FOOD & BEVERAGE

Food & beverage conduit systems

Cable protection systems

An augmented reality experience
What is it?

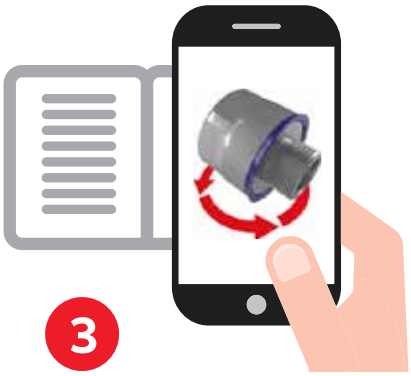
Augmented Reality, or AR, is a technology that uses digital overlays to 'augment' real-world environments.

AR lets users "see" using the cameras on their devices to display, interact with and experience images, 3D objects, sound and even tactile feedback for a more engaging augmented sense of the world.

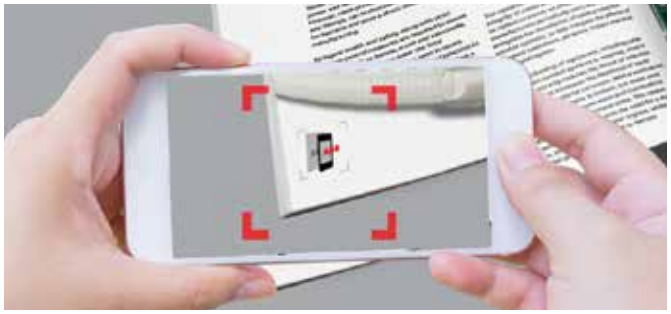
3 easy steps for an ABB augmented reality experience.

Download the ABB app from the App store (for Apple devices) or Google Play store and follow the instructions.

Place the AR brochure in front of you and point your device at the trigger image or play icons throughout the brochure.



Watch the augmented reality experience and start interacting with our AR content.

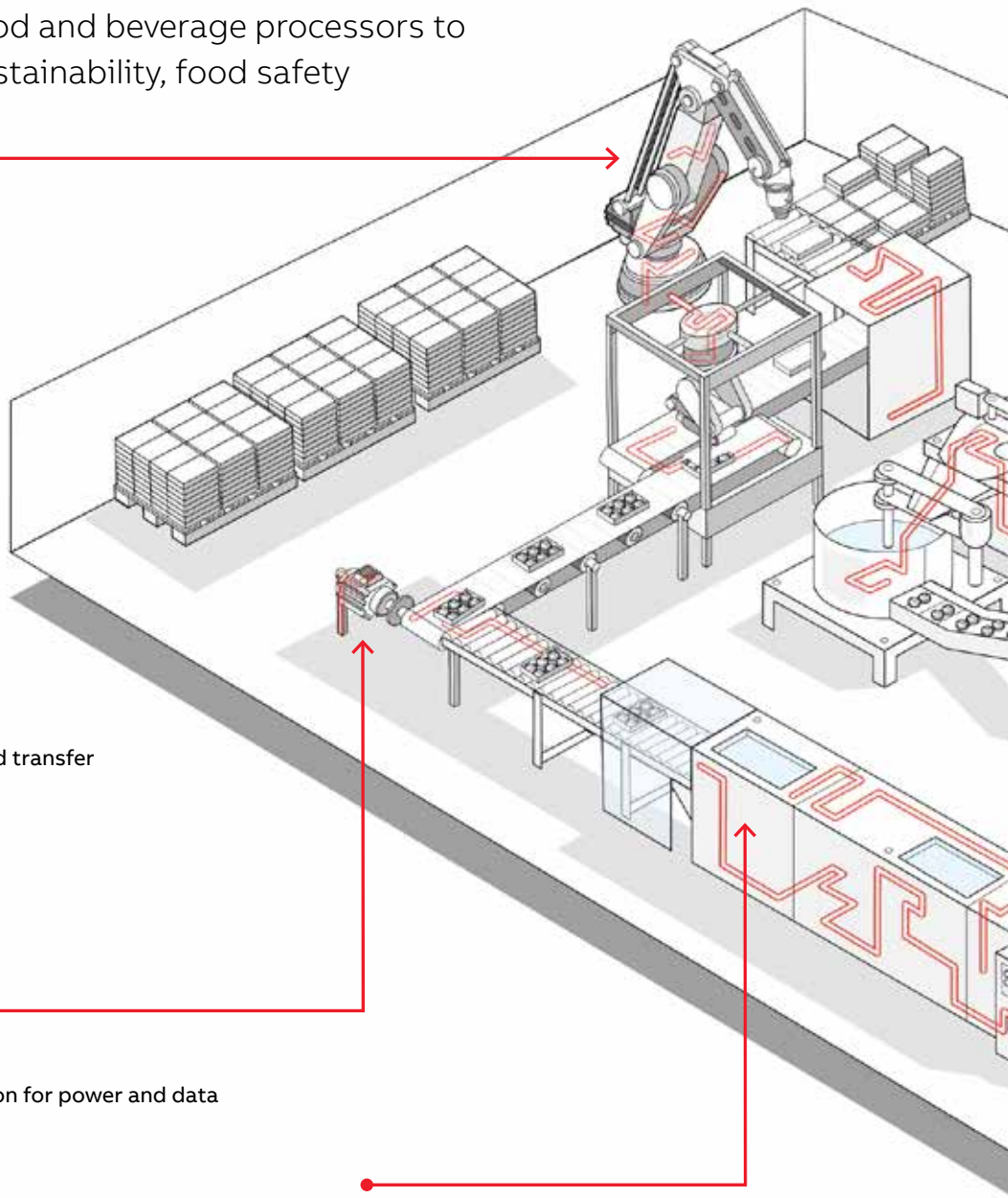


Point your device at the trigger image or play icons.

Enjoy the augmented reality experience.

ABB food & beverage conduit systems
Cable protection systems

ABB food and beverage conduit systems, are designed to protect complex processing equipment with sensitive electrical wiring systems, controls and automation. These solutions enable food and beverage processors to increase revenue, plant sustainability, food safety and brand equity.



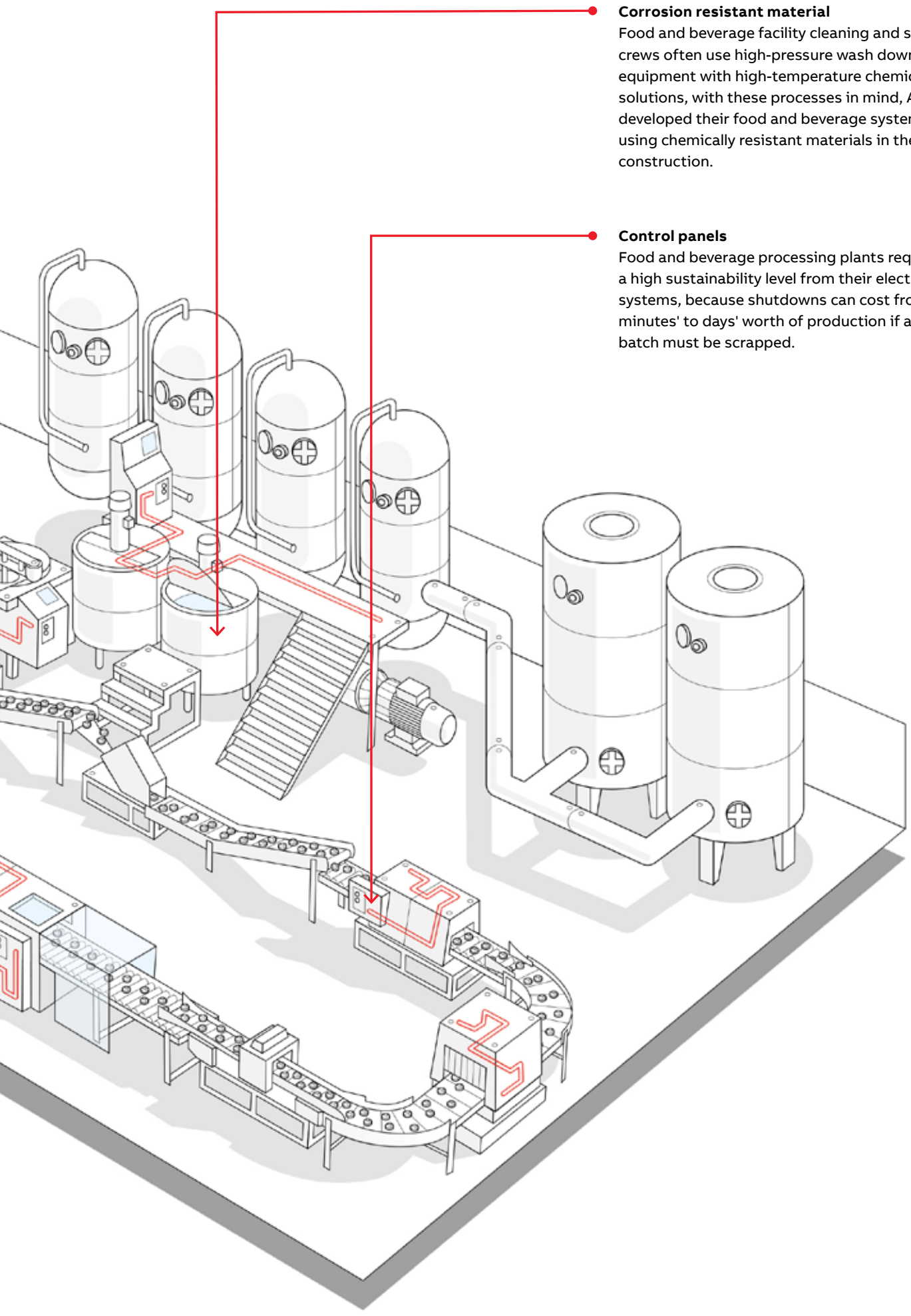
High flexibility protective systems
Pick and place robotic systems for rapid transfer of products around the process.

Drives and motors
Liquid tight protection for power and data connections.

Wiring networks
The liquid tight nature of our cable protection products - up to IP69 - are designed to protect power and data cables for internal and external wiring networks, allowing machinery to operate efficiently, safely, and hygienically, without compromising production and systems.

Corrosion resistant material
Food and beverage facility cleaning and sanitation crews often use high-pressure wash down cleaning equipment with high-temperature chemical solutions, with these processes in mind, ABB developed their food and beverage system using chemically resistant materials in their construction.

Control panels
Food and beverage processing plants require a high sustainability level from their electrical systems, because shutdowns can cost from minutes' to days' worth of production if a batch must be scrapped.



Food & beverage conduit systems

Antimicrobial cable protection solutions

The requirements of production equipment used in food and beverage processing are becoming ever more stringent – especially in relation to cleaning and hygiene. A single bacterial outbreak can eliminate decades of consumer trust and confidence, meaning the cleanability of all components and machinery is crucial.

Our antimicrobial conduit system, created with technology partner BioCote®, is suitable for food zone non-contact areas. The system integrates ionic silver antimicrobial protection into a new generation of liquid-tight conduit. Featuring a smooth, globally compliant thermoplastic jacket, the conduit is complimented by, a single-piece, liquid-tight 316 Stainless Steel fitting.

The new system represents a complete, easy-to-clean solution which significantly reduces the risk of bacterial contamination.

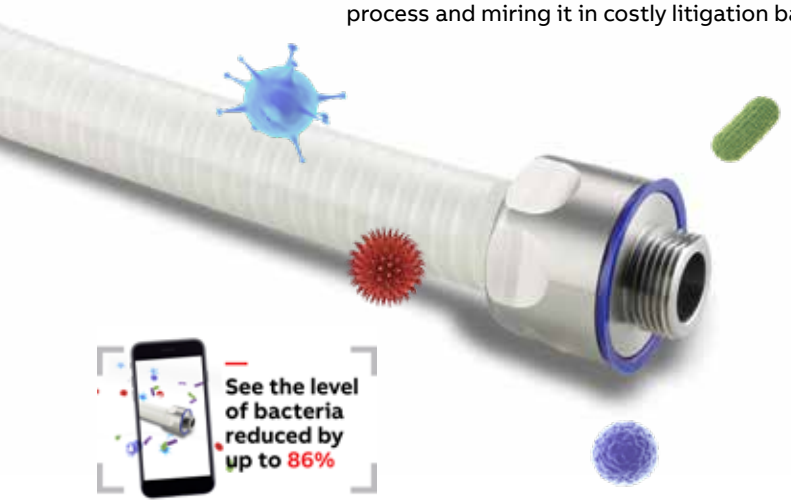
When clean just isn't clean enough
Cable protection in the food and beverage industry

Making the case for anti-microbial cable protection in the food and beverage industry. The threat of bacterial contamination is constant within the food & beverage industry, with mechanical equipment posing a potential area of risk. ABB for Adaptaflex outlines the issue and provides insight into preventing contamination issues.

Health and safety regulations within the food manufacturing industry are notoriously strict and end-users fight a constant battle to ensure that process equipment is operating efficiently, safely, and hygienically, without compromising valuable power and data connections.

Given the volume of mechanical process equipment involved in the food and beverage industry combined with the shift towards increased automation such as conveyor and feeder systems, there are often thousands of power and data cables that need to be protected. However, cable protection systems like conduits and fittings, can in themselves become a home for bacteria and pose a direct threat to food manufacturing.

Stringent health and safety, along with strict contamination control measures are required to ensure that microbes such as Listeria, E. coli and Salmonella are killed before they can enter the food production process. As we have seen in recent years, it can take just a single bacterial contamination to eradicate decades of consumer trust, crippling a company's finances in the process and miring it in costly litigation battles.



Many different types of conduit systems are used in the food and beverage industry, and these systems are not without their own challenges. It is well known and proven that bacteria can adapt and survive on the various surfaces, meaning a structured and thorough cleaning regime is a must for clean equipment and food safety. Typically, stainless steel equipment is cleaned up to five times a day in order in order to minimize potential infection. The chosen method, typically called wash-down, are high powered jets with or steam or hot water with chemical agents, typically anywhere from 50ºC up to circa 130ºC.

> 'It can take just a single bacterial contamination to eradicate decades of consumer trust'

The repeated cleaning process can impact the integrity of cables and wiring leading to the need to replace to ensure an effective system. As such, manufacturers periodically carry out maintainance alongside the installation of cable protection conduit systems, to help mitigate the effects of repeated washdown, abrasion, impact and dust and liquid ingress.

Regular cleaning of equipment, including cable protection conduit systems is required, since it only temporarily reduces the threat of cross contamination. However this increases the likelihood of liquid ingress and material corrosion. With a wash-down, the killing of bacteria is instant, but stops once stimulus (high pressure wash and chemicals) is removed and the equipment dries. This causes an obvious tension between the need for a dry environment to prevent water ingress, whilst, in turn, doing what's needed to hamper bacterial growth.

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01 How the anti-microbial protection works
—
02 Bacterial reduction over a two hour period

The solution created with technology partner BioCote®, is to integrate anti-microbial protection in to a new generation of liquid tight conduit. a smooth, FDA, EC and FSA compliant DuPont Hytrel® thermoplastic jacket, the conduit is complimented by, an industry first, single piece liquid tight 316 Stainless Steel fitting. The new system poses a viable alternative to other types of conduit systems and is perfectly suited for the protection of processing equipment and surrounding process area.

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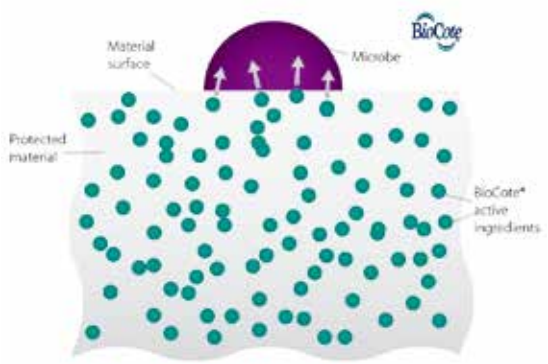
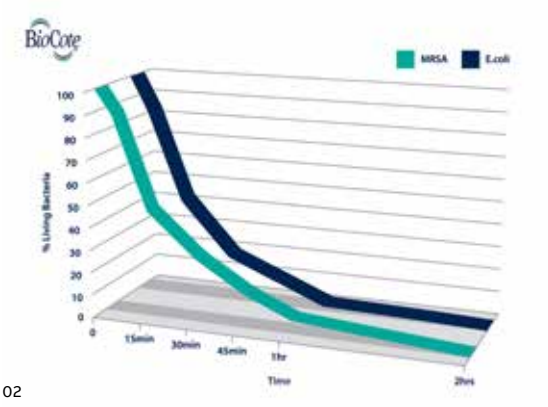
‘The science behind anti-microbial protection is fascinating’

The anti-microbial additive contains inert ionic silver, meaning it doesn’t react or change the appearance of the final product, additionally the additive won’t diminish in extreme temperatures, such as steam or deep freeze. Crucially, the anti-microbial protection will not wear off or wash away, as it is more than just a surface coating, in that it is incorporated to form an integral aspect of the product during manufacture. Most importantly, the bacteria cannot survive contact with the silver ions in the anti-microbial protection, because it in effect turns off the bacteria’s basic properties.



01

The science behind anti-microbial protection is fascinating. The silver ions on the surface of a material treated with anti-microbial additives bind with microbes they come into contact with and irreparably damage them, disrupting their normal cell function, stopping them from reproducing and finally resulting in the death of the cell.



02

Tests completed by BioCote®, see the level of bacteria reduced by up to 86% in the first 15 minutes and by 99% in just two hours. Based on the work and materials BioCote® provided to ABB, in addition to in-house testing, it’s been proven that the effectiveness of the anti-microbial treatment does not degrade over time, throughout storage, or during repeated wash-downs.

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‘...see the level of bacteria reduced by up to 86% in the first 15 minutes and by 99% in just two hours’

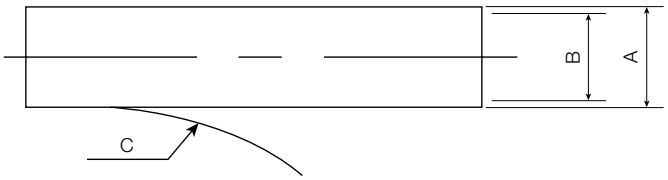
Given the size of the food and beverage market, the ABB’s range of food and beverage conduit solutions can offer end-users a quantifiable return on investment and help eliminate the risk of bacterial contamination, which could cost the industry both time and money.

Type SAMHL, SSAMHL and SAMHURL - Antimicrobial liquid tight conduit

Antimicrobial liquid tight high temperature covered steel flexible conduit. Suitable for food zone non-contact areas.

Features

- Type SAMHL - Galvanised steel core string packed with antimicrobial protection incorporated into a FDA, EC and FSA compliant DuPont Hytrel® thermoplastic jacket
- Type SSAMHL - Stainless steel string packed with antimicrobial protection incorporated into a FDA, EC and FSA compliant DuPont Hytrel® thermoplastic jacket
- Type SAMHURL - Galvanised steel core copper packed with antimicrobial protection incorporated into an FDA, EC and FSA compliant DuPont Hytrel® thermoplastic jacket
- IP65 - IP69 rated
- Temperature range -50ºC to +130ºC



Approvals

Type SAMHL Conformity
Low voltage directive
NSF 14159-1-2014
NSF 169-2009
BSI Kitemark KM35161

Type SSAMHL Conformity
Low voltage directive
NSF 14159-1-2014
NSF 169-2009
BSI Kitemark KM35161

Type SAMHURL Conformity
Low voltage directive
NSF 14159-1-2014
NSF 169-2009
UR file number E135398
BSI Kitemark KM35161

IP Rating	Appropriate Fitting
For use with: Type SAM fitting	
IP65	Yes
IP68	Yes (10 bar 30mins)
IP69	Yes

Material
Galvanised steel core with string packing (string packed up to 32mm)
Stainless steel core with string packing (string packed up to 32mm), larger sizes double interlocked
Galvanised steel core with copper packing
FDA, EC and FSA compliant DuPont Hytrel® thermoplastic jacket
Antimicrobial additive incorporated into Hytrel® jacket

Degree of Mechanical Protection
High corrosion resistance
High fatigue life
High chemical resistance
High flexibility

Temperature Range
Static Applications: -50ºC to +130ºC
Moving Applications: -5ºC to +150ºC

Fire Performance	
Test Standard	Performance Rating
IEC61386-1	Self Extinguishing

Part Numbers and Dimensions

Part no:	Conduit Size		Dimensions			GID Code for conduit coil lengths			
	Metric (mm)	US (Trade size)	Outside Dia. (A)	Inside Dia. (B)	Bend Radi (C)	10m	25m	50m	- -
SAMHL16	16	3/8”	17.8mm	12.5mm	50mm	7TCA296030R0436	7TCA296030R0437	7TCA296030R0438	- -
SAMHL20	20	1/2”	21.1mm	15.9mm	80mm	7TCA296030R0439	7TCA296030R0440	7TCA296030R0441	- -
SAMHL25	25	3/4”	26.4mm	21.0mm	110mm	7TCA296030R0442	7TCA296030R0443	7TCA296030R0444	- -
SAMHL32	32	1”	33.1mm	26.7mm	144mm	7TCA296030R0445	7TCA296030R0446	7TCA296030R0447	- -
SAMHL40	40	1 1/4”	41.8mm	35.4mm	180mm	7TCA296030R0448	7TCA296030R0449	- -	- -
SAMHL50	50	1 1/2”	47.5mm	40.4mm	240mm	7TCA296030R0450	7TCA296030R0451	- -	- -
SAMHL63	63	2”	59.7mm	51.6mm	345mm	7TCA296030R0452	7TCA296030R0453	- -	- -

Part number example: SAMHL20/50M, blue version SAMHL20/BU/50M. For conduit support use part number example SSPC20
Note[1]: Conduit is fully cleanable and will maintain full ingress protection under normal wet cleaning condtions with associated fittings
Note[2]: The anti-microbial additive containing inert ionic silver provides protection to the conduit against bacteria and other microbes

Part Numbers and Dimensions

Part no:	Conduit Size		Dimensions			GID Code for conduit coil lengths			
	Metric (mm)	US (Trade size)	Outside Dia. (A)	Inside Dia. (B)	Bend Radi (C)	10m	25m	50ft	100ft
SSAMHL16	16	3/8”	17.8mm	12.5mm	50mm	7TCA296030R0509	7TCA296030R0510	- -	7TCA296030R0521
SSAMHL20	20	1/2”	21.1mm	15.9mm	80mm	7TCA296030R0511	7TCA296030R0512	- -	7TCA296030R0522
SSAMHL25	25	3/4”	26.4mm	21.0mm	110mm	7TCA296030R0513	7TCA296030R0514	- -	7TCA296030R0523
SSAMHL32	32	1”	33.1mm	26.7mm	144mm	7TCA296030R0515	7TCA296030R0516	- -	7TCA296030R0524
SSAMHL40	40	1 1/4”	41.8mm	35.4mm	180mm	7TCA296030R0517	- -	7TCA296030R0525	- -
SSAMHL50	50	1 1/2”	47.5mm	40.4mm	240mm	7TCA296030R0518	- -	7TCA296030R0526	- -
SSAMHL63	63	2”	59.7mm	51.6mm	345mm	7TCA296030R0519	- -	7TCA296030R0527	- -

Part number example: SSAMHL20/25M or SSAMHL20/100ft, blue version SSAMHL20/BU/50M. For conduit support use part number example SSPC20
Note[1]: Conduit is fully cleanable and will maintain full ingress protection under normal wet cleaning condtions with associated fittings
Note[2]: The anti-microbial additive containing inert ionic silver provides protection to the conduit against bacteria and other microbes

Part Numbers and Dimensions

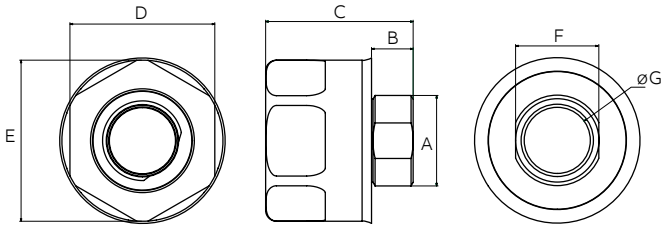
Part no:	Conduit Size		Dimensions			GID Code for conduit coil lengths			
	Metric (mm)	US (Trade size)	Outside Dia. (A)	Inside Dia. (B)	Bend Radi (C)	50ft	100ft	- -	- -
SAMHURL16	16	3/8”	17.8mm	12.5mm	50mm	7TCA296030R0540	7TCA296030R0541	- -	- -
SAMHURL20	20	1/2”	21.1mm	15.9mm	80mm	7TCA296030R0542	7TCA296030R0543	- -	- -
SAMHURL25	25	3/4”	26.4mm	21.0mm	110mm	7TCA296030R0544	7TCA296030R0545	- -	- -
SAMHURL32	32	1”	33.1mm	26.7mm	144mm	7TCA296030R0546	7TCA296030R0547	- -	- -
SAMHURL40	40	1 1/4”	41.8mm	35.4mm	180mm	7TCA296030R0548	- -	- -	- -
SAMHURL50	50	1 1/2”	47.5mm	40.4mm	240mm	7TCA296030R0549	- -	- -	- -
SAMHURL63	63	2”	59.7mm	51.6mm	345mm	7TCA296030R0550	- -	- -	- -

Part number example: SAMHURL20/50FT, blue version SAMHURL20/BU/50FT. For conduit support use part number example SSPC20
Note[1]: Conduit is fully cleanable and will maintain full ingress protection under normal wet cleaning condtions with associated fittings
Note[2]: The anti-microbial additive containing inert ionic silver provides protection to the conduit against bacteria and other microbes

Type SAM - Single piece, stainless steel liquid tight fitting

Single piece, liquid tight, high temperature stainless steel fitting suitable for food zone non-contact areas

Features
- Single piece design
- 316 Stainless Steel
- IP65 - IP69 protection
- Approvals: CE, BS EN 61386-1,-23, NSF14159-1-2014, NSF169-2009, UL514b
- Multiple thread type Metric/NPT



Approvals

KM35161

Part Numbers and Dimensions

METRIC Part no:	Conduit Size (A)		Nominal Dimensions (mm)						GID code
	Metric (mm)	US (Trade size)	B	C	D	E	F	G	
SPL16/M16/SAM	16	3/8”	12.0	32.8	30.0	31.9	14.0	10.5	7TCA296120R0043
SPL20/M20/SAM	20	1/2”	12.0	35.6	32.0	35.0	18.0	14.5	7TCA296120R0044
SPL25/M25/SAM	25	3/4”	12.0	43.0	38.0	41.0	23.0	18.3	7TCA296120R0045
SPL32/M32/SAM	32	1”	12.0	51.5	45.0	49.0	30.0	24.1	7TCA296120R0046
SPL40/M40/SAM	40	1 1/4”	12.0	53.3	57.0	61.5	38.0	32.7	7TCA296120R0047
SPL50/M50/SAM	50	1 1/2”	12.0	60.2	64.0	69.0	48.0	37.7	7TCA296120R0048
SPL63/M63/SAM*	63	2”	12.0	71.4	80.0	87.0	61.0	49.0	7TCA296120R0049

Part Numbers and Dimensions

NPT Part no:	Conduit Size (A)		Nominal Dimensions (mm)						GID code
	US (Trade size)	Metric (mm)	B	C	D	E	F	G	
SPL16/038/SAM	3/8”	16	15.2	43.0	30.0	31.9	14.0	10.5	7TCA296120R0053
SPL20/050/SAM	1/2”	20	19.8	43.2	32.0	35.0	18.0	14.5	7TCA296120R0054
SPL25/075/SAM	3/4”	25	20.1	46.3	38.0	41.0	23.0	18.3	7TCA296120R0055
SPL32/100/SAM	1”	32	25.0	57.9	45.0	49.0	30.0	24.1	7TCA296120R0056
SPL40/125/SAM	1 1/4”	40	25.6	60.4	57.0	61.5	38.0	32.7	7TCA296120R0057
SPL50/150/SAM	1 1/2”	50	26.0	64.7	64.0	69.0	48.0	37.7	7TCA296120R0058
SPL63/200/SAM*	2”	63	26.9	74.1	80.0	87.0	61.0	49.0	7TCA296120R0059

IP Rating	Appropriate Fitting
For use with: Type SAMHL, SSAMHL & SAMHURL conduit	
IP65	Yes
IP68	Yes (10 bar 30mins)
IP69	Yes

Degree of Mechanical Protection
Very high corrosion resistance
Very high chemical resistance
Very high fatigue life

Material
Stainless steel

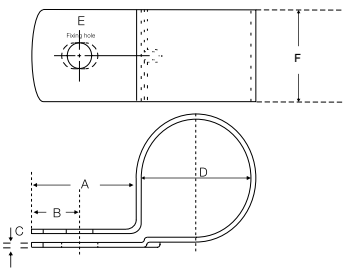
Conformity
CE marked to Low Voltage Directive 2014/35/EU
BSI Kitemark KM35161 to BS EN 61386
UL514b file number E60625
NSF 14159-1-2014
NSF 169-2009

Temperature Range
Static Applications: -50ºC to +130ºC
Moving Applications: -5ºC to +150ºC

* : Currently does not conform to UL514b
Note[1]: A flat surface greater than diameter “E” is required around the knockout on the box or enclosure for the face seal of the NPT fitting to create a liquid tight seal. (The NPT threads alone will not provide a liquid tight seal when installed in a female NPT hub)
Note[2]: Parts are maintanence free, face seal can be replaced if damaged.
Note[3]: Parts are fully cleanable and will maintain full ingress protection under normal wet cleaning condtions

P-Clip & Locknut stainless steel conduit

316 Stainless steel clip and female threaded locknut, for use with SAMHL/ SSAMHL/SAMHURL conduit. Suitable for food zone non-contact areas

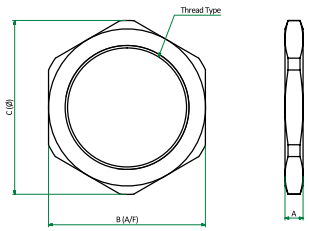


Part Numbers and Dimensions

Part no:	Conduit Size		Nominal Dimensions (mm)						GID code
	Metric (mm)	US (Trade size)	A	B	C	D	E	F	
SSPC16	16	3/8”	19.0	9.0	0.7	16	6.0	12.7	7TCA296120R0065
SSPC20	20	1/2”	19.0	9.0	0.7	20	6.0	12.7	7TCA296120R0066
SSPC25	25	3/4”	19.0	9.0	0.7	25	6.0	12.7	7TCA296120R0067
SSPC32	32	1”	19.0	9.0	0.7	32	6.0	12.7	7TCA296120R0068
SSPC40	40	1 1/4”	19.0	9.0	0.9	40	6.0	12.7	7TCA296120R0069
SSPC50	50	1 1/2”	19.0	9.0	0.9	50	6.0	12.7	7TCA296120R0070
SSPC63	63	2”	19.0	9.0	0.9	63	6.0	12.7	7TCA296120R0071

Temperature Range
Static Applications: -50ºC to +130ºC
Moving Applications: -5ºC to +150ºC

Degree of Mechanical Protection
Very high corrosion resistance
Very high chemical resistance
Very high fatigue life



Part Numbers and Dimensions

METRIC Part no:	Thread Size	Nominal Dimensions			GID code
		A	B	C	
LNSS/M16	M16 x 1.5	3.0	20.0	21.1	7TCA296120R0061
LNSS/M20	M20 x 1.5	3.5	24.0	26.6	7TCA296120R0062
LNSS/M25	M25 x 1.5	4.0	30.0	33.2	7TCA296120R0063
LNSS/M32	M32 x 1.5	5.0	36.0	39.9	7TCA296120R0064
LNSS/M40	M40 x 1.5	5.0	47.2	52.3	7TCA296120R0072
LNSS/M50	M50 x 1.5	5.0	60.3	66.5	7TCA296120R0073
LNSS/M63	M63 x 1.5	6.0	69.8	77.6	7TCA296120R0074

Part Numbers and Dimensions

NPSL Part no:	Thread Size	Nominal Dimensions			GID code
		A	B	C	
LNSS/038	3/8“	3.0	20.0	21.1	7TCA296120R0075
LNSS/050	1/2“	3.0	27.0	30.0	7TCA296120R0076
LNSS/075	3/4“	3.5	30.0	33.2	7TCA296120R0077
LNSS/100	1“	5.0	38.0	42.0	7TCA296120R0078
LNSS/125	1 1/4“	5.5	52.0	57.5	7TCA296120R0079
LNSS/150	1 1/2“	6.0	60.0	66.5	7TCA296120R0080
LNSS/200	2“	7.0	69.8	77.0	7TCA296120R0081

Food & beverage conduit systems

Non-metallic cable protection solutions

Our non-metallic food and beverage conduit system, has the flexibility to withstand rapid and continued movement, even in tight bending radii, maintaining its integrity and performance over extended periods.

Incorporating for the first time an overextruded FDA-compliant material on top of the conduit, means there are no exposed crevices for food residues to collect in, enabling the conduit system to meet stringent demands for rapid and effective washdown, while delivering enhanced cleanability alongside resistance to aggressive chemicals to ECOLAB standards.

With its strength, durability and flexibility, the systen can be used in various dynamic and static applications, including conveyor systems, production and packing equipment, and pick and place systems

The ultimate in cleanability - Cable protection in the food & beverage industry

Key to any cable protection system – especially in the food and beverage sector – is its ability to safeguard the cables against the ingress of liquids and small solid particles.

In the food and beverage sector, the paramount importance of hygiene and cleanliness means equipment is regularly subjected to highly rigorous cleaning procedures.

The methods of achieving the necessary level of hygiene varies widely some with high pressure water jets some with lower pressure wash down.

International Ingress Protection (IP) standards provide a globally accredited method to qualify a range of components for their performance in preventing the ingress of dust and water.

Ingress protection (IP) up to IP69 with PMA cable protection solution.

The PMA F&B conduit systems fulfil all the applicable IP ratings, IP65 and IP66 (high volume lower pressure) and IP69 (high pressure/ high temperature) for the various cleaning methods applied.

Products classified to either IP65 or IP66 are able to protect against low-power and high-power jet water. However, these IP ratings focus primarily on water volume rather than pressure, bringing the importance of the IP69 rating to the fore. Products accredited to the IP69 standard, such as the PMA food and beverage cable protection portfolio from ABB, will maintain their integrity and performance against hot water applied at pressures of up to 80 bar – in line with all processes commonly used for wash-down in the food and beverage sector. It doesn't matter if high pressure or low pressure methods.

The combination of IP69 rated and ECOLAB certified products – such as the PMA food and beverage solution – is the perfect choice for any systems subjected to regular cleaning and sanitisation. Ultimately, at times of increased focus on cleaning practice and effectiveness, the PMA food and beverage cable protection portfolio from ABB can offer peace of mind to

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01 PMA cable protection provides outstanding flexibility combined with easy push-in assembly.
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02 The PMA F&B conduit systems fulfil IP69 for the various cleaning methods applied.

01

specifiers and system designers that it will deliver in the vital areas of cleanability and ingress protection – irrespective of the cleaning and wash-down methods employed.

Transferring the benefits of nylon conduit to the food and beverage sector

Delivering effective cable protection in the food and beverage sector means overcoming a series of challenging operating conditions, including mechanical properties and mitigating the effects of sustained high-pressure wash-downs and chemical disinfection.

Corrugated nylon conduit has long been a go-to cable protection solution for industrial manufacturers, given its flexibility, inherent strength, ability to cope with frequent and fast movement, and effective performance in both static and dynamic operation. To help ensure food and beverage manufacturers can benefit from these, PMA has developed an innovative cable protection system, combining all the proven performance attributes of corrugated conduit with the additional benefit of a smooth, easy-to-clean outer layer made from FDA-compliant material. This comprises of JFBD nylon conduit, complete with either a stainless steel (JENQ) or nylon (JKNH) fitting depending on the specific application use.

02

Starting with the highly successful PMA corrugated nylon conduit system, the product undergoes a further innovative production stage which involves over-extruding a completely smooth, and therefore easy-to-clean, coating onto the outer layer of the conduit. The result is a conduit that has outstanding mechanical properties coupled with industry-leading cleanability and resistance to chemical agents.

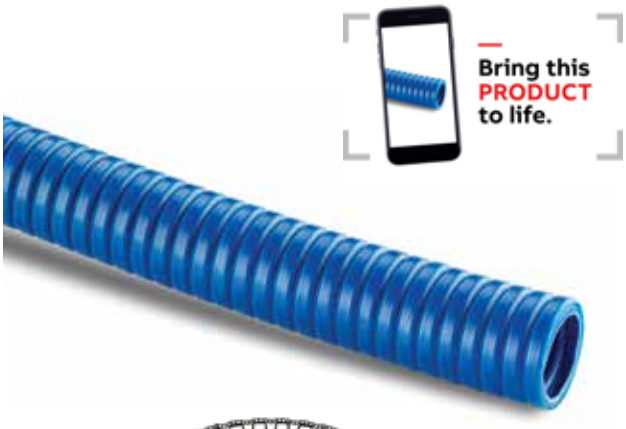
However, in order to give food and beverage manufacturers ultimate confidence in the efficacy of the system, the PMA JFBD conduit has been subjected to the Riboflavin test.

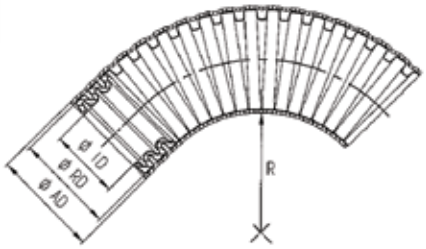
The system's outstanding performance in the Riboflavin test underlines its status as the go-to solution for food and beverage manufacturers looking for the ultimate in cleanability. Given its inherent strength and durability, it can be used in various dynamic and static applications, including conveyor systems, production and packing equipment, and pick and place systems.

Now, food and beverage manufacturers can specify the use of nylon conduit systems throughout their facility, safe in the knowledge that they will not only benefit from the flexibility and durability of a nylon conduit, but from a system that it is easy to clean and hygienic.

Type JFBD - Over-extruded, flexible nylon conduit

Easy to clean over-extruded conduit, suitable for a clean and hygienic environment





Features

- Smooth easy to clean out layer
- High reversed bending stresses
- Excellent flexibility in combination with high strength
- High resistance to chemicals and cleaning agents
- For indoor food zone - non contact
- Outer layer made from FDA compliant material

Approvals

METRIC Part no:	Conduit Size		Dimensions				
	Metric (mm)	NW	øAD	øRD	øID	Stat. R	Dyn. R
JFBDT-12C01	16	12	16.0mm	15.8mm	11.8mm	70.0mm	100mm
JFBDG-17C01	20	17	21.6mm	21.2mm	15.6mm	85.0mm	125mm
JFBDG-23C01	25	23	28.8mm	28.5mm	21.7mm	110mm	160mm
JFBDG-29C01	32	29	34.7mm	34.3mm	27.4mm	140mm	200mm
JFBDG-36C01	40	32	42.7mm	42.3mm	35.8mm	200mm	260mm
JFBDG-48C01	50	48	54.6mm	54.2mm	46.7mm	230mm	300mm

Part number JFBDG-17C01.50

IP Rating	Appropriate Fitting
For use with: Type JENQ and JKNH fitting	
IP65	Yes
IP68	Yes (10 bar 30mins)
IP69	Yes

Material
Conduit: High-grade, specially formulated Polyamide 12
Overextrusion: FDA 21 CFR / EU 10/2011 compliant polyamide elastomer

Degree of Mechanical Protection
Corrosion free
High fatigue life
Very good chemical resistance
High flexibility

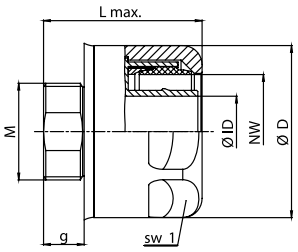
Conformity
Low voltage directive
NSF 14159-1-2014
NSF 169-2009
UR file number .....
BSI Kitemark KM35161

Temperature Range
Continuous application temperature: -20ºC to 95ºC
Short-term: up to +120ºC

Type JENQ - Single piece, stainless steel liquid tight fitting

Single piece, liquid tight high temperature stainless steel fitting suitable for clean and hygienic environment.

Features
- Single piece design
- Stainless Steel 316L material
- Seals made from FDA compliant material
- IP69 system protection
- For indoor food zone - non contact



Approvals

Part Numbers and Dimensions

METRIC Part no:	Thread size		Dimensions (mm)					Weight kg
	Metric (mm)	nW	g	øid	ød	l max.	sW	100 pcs
JENQ-M162-10	M16 x 1.5	12	10.0	9.2	31.9	35.9	30.0	11.6
JENQ-M207-10	M20 x 1.5	17	10.0	13.0	35.0	36.9	32.0	13.0
JENQ-M253-11	M25 x 1.5	23	11.0	18.3	44.5	41.6	40.0	23.6
JENQ-M329-13	M32 x 1.5	29	13.0	24.0	55.5	48.7	50.0	41.8
JENQ-M406-13	M40 x 1.5	36	13.0	32.4	61.5	51.2	57.0	49.8
JENQ-M506-14	M50 x 1.5	48	14.0	42.3	78.0	57.4	74.0	88.1

IP Rating	Appropriate Fitting
For use with: Type JFBD conduit	
IP68	Yes (10 bar 30mins)
IP69	Yes

Material
Stainless steel
FDA 21 CFR / EU 10/2011 compliant high-performance polyester elastomer

Degree of Mechanical Protection
Very high corrosion resistance
Very high chemical resistance
Very high fatigue life

Conformity
CE marked to Low Voltage Directive 2014/35/EU
NSF 14159-1-2014
NSF 169-2009

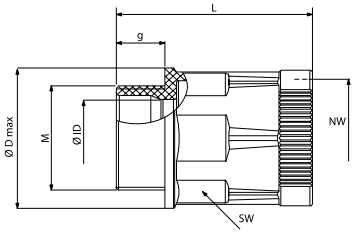
Temperature Range
Static Applications: -50ºC to +130ºC
Moving Applications: -5ºC to +150ºC

Type JKNH - two-piece, straight nylon fitting

Metric thread IP69 connector made of FDA compliant material

Features

- Very high impact resistance - easy push-in assembly
- Corrosion-free
- Excellent conduit pull-out strength
- IP69 system protection for indoor splash zone areas



Approvals

Part Numbers and Dimensions

METRIC Part no:	Thread size					Dimensions (mm)		Weight kg
	Metric (mm)	NW	G	ØID	ØD	L max.	SW	100 pcs
JKNH-M162	M16 x 1.5	12	11.0	11.0	28.5	47.5	25.0	0.8
JKNH-M202	M20 x 1.5	12	12.5	11.0	28.5	47.5	25.0	0.9
JKNH-M207	M20 x 1.5	17	14.5	11.0	35.0	53.5	32.0	1.4
JKNH-M257	M25 x 1.5	17	16.5	12.0	35.0	54.5	32.0	1.5
JKNH-M253	M25 x 1.5	23	19.0	12.0	42.0	57.0	38.0	1.7
JKNH-M323	M32 x 1.5	23	23.0	15.0	43.0	60.5	38.0	2.0
JKNH-M329	M32 x 1.5	29	26.0	15.0	51.5	65.5	46.0	3.2
JKNH-M409	M40 x 1.5	29	29.0	19.0	51.5	69.5	46.0	3.7
JKNH-M506	M50 x 1.5	36	37.5	19.0	65.0	75.0	60.0	6.2
JKNH-M508	M50 x 1.5	48	42.0	19.0	75.0	81.0	70.0	7.5
JKNH-M638	M63 x 1.5	48	48.5	19.0	75.0	81.0	70.0	7.8

IP Rating	Appropriate Fitting
For use with: Type JFBD conduit	
IP66	Yes
IP68	Yes (10 bar 30mins)
IP69	Yes

Material

Stainless steel

FDA 21 CFR / EU 10/2011 compliant high-performance polyester elastomer

Degree of Mechanical Protection

Corrosion-free

Very high impact resistance

Conformity

CE marked to Low Voltage Directive 2014/35/EU

NSF 14159-1-2014

NSF 169-2009

Temperature Range

Static Applications:
-50ºC to +130ºC

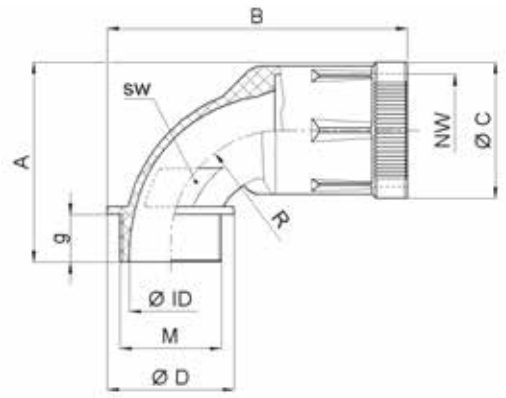
Moving Applications:
-5ºC to +150ºC

Type JKBH Connector, 90° curved elbow

Made of FDA compliant material

Features

- Easy push-in assembly for maximum installation reliability
- Corrosion-free
- Excellent conduit pull-out strength
- IP69, IP68, IP66 even when the conduit connection is continually in motion



Approvals
CE NSF cULus

IP Rating	Appropriate Fitting
For use with: Type JFBD conduit	
IP66	Yes
IP68	Yes
IP69	Yes

Temperature Range
Static Applications: -50ºC to +105ºC
Moving Applications: -5ºC to +120ºC

Material
Specially formulated, halogenfree polyamide 6
Locking and sealing element made from specially formulated, halogen free polyamide 6 and cross-linked polyester elastomer

Part Numbers and Dimensions

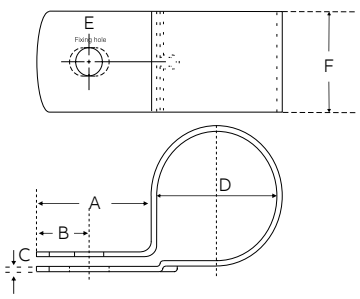
METRIC Part no:	Thread size			Dimensions (mm)							Weight kg
	Metric (mm)	NW	ØID	g	A	B	ØC	ØD	R	SW	100 pcs
JKBH-M162	M16 x 1.5	12	8.0	11.0	44.5	72.0	28.5	24.0	28.0	15	1.5
JKBH-M202	M20 x 1.5	12	11.8	11.0	44.5	74.0	28.5	28.0	28.0	15	1.3
JKBH-M207	M20 x 1.5	17	11.5	11.0	50.0	81.0	35.0	29.0	29.5	20	2.5
JKBH-M257	M25 x 1.5	17	16.5	12.0	51.0	84.0	35.0	35.0	29.5	20	2.2
JKBH-M253	M25 x 1.5	23	16.0	12.0	59.5	92.0	43.0	35.0	35.0	26	3.9
JKBH-M323	M32 x 1.5	23	22.5	15.0	63.0	94.5	43.0	40.0	35.0	26	3.2
JKBH-M329	M32 x 1.5	29	23.0	15.0	73.0	108.0	51.5	43.0	41.5	33	6.8
JKBH-M409	M40 x 1.5	29	28.5	19.0	77.0	112.0	51.5	51.0	41.5	33	6.0
JKBH-M406	M40 x 1.5	36	29.5	19.0	87.5	126.0	60.5	55.0	49.0	41	11.0
JKBH-M506	M50 x 1.5	36	37.0	19.0	87.5	128.0	60.5	59.0	49.0	41	9.0
JKBH-M508	M50 x 1.5	48	38.5	19.0	100.5	145.5	73.0	69.0	55.5	46	18.0
JKBH-M638	M63 x 1.5	48	48.0	19.0	100.5	148.5	73.0	75.0	55.5	55	14.0

Degree of Mechanical Protection
Corrosion-free
Very high impact resistance
Easy push-in assembly for maximum installation reliability
Screwdriver required for dismantling, impeding unauthorised or accidental opening
Space-saving dismantling
Excellent conduit pull-out strength
Fits both conduit profiles - fine (t) and coarse (g)

Conformity
FDA 21 CFR / EU 10/2011 compliant Polyamide 6 Ecolab - certificate

Stainless steel P-Clip & Locknut

316 stainless steel clip and female threaded locknut for use with JFBD conduit. Suitable for a clean and hygienic environment.

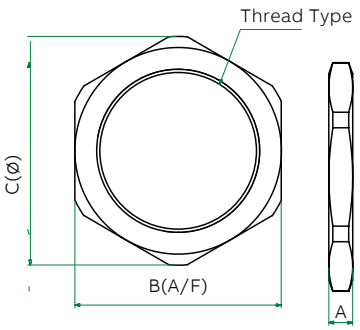


Part Numbers and Dimensions

METRIC Part no:	Thread Size	Nominal Dimensions (mm)					Weight kg
	NW	A	B	C	H	ø d1	100 pcs
JSGB-12	12	34.0	15.0	17.5	12.0	16.0	0.55
JSGB-17	17	40.0	15.0	20.5	23.0	21.6	0.67
JSGB-23	23	46.0	15.0	24.0	30.0	28.8	0.85
JSGB-29	29	50.0	15.0	27.0	31.0	34.7	0.98
JSGB-36	36	59.0	15.0	31.0	45.0	42.7	1.16
JSGB-48	48	71.0	15.0	37.0	56.0	54.6	1.44

Temperature Range
Static Applications: -50ºC to +130ºC
Moving Applications: -5ºC to +150ºC

Degree of Mechanical Protection
Very high corrosion resistance
Very high chemical resistance
Very high fatigue life



Part no:	Thread
	Metric
GME-M16	M16
GME-M20	M20
GME-M25	M25
GME-M32	M32
GME-M40	M40
GME-M50	M50

Food & beverage conduit systems

NSF approved cable glands

ABB's high quality cable glands can help extend the life of electrical systems in a food and beverage plant's challenging environments while reducing system changeover and downtimes. With high ingress protection ratings and corrosion-resistant stainless steel construction, ABB cable glands can withstand a plant's toughest challenges, even in areas that require frequent washdowns.

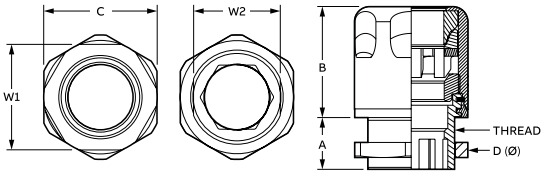
Products that are particularly attractive to food and beverage processors include the NSF approved FSCG stainless steel gland series, allowing the safe termination of cables into equipment, and the NSF approved FSEM stainless steel EMC gland series, where grounding continuity for a shielded cable is required.

FSCG Series - Stainless steel NSF approved cable glands

Suitable for use in food and beverage applications to allow the safe termination of cables into equipment

Features

- Smooth hygienic external casing
- One piece, fully enclosed
- Suitable for splash zones
- Corrosion resistant



Approvals

IP Rating

Suitable for cable types:
– Non-armoured
– Portable
– Tray

IP66	Yes
IP68	Yes (5 bar 30mins)
IP69	Yes (Steam cleaning)

To ensure ingress protection, use suitable gasket and lock nut when required.

Part Numbers and Dimensions

METRIC Part no:	Thread Metric	Cable Range		Nominal Dimensions (mm)					
		Min	Max	A	B	C	D	W1	W2
FSCG-M121	M12x1.5	3.0	6.5	6.0	21.3	15.6	16.5	14.0	10.0
		(0.118)	(0.256)	(0.236)	(0.839)	(0.614)	(0.650)	(0.551)	(0.394)
FSCG-M161	M16x1.5	5.0	10.0	7.0	23.1	20.2	21.0	18.0	14.0
		(0.197)	(0.394)	(0.276)	(0.909)	(0.795)	(0.827)	(0.709)	(0.551)
FSCG-M201	M20x1.5	6.0	12.0	10.0	26.7	24.1	26.4	22.0	18.0
		(0.236)	(0.472)	(0.394)	(1.051)	(0.949)	(1.039)	(0.866)	(0.709)
FSCG-M251	M25x1.5	12.0	17.0	14.0	29.1	30.1	33.0	28.0	23.0
		(0.472)	(0.669)	(0.551)	(1.146)	(1.185)	(1.299)	(1.102)	(0.906)

Part Numbers and Dimensions

NPT Part no:	Thread NPT	Cable Range		Nominal Dimensions (mm)					
		Min	Max	A	B	C	D	W1	W2
FSCG-0381	3/8"	3.0	6.5	15.26	21.2	20.2	26.5	18.0	14.0
		(0.118)	(0.256)	(0.601)	(0.835)	(0.795)	(1.043)	(0.709)	(0.551)
FSCG-0382	3/8"	5.0	10.0	15.26	23.7	24.1	26.5	22.0	14.0
		(0.197)	(0.394)	(0.601)	(0.933)	(0.949)	(1.043)	(0.866)	(0.551)
FSCG-0501	1/2"	6.0	12.0	19.85	28.0	30.1	26.5	28.0	18.0
		(0.236)	(0.472)	(0.781)	(1.102)	(1.185)	(1.043)	(1.102)	(0.709)
FSCG-0751	3/4"	12.0	17.0	20.15	31.6	38.0	39.0	35.0	23.0
		(0.472)	(0.669)	(0.793)	(1.244)	(1.496)	(1.535)	(1.378)	(0.906)

Bold numbers are metric, parenthesis numbers are inches.
No lock nut provided with the NPT products.
Note: Product must be installed in accordance with applicable national and local electrical codes.

Degree of Mechanical Protection

- Very high corrosion resistance
- Very high chemical resistance
- Very high fatigue life

Material

- Stainless steel construction
- FDA compliant EPDM seals

Conformity

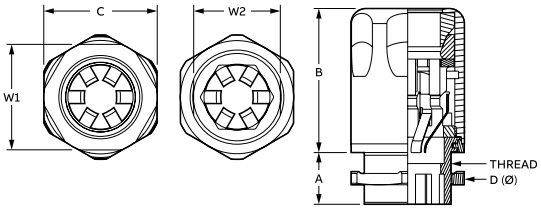
- NSF - 169-2012
- UL514B / CSA C22.2 No 18.3

Temperature Range

- Normal use: –20°C to +100°C (–40°F to +212°F)
- Short term: –20°C to +150°C (–40°F to +302°F)

FSEM Series - EMC NSF approved cable glands

Stainless steel EMC cable glands, specifically designed for food and beverage applications, with internal grounding mechanism to provide earth continuity for shielded and screened cables, where required



Features

- Smooth hygienic external casing
- One piece, fully enclosed
- Internal continuity contacts
- Corrosion resistant
- Extended radial contact with the shielding for improved EMI protection

Approvals

IP Rating

Suitable for cable types:
- Non-armoured
- Portable
- Tray
- Tape or foil shielded cables
- Braid screened cables
- Coaxial cable types

IP66	Yes
IP67	Yes
IP68	Yes (5 bar 30mins)
IP69	Yes (Steam cleaning)

To ensure ingress protection, use suitable gasket and lock nut when required.

Part Numbers and Dimensions

METRIC Part no:	Thread Metric	Cable Range		Nominal Dimensions (mm)					
		Min	Max	A	B	C	D	W1	W2
FSEM-M161	M16x1.5	5.0	10.0	7.0	28.1	20.2	21.0	18.0	14.0
		(0.197)	(0.394)	(0.276)	(1.106)	(0.795)	(0.827)	(0.709)	(0.551)
FSEM-M201	M20x1.5	6.0	12.0	10.0	32.7	24.1	26.5	22.0	18.0
		(0.236)	(0.472)	(0.394)	(1.287)	(0.949)	(1.043)	(0.866)	(0.709)
FSEM-M251	M25x1.5	12.0	17.0	14.0	37.9	30.1	33.0	28.0	23.0
		(0.472)	(0.669)	(0.551)	(1.492)	(1.185)	(1.299)	(1.102)	(0.906)

Part Numbers and Dimensions

NPT Part no:	Thread NPT	Cable Range		Nominal Dimensions (mm)					
		Min	Max	A	B	C	D	W1	W2
FSEM-0381	3/8"	5.0	10.0	15.26	28.6	24.1	26.5	22.0	14.0
		(0.197)	(0.394)	(0.601)	(1.126)	(0.949)	(1.043)	(0.866)	(0.551)
FSEM-0501	1/2"	6.0	12.0	19.85	33.2	30.1	26.5	28.0	18.0
		(0.236)	(0.472)	(0.781)	(1.307)	(1.185)	(1.043)	(1.102)	(0.709)
FSEM-0751	3/4"	12.0	17.0	20.15	39.1	38.0	39.0	35.0	23.0
		(0.472)	(0.669)	(0.793)	(1.539)	(1.496)	(1.535)	(1.378)	(0.906)

Bold numbers are metric, parenthesis numbers are inches.
No lock nut provided with the NPT products.
Note: Product must be installed in accordance with applicable national and local electrical codes.

Degree of Mechanical Protection

- Very high corrosion resistance
- Very high chemical resistance
- Very high fatigue life

Material

- Stainless steel construction
- FDA compliant EPDM seals

Conformity

- NSF - 169-2012
- UL514B / CSA C22.2 No 18.3

Temperature Range

- Normal use: –20°C to +100°C (–40°F to +212°F)
- Short term: –20°C to +150°C (–40°F to +302°F)

Food & beverage conduit systems

T&B Liquidtight Systems™

Where hygiene is paramount, electrical connections must stand up to the pressure of harsh cleaning. T&B Liquidtight conduit and fittings are designed to deliver reliable, long-lasting service, whatever the pressure. Available with high quality galvanized or stainless steel 316L cores and jacket extrusions with trade sizes ranging from, 3/8-inch to 6-inch (12 mm to 155 mm), meeting world standards including UL, CSA, IEC/EN or CE. Some options available in NSF-certified, FDA-approved compounds.

The range covers a full range of ingress protection ratings and temperature ratings.

Type LTFU - UL listed, NSF certified liquidtight flexible metallic conduit

Suitable for food and beverage equipment for grinding, mixing, processing packaging, canning, and bottling machinery

Features

- FDA approved PVC jacket material with galvanized steel core
- Meets UL 360 ID/OD dimension requirements
- Full compliance to IEC 61386-1, -23 requirements, CE Certified
- Trade sizes from 3/8" to 4" (12mm to 103mm)
- Co-ordinated performance with Series 5300SST6 Stainless Steel 316 Fittings
- Smooth extruded jacket formulated for "splash zone" food and beverage contact per FDA CFR21 and NSF 51/61 requirements
- For use in electrical circuits up to 1,000 V

Approvals

Conformity
Low voltage directive
UL360 File No. E125517
CSA C22.2, No. 56 File No. 72635
NSF .....
IEC EN 61386-1, -23 DoC: EC-012-16-104

Temperature Range	
UL	Dry: -30 to +80°C (-22 to +176°F)
	Oil: -30 to +70°C (-22 to +158°F)
	Wet: -30 to +60°C (-22 to +140°F)
CSA	Dry: -30 to +75°C (-22 to +167°F)
	Oil: -30 to +70°C (-22 to +158°F)
	Wet: -30 to +60°C (-22 to +140°F)
IEC/CE	Gen: -25 to +90°C (-13 to +194°F)

IP Rating	
UL 50E "Listed"	
Indoor	Type 4, 12, 13
Outdoor	Type 3, 3R, 4
CSA C22.2, No. 94	Type 3, 3R, 4, 12, 13
NEMA 250	Type 3, 3R, 4, 12, 14
IEC 60529	IP66, IP67

Material
Galvanised steel construction
Smooth PVC jacket
FDA approved compound with copper bonding wire from 3/8 to 1-1/4"

Degree of Mechanical Protection
High corrosion resistance
High fatigue life
High chemical resistance
High flexibility

Part Numbers and Dimensions

Trade size			UL bond wire	Dimensions				Standard carton			Small reel			Coil lengths		
UL	CSA	ISO/ BS EN		ID range (nominal)		Min. inside bend radius								Bulk reel		
in	mm	mm		In	mm	In	mm	Part no.	Ft	M	Part no.	Ft	M	Part no.	Ft	M
3/8	12	16	Yes	0.484 to 0.505 (0.493)	12.3 to 12.8 (12.5)	2.0	51	LTFUS01W-C	100	30	LTFUS01W-K	500	150	LTFUS01W-L	1,000	300
1/2	16	20	Yes	0.622 to 0.642 (0.632)	15.8 to 16.3 (16.0)	3.0	76	LTFUS02W-C	100	30	LTFUS02W-K	500	150	LTFUS02W-L	1,000	300
3/4	21	25	Yes	0.820 to 0.840 (0.830)	20.8 to 21.3 (21.1)	4.2	107	LTFUS03W-C	100	30	LTFUS03W-K	500	150	LTFUS03W-L	1,000	300
1	27	32	Yes	1.041 to 1.066 (1.053)	25.4 to 27.1 (26.8)	5.5	140	LTFUS04W-C	100	30	LTFUS04W-J	400	120	---	---	---
1¼	35	40	Yes	1.380 to 1.410 (1.395)	35.1 to 35.8 (35.5)	7.0	178	LTFUS05W-B	50	15	LTFUS05W-E	200	60	---	---	---
1½	41	50	No	1.575 to 1.600 (1.587)	40.0 to 40.6 (40.3)	4.5	114	LTFUS06W-B	50	15	LTFUS06W-D	150	45	---	---	---
2	53	63	No	2.020 to 2.045 (2.032)	51.3 to 51.9 (51.6)	6.0	152	LTFUS07W-B	50	15	LTFUS07W-C	100	30	---	---	---
2½	63	70	No	2.480 to 2.505 (2.492)	63.0 to 63.6 (63.3)	8.0	203	LTFUS08W-A	25	8	LTFUS08W-G	275	80	---	---	---
3	78	80	No	3.070 to 3.100 (3.085)	78.0 to 78.7 (78.4)	10.0	254	LTFUS09W-A	25	8	LTFUS09W-P	175	50	---	---	---
4	103	100	No	4.000 to 4.040 (4.020)	101.6 to 102.6 (102.1)	12.0	305	LTFUS11W-A	25	8	LTFUS11W-C	100	30	---	---	---

Type LTFE and Type LT6FE - NSF certified general purpose, liquidtight conduit

Suitable for food and beverage equipment for grinding, mixing, processing packaging, canning, and bottling machinery

Features

- FDA approved PVC jacket material
- Full compliance to IEC 61386-1, -23 requirements, CE Certified
- Trade sizes from 3/8" to 4" (12mm to 103mm)
- Co-ordinated performance with Series 5300SST6 Stainless Steel 316 Fittings
- Smooth extruded jacket formulated for
- For use in electrical circuits up to 1,000 V

Approvals

Type LTFE Conformity
Low voltage directive
NSF .....
IEC EN 61386-1, -23 DoC: EC-012-16-104

Type LT6FE Conformity
Low voltage directive
NSF 51/61
IEC EN 61386-1, -23 DoC: EC-012-16-104

Degree of Mechanical Protection
High corrosion resistance
High fatigue life
High chemical resistance
High flexibility

Type LT6FE Material
Stainless Steel 316L core
PVC FDA CFR21 and NSF 51/61 approved compound

Type LT6FE Temperature Range	
Gen	Dry: -55 to +105°C (-67 to +221°F)
	Oil: -30 to +70°C (-22 to +158°F)
	Wet: -30 to +60°C (-22 to +140°F)
IEC/CE:	Gen: -45 to +105°C (+49 to +221°F)

Type LT6FE IP Rating	
UL 50E "Tested"	
Indoor	Type 4, 12, 13
Outdoor	Type 3, 3R, 4
CSA C22.2, No. 94	Type 3, 3R, 4, 12, 13
NEMA 250	Type 3, 3R, 4, 12, 14
IEC 60529	IP66, IP67

Type LTFE Material
Galvanised steel core
PVC FDA CFR21 approved compound

Type LTFE Temperature Range	
Gen	Dry: -20 to +60°C (-4 to +140°F)
IEC/CE:	Gen: -25 to +90°C (+13 to +194°F)

Type LTFE IP Rating	
UL 50E "Tested"	
Indoor	Type 4, 12, 13
Outdoor	Type 3, 3R, 4
CSA C22.2, No. 94	Type 3, 3R, 4, 12, 13
NEMA 250	Type 3, 3R, 4, 12, 14
IEC 60529	IP66, IP67

Part Numbers and Dimensions

Trade size					Dimensions										Coil lengths
UL	CSA	ISO/ BS EN	ID range (nominal)		Min. inside bend radius		Standard carton			Small reel			Bulk reel		
in	mm	mm	In	mm	In	mm	Part no.	Ft	M	Part no.	Ft	M	Part no.	Ft	M
3/8	12	16	0.484 to 0.505 (0.493)	12.3 to 12.8 (12.5)	2.0	51	LTFES01W-C	100	30	LTFES01W-K	500	150	LTFES01W-L	1,000	300
1/2	16	20	0.622 to 0.642 (0.632)	15.8 to 16.3 (16.0)	3.0	76	LTFES02W-C	100	30	LTFES02W-K	500	150	LTFES02W-L	1,000	300
3/4	21	25	0.820 to 0.840 (0.830)	20.8 to 21.3 (21.1)	4.2	107	LTFES03W-C	100	30	LTFES03W-K	500	150	LTFES03W-L	1,000	300
1	27	32	1.041 to 1.066 (1.053)	25.4 to 27.1 (26.8)	5.5	140	LTFES04W-C	100	30	LTFES04W-J	400	120	---	---	---
1¼	35	40	1.380 to 1.410 (1.395)	35.1 to 35.8 (35.5)	7.0	178	LTFES05W-B	50	15	LTFES05W-E	200	60	---	---	---
1½	41	50	1.575 to 1.600 (1.587)	40.0 to 40.6 (40.3)	4.5	114	LTFES06W-B	50	15	LTFES06W-D	150	45	---	---	---
2	53	63	2.020 to 2.045 (2.032)	51.3 to 51.9 (51.6)	6.0	152	LTFES07W-B	50	15	LTFES07W-C	100	30	---	---	---
2½	63	70	2.480 to 2.505 (2.492)	63.0 to 63.6 (63.3)	8.0	203	LTFES08W-A	25	8	LTFES08W-G	275	80	---	---	---
3	78	80	3.070 to 3.100 (3.085)	78.0 to 78.7 (78.4)	10.0	254	LTFES09W-A	25	8	LTFES09W-P	175	50	---	---	---
4	103	100	4.000 to 4.040 (4.020)	101.6 to 102.6 (102.1)	12.0	305	LTFES11W-A	25	8	LTFES11W-C	100	30	---	---	---

No UL bond wire present

Part Numbers and Dimensions

Trade size					Dimensions										Coil lengths
UL	CSA	ISO/ BS EN	ID range (nominal)		Min. inside bend radius		Standard carton			Small reel			Bulk reel		
in	mm	mm	In	mm	In	mm	Part no.	Ft	M	Part no.	Ft	M	Part no.	Ft	M
3/8	12	16	0.484 to 0.505 (0.493)	12.3 to 12.8 (12.5)	1.5	38	LT6FES01W-C	100	30	LT6FES01W-K	500	150	LT6FES01W-L	1,000	300
1/2	16	20	0.622 to 0.642 (0.632)	15.8 to 16.3 (16.0)	2.0	51	LT6FES02W-C	100	30	LT6FES02W-K	500	150	LT6FES02W-L	1,000	300
3/4	21	25	0.820 to 0.840 (0.830)	20.8 to 21.3 (21.1)	2.5	64	LT6FES03W-C	100	30	LT6FES03W-K	500	150	LT6FES03W-L	1,000	300
1	27	32	1.041 to 1.066 (1.053)	25.4 to 27.1 (26.8)	3.0	76	LT6FES04W-C	100	30	LT6FES04W-J	400	120	---	---	---
1¼	35	40	1.380 to 1.410 (1.395)	35.1 to 35.8 (35.5)	3.5	89	LT6FES05W-B	50	15	LT6FES05W-E	200	60	---	---	---
1½	41	50	1.575 to 1.600 (1.587)	40.0 to 40.6 (40.3)	4.5	114	LT6FES06W-B	50	15	LT6FES06W-D	150	45	---	---	---
2	53	63	2.020 to 2.045 (2.032)	51.3 to 51.9 (51.6)	5.5	140	LT6FES07W-B	50	15	LT6FES07W-C	100	30	---	---	---
2½	63	70	2.480 to 2.505 (2.492)	63.0 to 63.6 (63.3)	8.0	203	LT6FES08W-A	25	8	---	---	---	---	---	---
3	78	80	3.070 to 3.100 (3.085)	78.0 to 78.7 (78.4)	10.0	254	LT6FES09W-A	25	8	---	---	---	---	---	---

No UL bond wire present

Series 5300SST6/ Series 5300SST6HT fittings - High Temperature

Suitable for food and beverage equipment for grinding, mixing, processing packaging, canning, and bottling machinery

Series 5300SST6

Series 5300SST6HT - High Temperature

Features

- 316 Stainless Steel
- 3/8” to 2” (12mm to 63mm)
- Insulated Version

Approvals

Series 5300SST6

Series 5300SST6 Conformity
UL Listed to UL 514B
CSA Certified to CSA C22.2, No. 18.3
IEC CE Certified to IEC 61386-1, -23

Series 5300SST6 Temperature Range	
UL / CSA	-20 to +105°C
IEC/CE:	-25 to 105°C (Dynamic)

Series 5300SST6 IP Rating	
UL Listed Ingress Ratings:	
Indoor:	Type 4, 12, 13
Outdoor:	Type 3, 3R, 4
IEC Ingress Ratings:	IP66, IP67

Series 5300SST6HT - High Temperature

Series 5300SST6HT Conformity
UL Listed to UL 514B
CSA Certified to CSA C22.2, No. 18.3
CE Certified to IEC/EN 61386-1, -23

Series 5300SST6HT Temperature Range	
UL / CSA	-20 to +105°C
IEC/CE:	-25 to 105°C (Dynamic)
	-100 to +150°C (Static)

Series 5300SST6HT IP Rating	
UL Listed Ingress Ratings:	
Indoor:	Type 4, 12, 13
Outdoor:	Type 3, 3R, 4
IEC Ingress Ratings:	IP66, IP67

Fittings														Accessories	
					Series 5300SST6 SST 316			Series 5300SST6HT SST 316 High Temperature							
														
Trade Size			Type		*Insulated					Insulated	*Sealing Gasket Part No.	Wire Mesh Grips Part No.	Conduit Support Part No.	**Lock Nuts SST Part No.
UL Inch	CSA mm	ISO/ BS EN mm	Std.	Thread	Straight Part No.	45° Part No.	90° Part No.	Straight Part No.	45° Part No.	90° Part No.				
			NPT	1/2“	5331SST6	5341SST6	5351SST6	5331SST6HT	5341SST6HT	5351SST6HT			P CLIP/16	LNSS038
3/8	12	16	ISO	M16	9330SST6	9340SST6	9350SST6	9330SST6HT	9340SST6HT	9350SST6HT	5261	WMG-LT1	---	LNSSM16
			PG	13.5	---	---	---	---	---	---				---
			NPT	1/2“	5332SST6	5342SST6	5352SST6	5332SST6HT	5342SST6HT	5352SST6HT			P CLIP/20	LNSS050
1/2	16	20	ISO	M20	9332SST6	9342SST6	9352SST6	9332SST6HT	9342SST6HT	9352SST6HT	5262	WMG-LT2	HS901SS	LNSSM20
			PG	16	---	---	---	---	---	---				---
			NPT	3/4“	5333SST6	5343SST6	5353SST6	5333SST6HT	5343SST6HT	5353SST6HT			P CLIP/25	LNSS075
3/4	21	25	ISO	M25	9333SST6	9343SST6	9353SST6	9333SST6HT	9343SST6HT	9353SST6HT	5263	WMG-LT3	HS902SS	LNSSM25
			PG	21	---	---	---	---	---	---				---
			NPT	1“	5334SST6	5344SST6	5354SST6	5334SST6HT	5344SST6HT	5354SST6HT			P CLIP/32	LNSS100
1	27	32	ISO	M32	9334SST6	9344SST6	9354SST6	9334SST6HT	9344SST6HT	9354SST6HT	5264	WMG-LT4	HS903SS	LNSSM32
			PG	29	---	---	---	---	---	---				---
			NPT	1-1/4“	5335SST6	5345SST6	5355SST6	5335SST6HT	5345SST6HT	5355SST6HT			P CLIP/40	LNSS125
1-1/4	35	40	ISO	M40	9335SST6	9345SST6	9355SST6	9335SST6HT	9345SST6HT	9355SST6HT	5265	WMG-LT5	HS904SS	LNSSM40
			PG	36	---	---	---	---	---	---				---
			NPT	1-1/2“	5336SST6	5346SST6	5356SST6	5336SST6HT	5346SST6HT	5356SST6HT			P CLIP/50	LNSS150
1-1/2	41	50	ISO	M50	9336SST6	9346SST6	9356SST6	9336SST6HT	9346SST6HT	9356SST6HT	5266	WMG-LT6	HS905SS	LNSSM50
			PG	42	---	---	---	---	---	---				---
			NPT	2“	5337SST6	5347SST6	5357SST6	5337SST6HT	5347SST6HT	5357SST6HT			P CLIP/63	LNSS200
2	53	63	ISO	M63	9337SST6	9347SST6	9357SST6	9337SST6HT	9347SST6HT	9357SST6HT	5267	WMG-LT7	HS906SS	LNSSM63
			PG	48	---	---	---	---	---	---				---
			NPT	2-1/2“	5338-HT	5348-HT	5358-HT	5338-HT	5348-HT	5358-HT			P CLIP/75	---
2-1/2	63	70	ISO	---	---	---	---	---	---	---	5268	WMG-LT8	HS907SS	
			PG	---	---	---	---	---	---	---				
			NPT	3“	5339-HT	5349-HT	5359-HT	5339-HT	5349-HT	5359-HT			---	---
3	78	80	ISO	---	---	---	---	---	---	---	5269	WMG-LT9	HS908SS	
			PG	---	---	---	---	---	---	---				
			NPT	4“	5340-HT	5350-HT	5360-HT	5340-HT	5350-HT	5360-HT			---	---
4	103	100	ISO	---	---	---	---	---	---	---	5270	WMG-LT10	HS910SS	
			PG	---	---	---	---	---	---	---				

*Seal gaskets required for Liquid and dust tight installations
**Locknuts must be ordered seperatley for 5300SST6 Fittings

Additional information
We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB AG does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

ABB CABLE PROTECTION

Solutions for the food and beverage industry

ABB CABLE PROTECTION

Solutions for the food and beverage industry

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