

# PROCESS JBs



- ◆ **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 JB's 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
<b>Single trunk applications</b>										
<b>FCS-7504</b>	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
<b>FCS-7510</b>	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	-	8	08	36
			10 way(T)	1	10	1	-	10	10	-
<b>FCS-7512</b>	13	212	12 way(T)	1	12	1	-	12	12	25
<b>FCS-7520</b>	21	2 x 286	8 way + 8 way(T)	1	16	1	-	16	16	2 x 136
<b>Double trunk applications</b>										
<b>FCS-7520</b>	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
<b>FCS-7524</b>	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



EUROPE (EMEA)  
AMERICAS  
ASIA PACIFIC  
E-mail: enquiry@mtl-inst.com

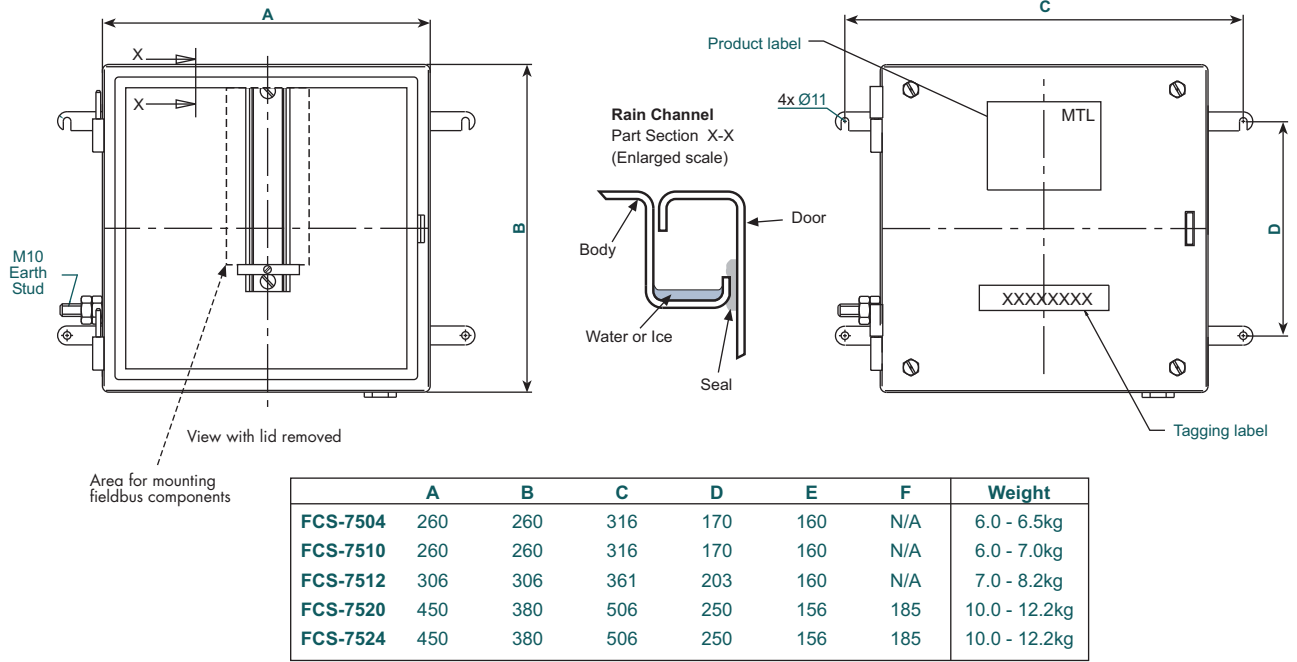
Tel: +44 (0)1582 723633  
Tel: +1 603 926 0090  
Tel: +65 6 487 7887

Fax: +44 (0)1582 422283  
Fax: +1 603 926 1899  
Fax: +65 6 487 7997

Web site: www.mtl-inst.com

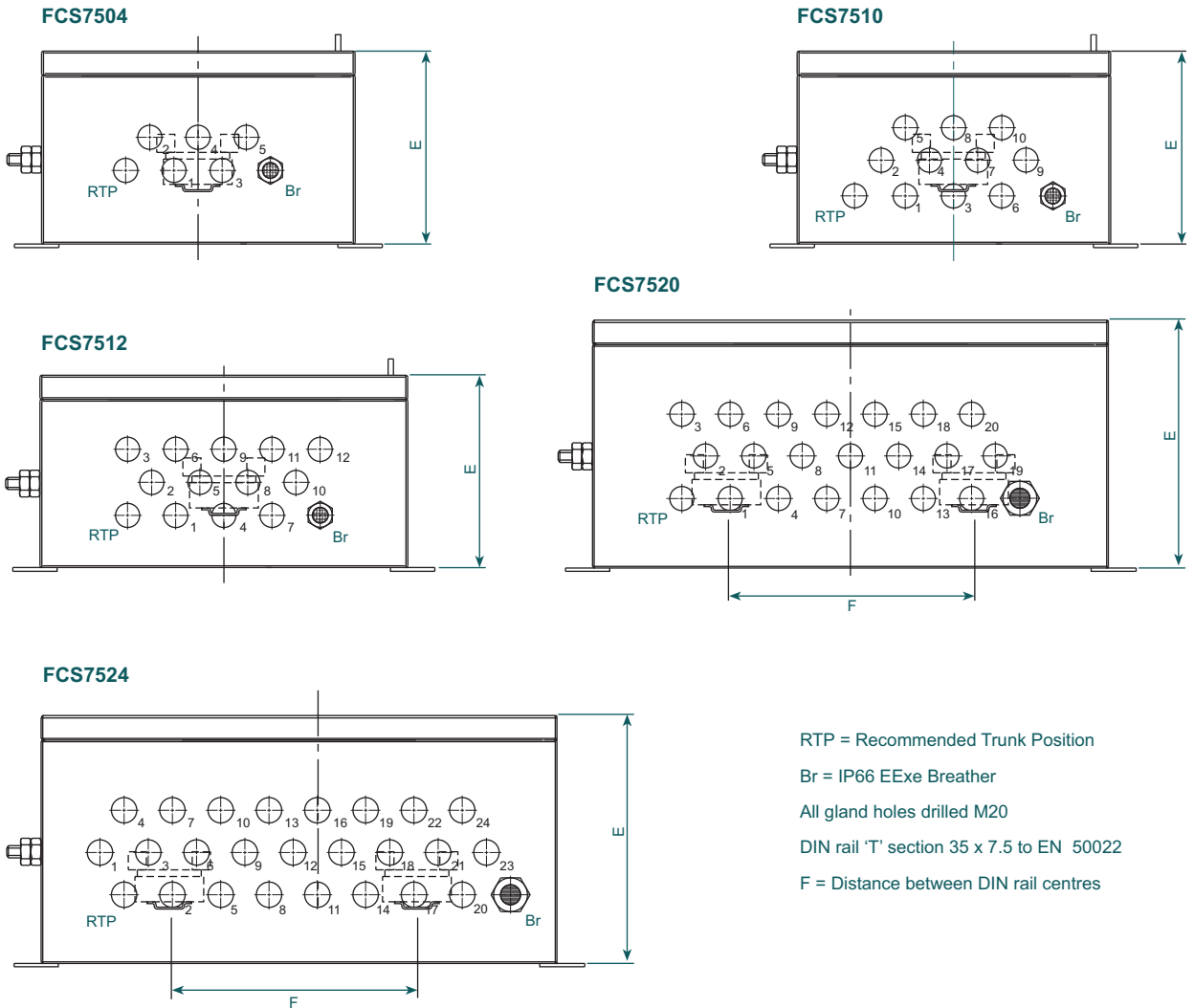
Oct 2007

## ENCLOSURE AND MOUNTING DIMENSIONS



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
<b>Single trunk applications</b>										
<b>FCS-8504</b>	6	157	2 way	1	2	1	1	2	03	102
			4 way	1	4	1	1	4	05	77
			4 way(T)	1	4	1	-	4	04	77
<b>FCS-8510</b>	11	157	4 way + 2 way	1	6	1	1	6	07	22
			8 way	1	8	1	1	8	09	27
			8 way(T)	1	8	1	-	8	08	27
			10 way(T)	1	10	1	-	10	10	-
<b>FCS-8512</b>	13	303	12 way(T)	1	12	1	-	12	115	
<b>FCS-8520</b>	21	2 x 302	8 way + 8 way(T)	1	16	1	-	16	16	2 x 172
<b>Double trunk applications</b>										
<b>FCS-8520</b>	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
<b>FCS-8524</b>	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



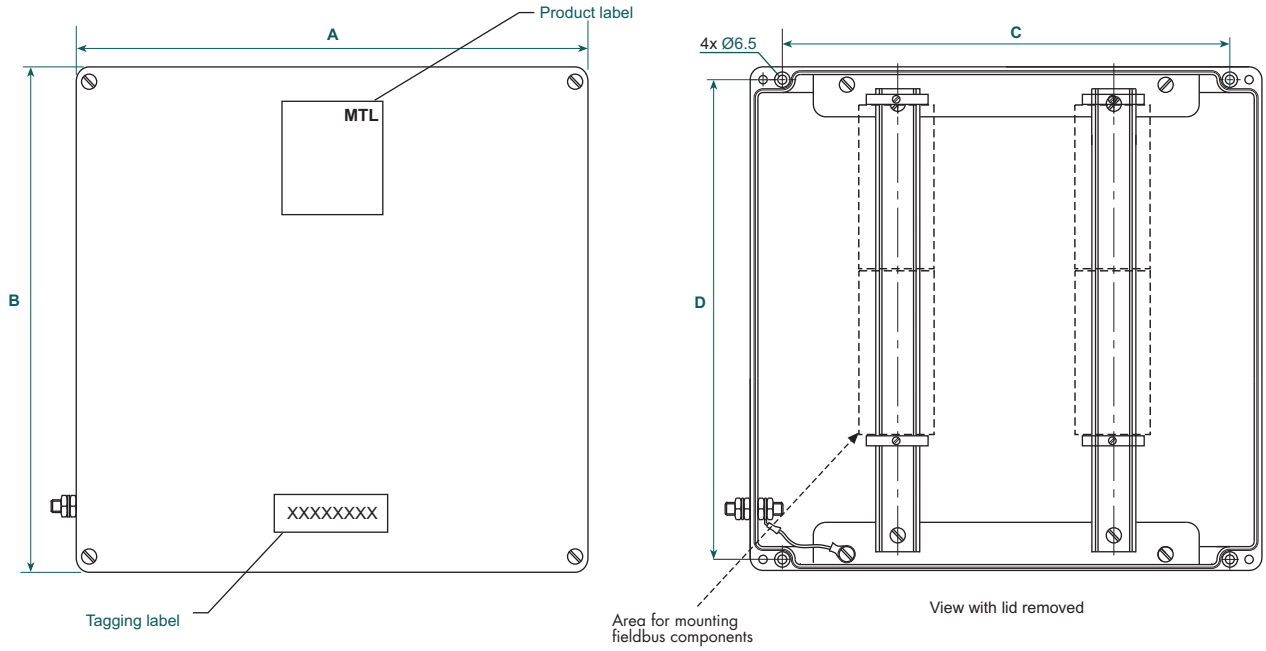
EUROPE (EMEA)  
AMERICAS  
ASIA PACIFIC  
E-mail: enquiry@mtl-inst.com

Tel: +44 (0)1582 723633  
Tel: +1 603 926 0090  
Tel: +65 6 487 7887

Fax: +44 (0)1582 422283  
Fax: +1 603 926 1899  
Fax: +65 6 487 7997  
Web site: www.mtl-inst.com

Oct 2007

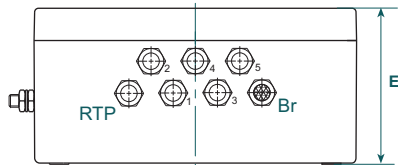
## ENCLOSURE AND MOUNTING DIMENSIONS



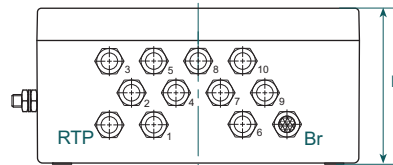
	A	B	C	D	E	F	Weight
<b>FCS-8504</b>	251	256.5	200.5	236	121	N/A	3.5 - 4.0kg
<b>FCS-8510</b>	251	256.5	200.5	236	121	N/A	3.5 - 4.5kg
<b>FCS-8512</b>	250.5	402	201	381.5	120	N/A	5.0 - 6.2kg
<b>FCS-8520</b>	406	401	356	381.5	120	172	6.0 - 7.9kg
<b>FCS-8524</b>	406	401	356	381.5	120	172	6.0 - 8.2kg

## GLANDING ARRANGEMENTS

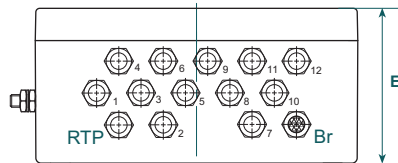
**FCS8504**



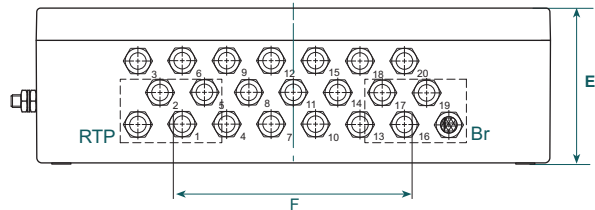
**FCS8510**



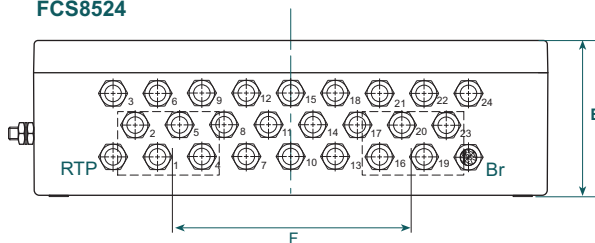
**FCS8512**



**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



**EUROPE (EMEA)**  
**AMERICAS**  
**ASIA PACIFIC**  
E-mail: [enquiry@mfl-inst.com](mailto:enquiry@mfl-inst.com) Web site: [www.mfl-inst.com](http://www.mfl-inst.com)

Tel: +44 (0)1582 723633  
Tel: +1 603 926 0090  
Tel: +65 6 487 7887

Fax: +44 (0)1582 422283  
Fax: +1 603 926 1899  
Fax: +65 6 487 7997

# 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
<b>Single trunk applications</b>										
<b>FCS-9504</b>	6	166	2 way	1	2	1	1	2	03	111
			4 way	1	4	1	4	05	86	
			4 way(T)	1	4	1	-	4	04	86
<b>FCS-9510</b>	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	-
<b>FCS-9512</b>	13	212	12 way(T)	1	12	1	-	12	12	-
<b>FCS-9524</b>	21	2 x 286	8 way + 8 way(T)	1	16	1	-	16	16	2 x 156
<b>Double trunk applications</b>										
<b>FCS-9524</b>	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
<b>FCS-9524</b>	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



EUROPE (EMEA)  
AMERICAS  
ASIA PACIFIC  
E-mail: enquiry@mti-inst.com

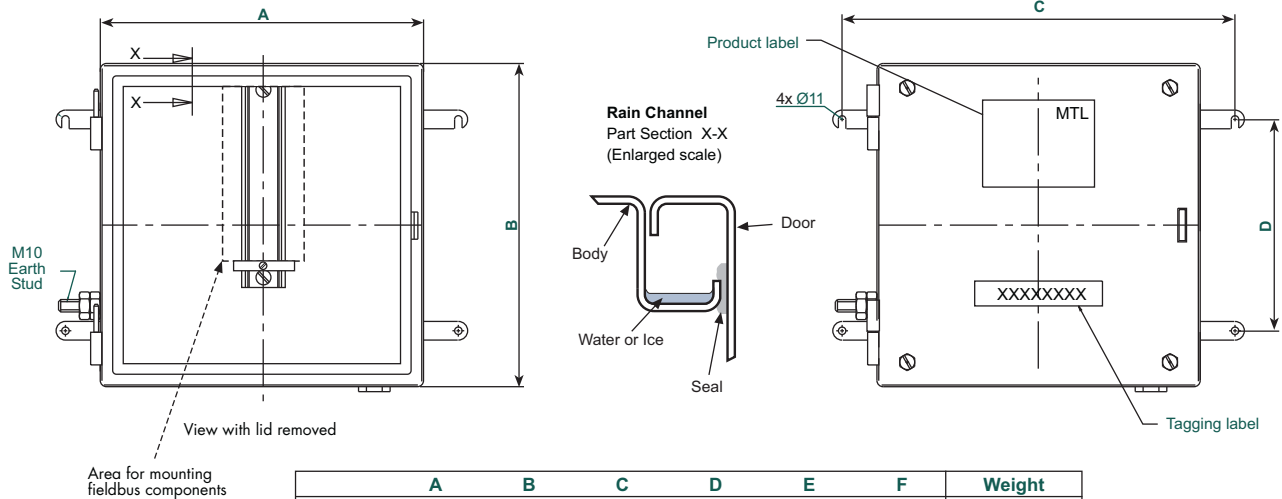
Tel: +44 (0)1582 723633  
Tel: +1 603 926 0090  
Tel: +65 6 487 7887

Fax: +44 (0)1582 422283  
Fax: +1 603 926 1899  
Fax: +65 6 487 7997

Web site: www.mti-inst.com

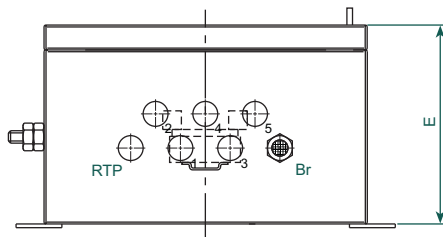
Oct 2007

## ENCLOSURE AND MOUNTING DIMENSIONS

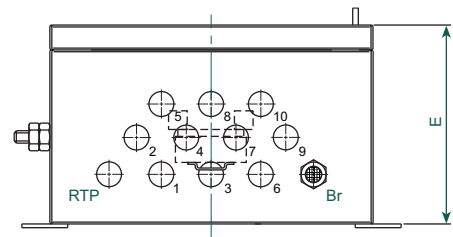


## GLANDING ARRANGEMENTS

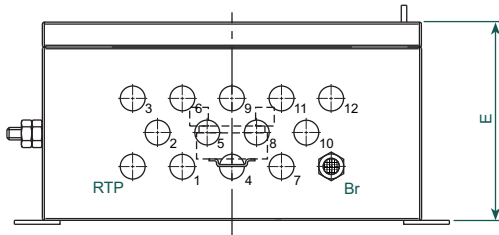
**FCS-9504**



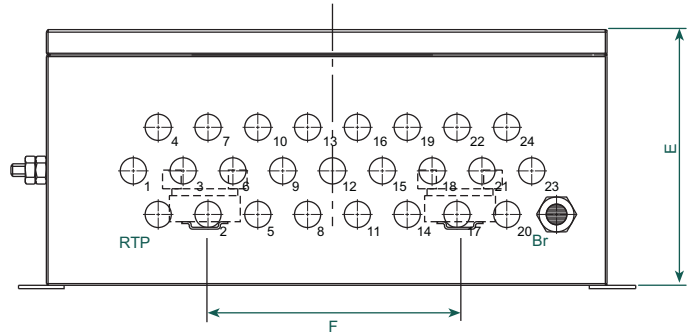
**FCS-9510**



**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	UL50	UL508 16th edition
		EN 50019:1994 + prA1	C22.2 No94-M91	C22.2 No14 1983
		EN 50281-1:1998		IEC 79-0 1983 Amendments 1 + 2
Approved for		II 2 G EEx e II	Nema 4X for	Class I, Zone 1
		II 2 D	Class I Div 2	AEx e II, Ex e II
MTL Part No.	Crouse Hinds Enclosure Part Number	<b>Certificate Numbers</b>		
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	UL50	
		EN 50019:1994		
Approved for		II 2 G EEx e II	Nema 4X for	
		II 2 D	Class I Div 2	
MTL Part No.	Bartec Enclosure Part Number	<b>Certificate Numbers</b>		
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 <b>armoured cable</b> 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 <b>armoured cable</b> 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 sea	Jakob 50.620 PASWL/EX	5.5 – 13.0 outer diam.	24	-30 to +70°C

## ORDERING INFORMATION

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

### XX = number of spur outlets

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

### -YYY = trunk & spur glanding

<b>-020</b>	= Predrilled for M20 glands - none fitted
<b>-X20</b>	= Predrilled, with M20 brass blanking plugs
<b>-Y20</b>	= Predrilled, with M20 plastic blanking plugs
<b>-A20</b>	= Nickel-plated brass M20 glands for wire-armoured cable
<b>-R20</b>	= Stainless Steel M20 glands for wire-armoured cable
<b>-S20</b>	= Stainless Steel M20 glands
<b>-C20</b>	= Nickel-plated brass M20 glands
<b>-P20</b>	= 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

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

