



Process JBs

process junction boxes for fieldbus installations

- Easy to install & maintain
- Standard proven designs reduce project costs
- Superb corrosion resistance
- Wide choice of cable gland types
- All glanding holes are located in the base of the enclosure
- Generous space for cable terminations
- Strong, high impact resistance, durable



MTL Process JBs are designed for mounting Megablock fieldbus wiring components, terminators, 9320 spur connections and FP-32 surge protection devices, in order to meet the exacting requirements of process industry customers.

Relcom wiring components have been chosen to connect over 250,000 fieldbus devices on hundreds of projects. With that experience, MTL/Relcom have learned a lot about fieldbus junction box requirements for harsh environments.

Process JBs make it easy to install and maintain the fieldbus system. For example, a minimum of 75mm (3") of clearance is provided for fieldbus cable connections. This ensures that the correct bend radius is maintained when connecting to the full range of MTL/Relcom wiring components.

They are available in a choice of materials and finishes that provide strength, durability and corrosion resistance to many chemicals and their vapours. The FCS-9000 enclosures are manufactured from 316 stainless steel

to provide the highest level of corrosion protection. The FCS-7000 adopt a lower cost solution, by being constructed from 409 stainless steel but with a painted finish that denies most corrosion attacks. The FCS-8000 enclosures are manufactured from carbon-loaded, polyester which combines strength with the highest level of corrosion resistance.

A wide choice of glands is available, ready fitted to the junction box: stainless steel, nickel-plated brass and plastic, enabling a high quality seal with standard or wire-armoured cables. All glanding is in the base of the enclosure with a minimum of 75mm of clearance between the base of the enclosure and other components. This makes glanding much easier, especially when terminating armoured cable.

Significant cost savings can be made on a fieldbus project by selecting standard, and proven, fieldbus junction box designs. It eliminates the need for custom designs when choosing junction boxes for fieldbus applications and saves the cost of managing the specification and the eventual procurement of the junction boxes.

To select the Process JB appropriate to your application; first decide on the enclosure material, based upon site conditions, required strength, durability and economics; this will define which series you require.

Next, determine the number of fieldbus device connections, and hence the number of spur connections required in the junction box. This will also define which Megablocks (and maybe terminators) are required. Use the application examples to help you.

Identify any additional items that will need to be housed in the enclosure, e.g. surge protection devices, additional terminators. Calculate how much DIN rail they will require. Add this to length of the Megablock(s) and choose an enclosure with sufficient rail length.

Finally, decide on gland type. Is the cable armoured? Does the environment require steel or brass glands, or will plastic be sufficient? See application example tables and ordering information for details on how to fully specify the enclosure in your order.

FCS-7000 SERIES JUNCTION BOXES

The FCS-7000 Series enclosures are manufactured from 409 stainless steel with a RAL7015 painted finish, to provide high levels of corrosion resistance for process environments.

The FCS-75xx Process JBs are suitable for Zone 2 and Zone 1 intrinsically safe (Ex i) and increased safety applications (Ex e).

The junction boxes are available pre-drilled for one segment: having trunk-in, trunk-out and 4 spur connections; or a trunk-in and 10 or 12 spur connections; or two segments having a trunk-in and 20 or 24 spur connections. Two-pair multicore trunk cable may be used when only a single trunk gland is available.

The wide choice of glands, including stainless steel, nickel-plated brass and plastic, enables a high quality seal with standard or wire armoured cables.

The box incorporates a rain channel that prevents standing water from damaging the one-piece seal; diverting it away from the contents when the door is opened. A 10mm earth stud and a breather are also included as standard.

An adhesive backed, Traffolyte tag label is supplied loose or can be engraved with the tag number and fitted, if details are supplied when ordering.

SPECIFICATION

GENERAL

Materials

409 stainless steel - painted (RAL 7015 grey)
Chloroprene gasket

DIN rail

FCS-7504, FCS-7510, FCS-7512: - one (1) DIN rail
FCS-7520, FCS-7524: - two (2) DIN rails
DIN rail to EN 50022 35 x 7.5 'T' section, mounted vertically
Each rail fitted with two end stops

Breather plug

Provided

External earth connection

M10 threaded stud



Tag label

Traffolyte, adhesive backed - white background - black text

Other

Hinged lid

ENVIRONMENTAL

Operating Temperature

-45°C to +70°C - Steel & nickel plated brass glands
-30°C to +70°C - Plastic glands

Storage Temperature

-45°C to +85°C

Relative Humidity % RH (non-condensing)

5 to 95%

IP rating

IP66 to EN 60529

Impact resistance

7 Nm to EN 50014

Location of Process JB

Safe area, Zone 2, IIC T4 hazardous area or Zone 1, IIC T4 hazardous area for intrinsically safe fieldbus segment.

Note: If used in a hazardous area, the contents must be suitably certified/ approved.

APPLICATION EXAMPLES

Model	Max. glands	DIN rail length mm	Megablocks /trunk	No of trunks	Spurs/trunk	Trunk in	Trunk out	Total spurs	-ZZ* value	Unused DIN rail length mm
Single trunk applications										
FCS-7504	6	166	2 way	1	2	1	1	2	03	111
			4 way	1	4	1	1	4	05	86
			4 way(T)	1	4	1	-	4	04	86
FCS-7510	11	166	4 way + 2 way	1	6	1	1	6	07	31
			8 way	1	8	1	1	8	09	36
			8 way(T)	1	8	1	1	8	08	36
			10 way(T)	1	10	1	-	10	10	-
FCS-7512	13	212	12 way(T)	1	12	1	-	12	12	25
FCS-7520	21	2 x 286	8 way + 8 way(T)	1	16	1	-	16	16	2 x 136
Double trunk applications										
FCS-7520	21	2 x 286	2 x 8 way(T)	2	8	1 (2-pair multicore)	-	16	16	2 x 156
			2 x 10 way(T)	2	10	1 (2-pair multicore)	-	20	20	2 x 129
FCS-7524	25	2 x 286	2 x 12 way(T)	2	12	1 (2-pair multicore)	-	24	24	2 x 99

(T) = Megablock with integral terminator

* see ordering information

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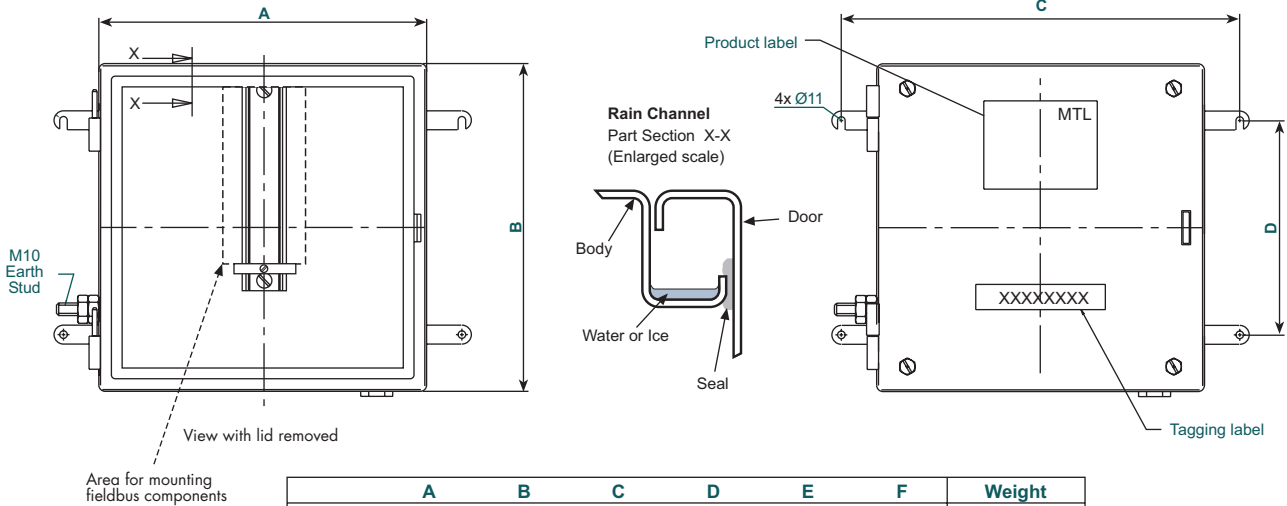
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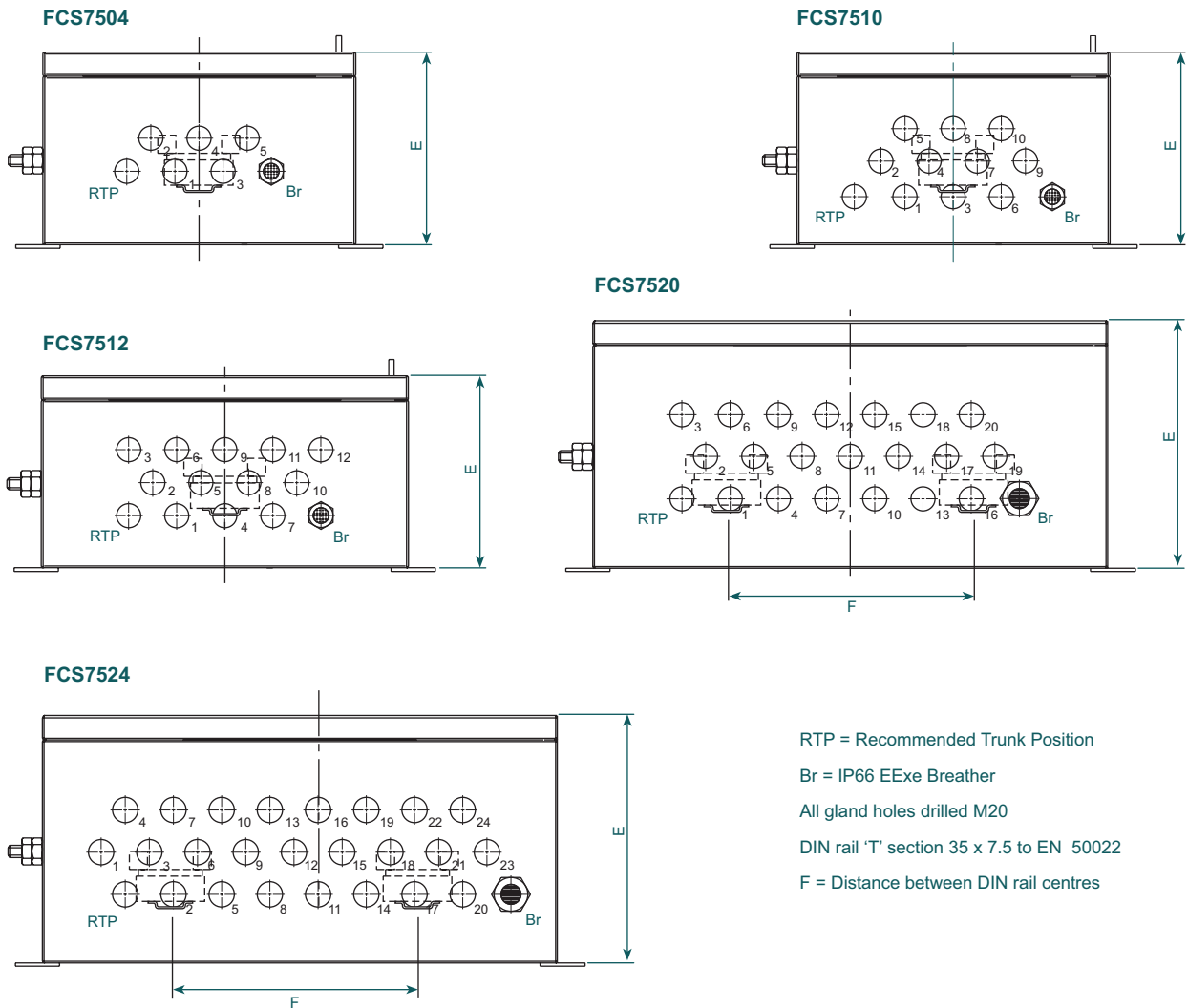
ENCLOSURE AND MOUNTING DIMENSIONS



	A	B	C	D	E	F	Weight
FCS-7504	260	260	316	170	160	N/A	6.0 - 6.5kg
FCS-7510	260	260	316	170	160	N/A	6.0 - 7.0kg
FCS-7512	306	306	361	203	160	N/A	7.0 - 8.2kg
FCS-7520	450	380	506	250	156	185	10.0 - 12.2kg
FCS-7524	450	380	506	250	156	185	10.0 - 12.2kg

Dimensions in mm

GLANDING ARRANGEMENTS



FCS-8000 SERIES JUNCTION BOXES

The FCS-8000 Series carbon loaded polyester enclosures provide the highest levels of corrosion resistance for the harshest process environments.

The FCS-85xx Process JB's are suitable for Zone 2 and Zone 1 intrinsically safe (Ex i) and increased safety applications. The controlled surface resistance eliminates the risk of static buildup.

The junction boxes are available pre-drilled for one segment: having trunk-in, trunk-out and 4 spur connections; or a trunk-in and 10 or 12 spur connections; or two segments having a trunk-in and 20 or 24 spur connections. Two-pair multicore trunk cable may be used when only a single trunk gland is available.

A wide choice of glands, including stainless steel, nickel-plated brass and plastic, enables a high quality seal to be achieved with either standard or wire-armoured cables.

The mounting screws are insulated by the case material and are located outside of the lid seal. A 10mm earth stud and a breather are included as standard.

An adhesive backed, Traffolyte tag label is supplied loose or can be engraved with the tag number and fitted, if details are supplied when ordering.



SPECIFICATION

GENERAL

Materials

Carbon-loaded, glass-fibre reinforced polyester, halogen-free, surface resistance <math> < 10^9 \Omega </math> to EN 50014
Stainless steel lid screws, silicone lid seal

DIN rail

FCS-8504, FCS-8510, FCS-8512: - one (1) DIN rail
FCS-8520, FCS-8524: - two (2) DIN rails
DIN rail to EN 50022 35 x 7.5 'T' section, mounted vertically
Each rail fitted with two end stops

Breather plug

Provided

External earth connection

M10 threaded stud

Tag label

Traffolyte, adhesive backed - white background - black text

ENVIRONMENTAL

Operating Temperature

-45°C to +70°C - Steel & nickel plated brass glands
-30°C to +70°C - Plastic glands

Storage Temperature

-45°C to +85°C

Relative Humidity % RH (non-condensing)

5 to 95%

IP rating

IP66 to EN 60529

Impact resistance

7 Nm to EN 50014

Location of Process JB

Safe area, Zone 2, IIC T4 hazardous area or Zone 1, IIC T4 hazardous area for intrinsically safe fieldbus segment.

Note: If used in a hazardous area, the contents must be suitably certified/ approved.

APPLICATION EXAMPLES

Model	Max. glands	DIN rail length mm	Megablocks /trunk	No of trunks	Spurs/ trunk	Trunk in	Trunk out	Total spurs	-ZZ* value	Unused DIN rail length mm
Single trunk applications										
FCS-8504	6	157	2 way	1	2	1	1	2	03	102
			4 way	1	4	1	4	05	77	
			4 way(T)	1	4	-	4	04	77	
FCS-8510	11	157	4 way + 2 way	1	6	1	1	6	07	22
			8 way	1	8	1	8	09	27	
			8 way(T)	1	8	1	8	08	27	
			10 way(T)	1	10	-	10	10	-	
FCS-8512	13	303	12 way(T)	1	12	1	-	12	115	
FCS-8520	21	2 x 302	8 way + 8 way(T)	1	16	1	-	16	16	2 x 172
Double trunk applications										
FCS-8520	21	2 x 302	2 x 8 way(T)	2	8	1 (2-pair multicore)	-	16	16	2 x 172
			2 x 10 way(T)	2	10	1 (2-pair multicore)	-	20	20	2 x 145
FCS-8524	25	2 x 302	2 x 12 way(T)	2	12	1 (2-pair multicore)	-	24	24	2 x 115

(T) = Megablock with integral terminator

* see ordering information

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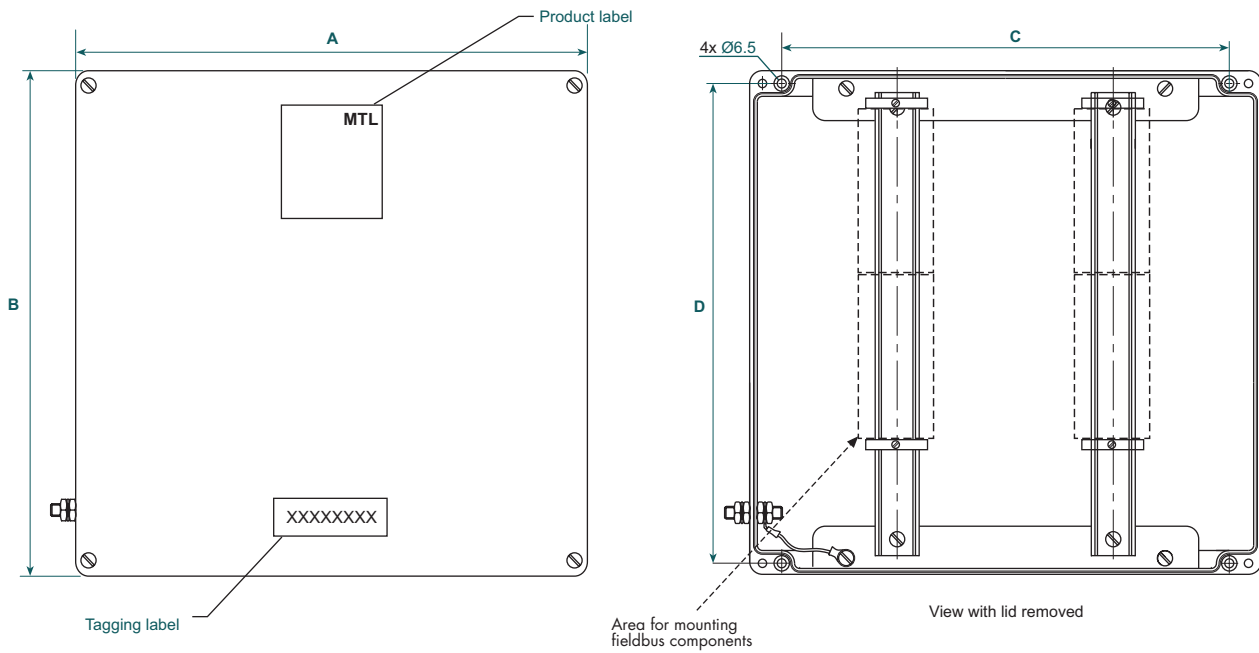
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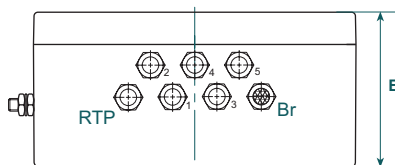
ENCLOSURE AND MOUNTING DIMENSIONS



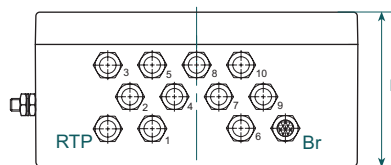
	A	B	C	D	E	F	Weight
FCS-8504	251	256.5	200.5	236	121	N/A	3.5 - 4.0kg
FCS-8510	251	256.5	200.5	236	121	N/A	3.5 - 4.5kg
FCS-8512	250.5	402	201	381.5	120	N/A	5.0 - 6.2kg
FCS-8520	406	401	356	381.5	120	172	6.0 - 7.9kg
FCS-8524	406	401	356	381.5	120	172	6.0 - 8.2kg

GLANDING ARRANGEMENTS

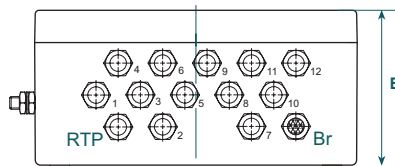
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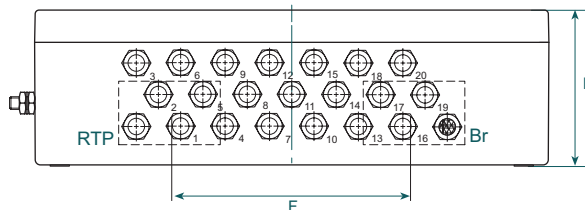
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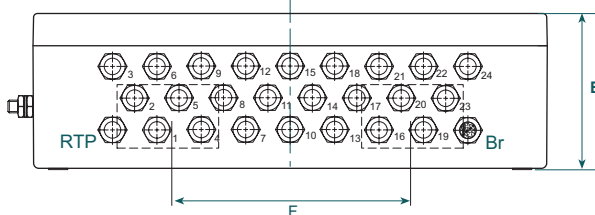
FCS8512



FCS8520



FCS8524



RTP = Recommended Trunk Position

Br = IP66 EExe Breather

All gland holes drilled M20

DIN rail 'T' section 35 x 7.5 to EN 50022

F = Distance between DIN rail centres

The glands shown are representative only



FCS-9000 SERIES JUNCTION BOXES

The FCS-9000 Series enclosures are manufactured from polished 316 stainless steel to provide the highest levels of corrosion resistance for the harshest process environments.

The FCS-95xx Process JB's are suitable for Zone 2 and Zone 1 intrinsically safe (Ex i) and increased safety applications.

The junction boxes are available pre-drilled for one segment: having trunk-in, trunk-out and 4 spur connections; or a trunk-in and 10 or 12 spur connections; or two segments having a trunk-in and 24 spur connections. Two-pair multicore trunk cable may be used when only a single trunk gland is available.

The wide choice of glands, including stainless steel, nickel-plated brass and plastic, enables a high quality seal with standard or wire armoured cables.

The box incorporates a rain channel that prevents standing water from damaging the one-piece seal; diverting it away from the contents when the door is opened. A 10mm earth stud and a breather are also included as standard.

An adhesive backed, Traffolyte tag label is supplied loose or can be engraved with the tag number and fitted, if details are supplied when ordering.

SPECIFICATIONS

GENERAL

Materials

Electrochemically polished 316 Stainless Steel
Chloroprene gasket

DIN rail

FCS-9504, FCS-9510, FCS-9512: - one (1) DIN rail
FCS-9524: - two (2) DIN rails
DIN rail to EN 50022 35 x 7.5 'T' section, mounted vertically
Each rail fitted with two end stops

Breather plug

Provided

External earth connection

M10 threaded stud



Tag label

Traffolyte, adhesive backed - white background - black text

Other

Hinged lid

ENVIRONMENTAL

Operating Temperature

-45°C to +70°C - Steel & nickel-plated brass glands
-30°C to +70°C - Plastic glands

Storage Temperature

-45°C to +85°C

Relative Humidity % RH (non-condensing)

5 to 95%

IP rating

IP66 to EN 60529

Impact resistance

7 Nm to EN 50014

Location of Process JB

Safe area, Zone 2, IIC T4 hazardous area or Zone 1, IIC T4 hazardous area for intrinsically safe fieldbus segment.

Note: If used in a hazardous area, the contents must be suitably certified/ approved.

APPLICATION EXAMPLES

Model	Max. glands	DIN rail length mm	Megablocks /trunk	No of trunks	Spurs/ trunk	Trunk in	Trunk out	Total spurs	-ZZ* value	Unused DIN rail length mm
Single trunk applications										
FCS-9504	6	166	2 way	1	2	1	1	2	03	111
			4 way	1	4	1	1	4	05	86
			4 way(T)	1	4	1	-	4	04	86
FCS-9510	11	166	4 way + 2 way	1	6	1	1	6	07	31
			8 way	1	8	1	1	8	09	36
			8 way(T)	1	8	1	1	8	08	36
			10 way(T)	1	10	1	-	10	10	-
FCS-9512	13	212	12 way(T)	1	12	1	-	12	12	-
FCS-9524	21	2 x 286	8 way + 8 way(T)	1	16	1	-	16	16	2 x 156
Double trunk applications										
FCS-9524	21	2 x 286	2 x 8 way(T)	2	8	1 (2-pair multicore)	-	16	16	2 x 156
			2 x 10 way(T)	2	10	1 (2-pair multicore)	-	20	20	2 x 129
FCS-9524	25	2 x 286	2 x 12 way(T)	2	12	1 (2-pair multicore)	-	24	24	2 x 99

(T) = Megablock with integral terminator

* see ordering information

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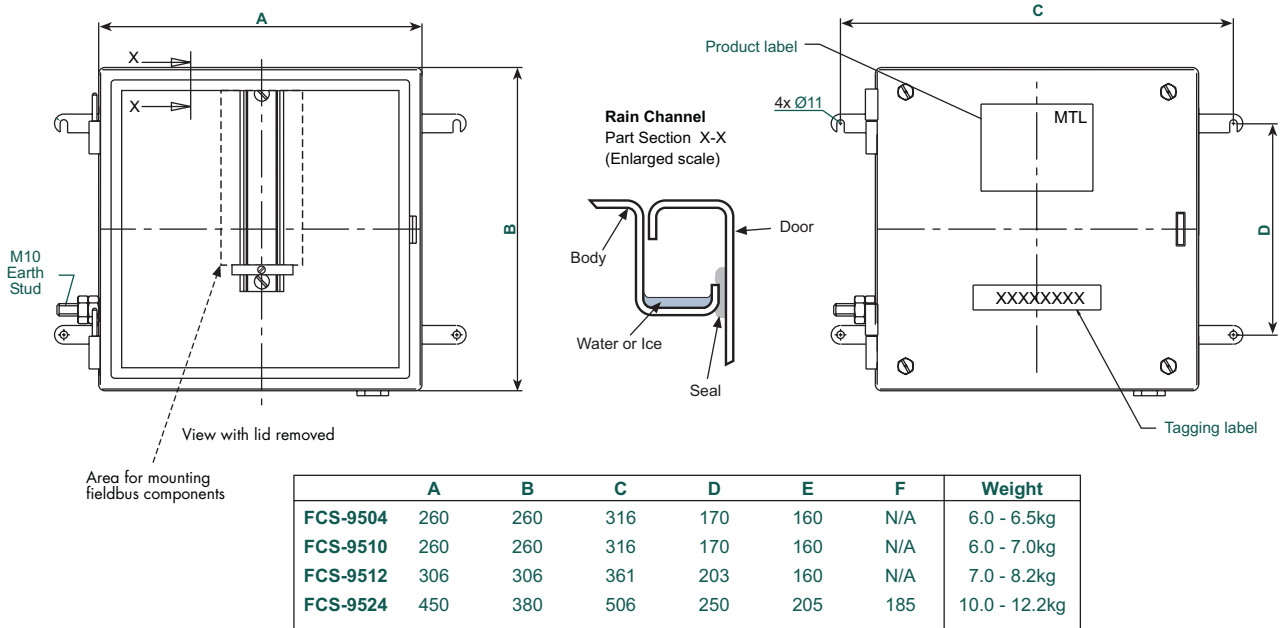
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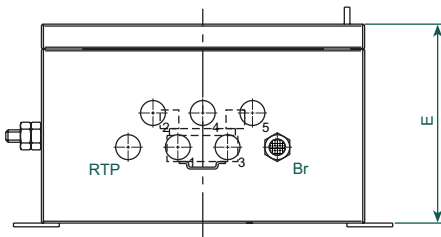
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ENCLOSURE AND MOUNTING DIMENSIONS

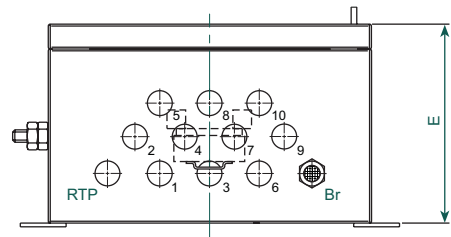


GLANDING ARRANGEMENTS

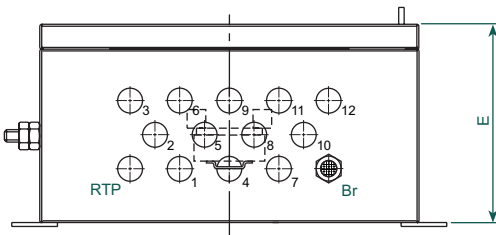
FCS-9504



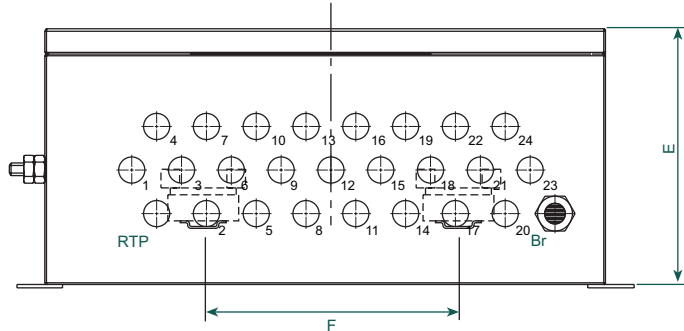
FCS-9510



FCS-9512



FCS-9524



RTP = Recommended Trunk Position

Br = IP66 EExe Breather

All gland holes drilled M20

DIN rail 'T' section 35 x 7.5 to EN 50022

F = Distance between DIN rail centres



APPROVALS

Region		Europe	N America	
Authority		Kema	UL	
Standard		EN 50014:1992 + prA1 EN 50019:1994 + prA1 EN 50281-1:1998	UL50 C22.2 No94-M91	UL508 16th edition C22.2 No14 1983 IEC 79-0 1983 Amendments 1 + 2 IEC79-7 1990
Approved for		II 2 G EEx e II II 2 D	Nema 4X for Class I Div 2	Class I, Zone 1 AEx e II, Ex e II
MTL Part No.	Crouse Hinds Enclosure Part Number	Certificate Numbers		
FCS-7504	NXT262616	Kema 99ATEX3174U	E115376	E108296
FCS-7510	NXT262616	Kema 99ATEX3174U	E115376	E108296
FCS-7512	NXT303016	Kema 99ATEX3174U	E115376	pending
FCS-7520	NXT384520	Kema 99ATEX3174U	E115376	pending
FCS-7524	NXT384520	Kema 99ATEX3174U	E115376	pending
FCS-9504	NXT262616	Kema 99ATEX3174U	E115376	E108296
FCS-9510	NXT262616	Kema 99ATEX3174U	E115376	E108296
FCS-9512	NXT303016	Kema 99ATEX3174U	E115376	pending
FCS-9524	NXT384520	Kema 99ATEX3174U	E115376	pending

Region		Europe	N America
Authority		PTB	UL
Standard		EN 50014:1997 +A1+A2 EN 50019:1994	UL50
Approved for		II 2 G EEx e II II 2 D	Nema 4X for Class I Div 2
MTL Part No.	Bartec Enclosure Part Number	Certificate Numbers	
FCS-8504	07-5185-2552/5012	PTB 01ATEX1014U	E188224
FCS-8510	07-5185-2552/5012	PTB 01ATEX1014U	E188224
FCS-8512	07-5185-4002/5012	PTB 01ATEX1014U	E188224
FCS-8520	07-5185-4004/5012	PTB 01ATEX1014U	E188224
FCS-8524	07-5185-4004/5012	PTB 01ATEX1014U	E188224

GLAND OPTION DETAILS

Option	Description	Gland model no.	Cable Size mm	Socket size mm	Temp. range
-A20	Nickel plated brass gland, for steel wired armoured cable M20 EEx d/e double seal	Capri ADE 4F 846694	8.5 – 16.0 outer diam. 6.0 – 12.0 inner diam. 0 – 1.25 armour	24	-40 to +70°C
-R20	Stainless steel gland, for steel wired armoured cable M20 EEx d/e double seal	Capri ADE 4F 846699	8.5 – 16.0 outer diam. 6.0 – 12.0 inner diam. 0 – 1.25 armour	24	-40 to +70°C
-S20	Stainless steel gland, M20, EEx e, single seal	Capri ADE 1F 816699	6.0 – 12.0 outer diam.	19/24	-40 to +70°C
-C20	Nickel plated brass gland, M20, EEx e, single seal	Capri ADE 1F 816694	6.0 – 12.0 outer diam.	19/24	-40 to +70°C
-P20	Black nylon gland M20, EEx e, single seal	Jakob 50.620 PASWL/EX	5.5 – 13.0 outer diam.	24	-30 to +70°C

ORDERING INFORMATION

Part No	Description
FCS-75XX-YYY-ZZ	Process JB, 409 steel, stainless, painted
FCS-85XX-YYY-ZZ	Process JB, carbon loaded GRP
FCS-95XX-YYY-ZZ	Process JB, 316 steel, stainless

XX = number of spur outlets

04	4 spur outlets + trunk-in and trunk-out
10 or 12	10 or 12 spur outlets + trunk-in
20 or 24	20* or 24 spur outlets + trunk-in

-YYY	= trunk & spur glanding
-020	= Predrilled for M20 glands - none fitted
-X20	= Predrilled, with M20 brass blanking plugs
-Y20	= Predrilled, with M20 plastic blanking plugs
-A20	= Nickel-plated brass M20 glands for wire-armoured cable
-R20	= Stainless Steel M20 glands for wire-armoured cable
-S20	= Stainless Steel M20 glands
-C20	= Nickel-plated brass M20 glands
-P20	= Plastic M20 glands

* 20 spur outlet version not available for FCS-95xx series.
Use FCS-9524-yyy-20

-ZZ = number of spur outlet glands to be fitted

A gland of the specified type is **always supplied** and fitted for the trunk-in. Any remaining holes are fitted with blanking plugs of the same material as the glands. *If this number is not specified, glands will be fitted to all outlets (including the trunk-out, if applicable).*

Example part number

FCS-7504-A20-04

An FCS-7504 junction box having 4 spur outlets, 1 trunk-in and 1 trunk-out. Supplied with nickel-plated brass M20 glands for wire-armoured cable fitted on 4 spur outlets +1 trunk-in. The trunk-out has a nickel-plated blanking plug fitted.

ACCESSORIES

Surface mounting kit

FCS-1000-CGT Cable gland tool

Labels for Hazardous Area applications

FCS-LAB-NA-NA	EEx nA trunk and Spurs (pack of 10)
FCS-LAB-NA-NL	EEx nA trunk with EEx nL spurs (pack of 10)
FCS-LAB-NL-NL	EEx nL trunk and Spurs (pack of 10)
FCS-LAB-IS-IS	EEx i trunk and spurs (pack of 10)

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