	5236AL	5256	5336SST6	5356SST6	5266
2"	5337	5357	5237AL	5257	5337SST6	5357SST6	5267
2-1/2"	5338	5358	5238AL	5258	5338-NB	---	5268
3"	5339	5359	5239AL	5259	5339-NB	---	5269
4"	5340	5360	5240AL	5260	5340-NB	---	5270

T&B Liquidtight LFMC Conduits				
Type	General Purpose	General Purpose	General Purpose	
Size	Steel Core	Aluminum	Stainless Steel 316	
3/8"	LTGUS01G-C	LTAES01G-C	LT6GES01G-C	
1/2"	LTGUS02G-C	LTAES02G-C	LT6GES02G-C	
3/4"	LTGUS03G-C	LTAES03G-C	LT6GES03G-C	
1"	LTGUS04G-C	LTAES04G-C	LT6GES04G-C	
1-1/4"	LTGUS05G-B	LTAES05G-B	LT6GES05G-C	
1-1/2"	LTGUS06G-B	LTAES06G-B	LT6GES06G-C	
2"	LTGUS07G-B	LTAES07G-B	LT6GES07G-C	
2-1/2"	LTGUS08G-A	LTAES08G-A	LT6GES08G-C	
3"	LTGUS09G-A	LTAES09G-A	LT6GES09G-C	
4"	LTGUS11G-A	LTAES11G-A	LT6GES11G-C	

Note: Products must be installed in accordance with applicable national and local electrical codes

UL 508A, Sec. 53 - Enclosure Markings

53.3 An enclosed industrial control panel marked as Type 3, 3S, 3SX, 3X, 4, 4X, 5, or 12 enclosure as specified in [53.1](#) that is not provided with conduit hubs as specified in [Table 19.1](#) shall be marked with instructions identifying the specific hub or fitting intended to be used or to use hubs or fittings with the same environmental rating as the enclosure.

CPS Selection Tool Demo

- Available on ABB Empower Selection Tool website
- Public Access, no logon required

https://empower.abb.com/ecatalog/ec/EN_NA/c/Electrical_Distribution_1000

The screenshot shows the ABB Empower Selection Tool website. On the left is a navigation menu with categories like Home, Electrical Distribution, Building Automation & Controls, Busway, Circuit Breakers, Contactors & Starters, Controls & Protective Relays, Conversion Kits & Trip Units, Distribution Automation, Emergency Lighting, Hazardous Lighting, Instrument Transformers & Sensors, Load Centers, Modular Metering, Motor Control Centers, Panelboards, Pilot & Signaling Devices, Power Pedestals, RV Park Equipment, Soft Starters, Starters, and Surge Protective Devices. The main content area displays a grid of product categories: Electrical Distribution, Building Automation & Controls, Busway, Circuit Breakers, Contactors & Starters, Controls & Protective Relays, Conversion Kits & Trip Units, Distribution Automation, and Emergency Lighting. The 'Cable Protection Systems for Industrial Enclosures' category is highlighted with a red border, and a hand cursor icon points to it.

T&B Liquidtight Systems® NEW

“Cable Protection Systems for Industrial Enclosures”
UL 508A, Table 19.1 Compliant Solutions

Find the best cable protection solutions with UL Listed ingress ratings to match your industrial enclosure in just a few clicks!






Hoffman Carlon T&B Liquidtight Systems®

Ideal for Machine OEM's, UL Panel Builders, Consultants, Electrical Contractors and more. T&B Liquidtight Systems® new [Cable Protection Systems Selection Tool](#) enables users to select premier cable protection solutions that match the ingress ratings for application specific industrial enclosures!

Key features and benefits:

- Proper selection ensures reliable, long life ingress protection performance
- Avoid enclosure derating problems per UL 508A, 19.3 procedure
- UL Listed Ingress Ratings: Ser. 52/53[®] Liquid-tight Fittings & Ranger[®] Cord Connectors
- Metallic and non-metallic solutions for conduits, fittings and cord connectors
- Selection tool matches UL, CSA, NEMA and IEC IP enclosure ingress ratings to T&B Cable Protection Systems
- Application verticals including Stainless Steel, Food & Beverage, General Purpose, Wide & Extreme Temperature, EMC, Halogen Free, Non-Metallic, Aluminum and more
- Selection Tool covers all Hoffman and Carlon industrial enclosures

Click on this link for T&B's [CPS Selection Tool](#) to get started today!

Contact your local T&B rep to schedule a learning seminar.



T&B Liquidtight Systems®

Questions?

