

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**



Eaton's MTL Process JBs are designed for mounting Megablock fieldbus wiring components, terminators, F30 Ex ic adaptor, 9320 spur connections, surge protection devices and MTL831 Multiplexer transmitters in order to meet the exacting requirements of process industry customers.

MTL wiring components are established as the industry standard for fieldbus device connections and are combined with Crouse-Hinds junction box and cable glands in the Process JB product range.

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 wiring components.

The FCS-9000 series that provide strength, durability and corrosion resistance to many chemicals and their vapours. The enclosures are manufactured from 316 stainless steel to provide the highest level of corrosion protection.

A wide choice of glands is available, ready fitted to the junction box: stainless steel and nickel-plated brass 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 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. For MTL831C applications, the enclosure choice will depend on the number of transmitters (maximum 2 x MTL831C) to be fitted inside the enclosure.

Identify any additional items that will need to be housed in the enclosure, e.g. terminals for terminating spare cables, Ex ic adaptor, additional terminators, etc. 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 stainless steel or nickel plated brass glands? See application example tables and ordering information for details on how to fully specify the enclosure in your order.

FCS-9000 range

Junction boxes

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

The FCS-96xx Process JBs are suitable for Zone 2 and Zone 1 intrinsically safe (Ex i) and increased safety applications.

The fieldbus junction boxes are available pre-drilled for one segment: having trunk-in, trunk-out and 4 spur connections; or a trunk-in and 8 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.

For temperature multiplexer applications, junction boxes are available for a single MTL831C with a data highway in and 16 sensor connections and for 2 MTL831C units with a data highway in and 32 sensor connections.

The wide choice of glands, including stainless steel and nickel-plated brass, 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

Electrochemically polished 316 Stainless Steel
Silicone gasket

DIN rail

FCS-9604, FCS-9608, FCS-9612,
FCS-9616, FCS-9642: - one (1) DIN rail
FCS-9624, FCS-9362: - 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

-40°C to +70°C

Storage Temperature

-40°C to +80°C

Relative Humidity % RH (non-condensing)

5 to 95%

IP rating

IP66 to EN 60529

Impact resistance

7 Nm to IEC 60079-7

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.

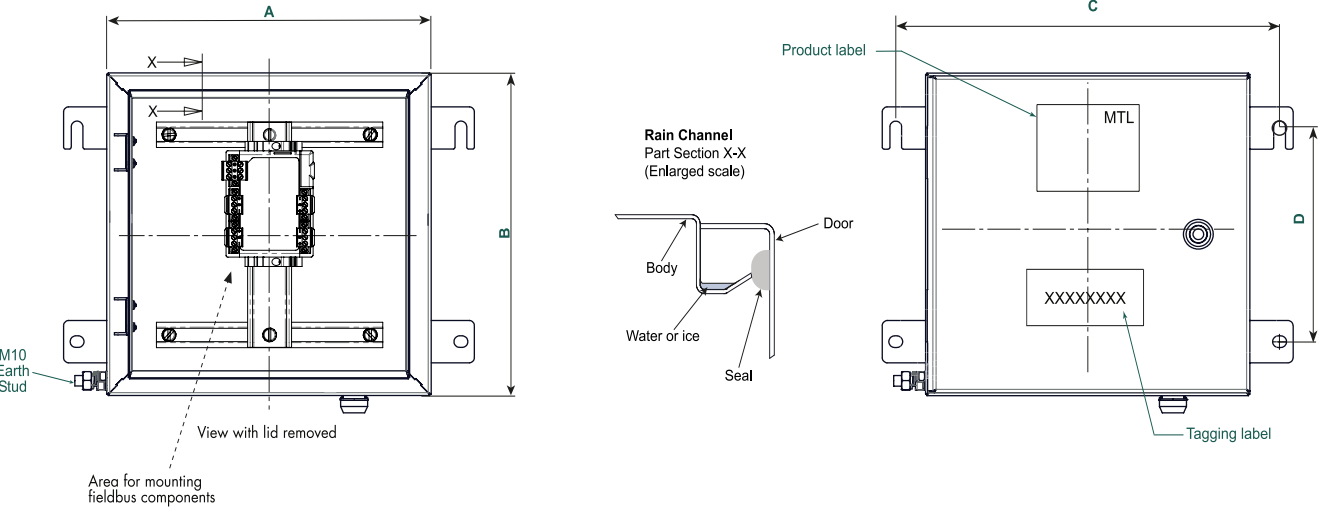
APPLICATION EXAMPLES

Model	Max. glands	DIN rail length mm	Megablocks /trunk	No of trunks	Spurs/ trunk	Trunk in	Trunk out	Total spurs	-ZZ* value
Single trunk applications									
FCS-9604	6	166	2 way	1	2	1	1	2	3
			4 way	1	4	1	1	4	5
			4 way(T)	1	4	1	-	4	4
FCS-9608	9	166	4 way + 2 way	1	6	1	1	6	7
			8 way	1	8	1	1	8	0
			8 way(T)	1	8	1	1	8	8
FCS-9612	13	200	12 way (T)	1	12	1	-	12	12
			Ex ic + 4 way (T)	1	4	1	-	4	4
FCS-9642	13	260	Ex ic + 8 way (T)	1	8	1	-	12	8
			Ex ic + 12 way (T)	1	12	1	-	12	12
FCS-9624	25	2 x 260	8 way + 8 way(T)	1	16	1	-	16	16
Double trunk applications									
FCS-9624	25	2 x 260	2 x 8 way(T)	2	8	1 (2-pair multicore)	-	16	16
			2 x 10 way(T)	2	10	1 (2-pair multicore)	-	20	20
			2 x 12 way(T)	2	12	1 (2-pair multicore) 1	-	24	24
			2 x Ex ic 12 way(T)	2	12	(2-pair multicore)	-	24	24

(T) = Megablock with integral terminator * see ordering information

Model	Max. glands	Multiplexer sensor channels	No of Data Highway
FCS-9616	18	16	1
FCS-9632	34	32	2

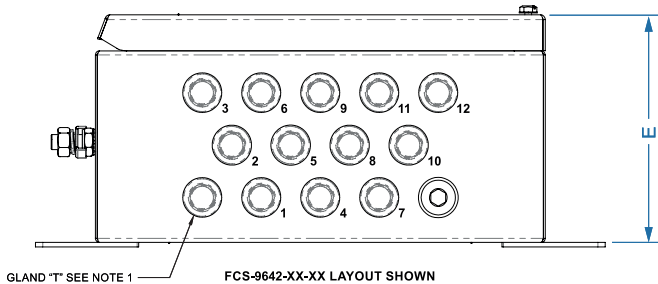
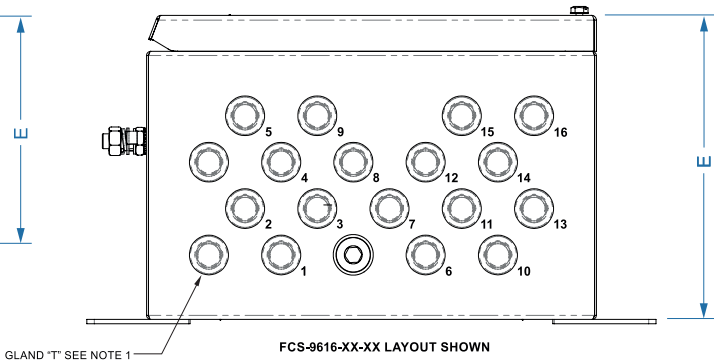
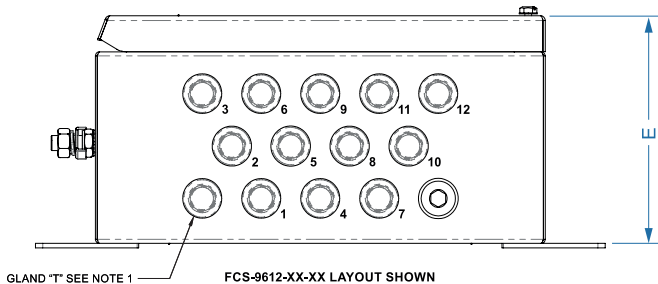
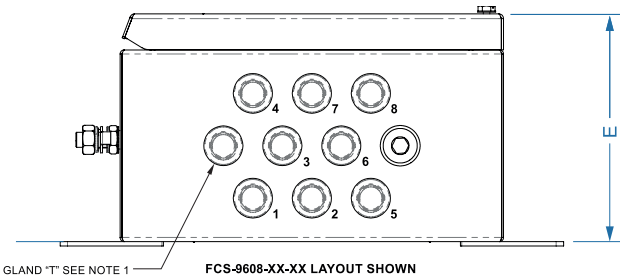
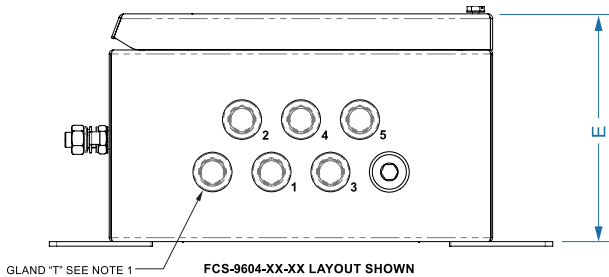
ENCLOSURE AND MOUNTING DETAILS



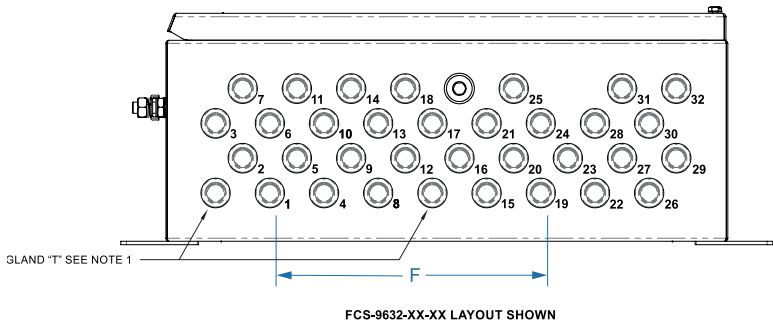
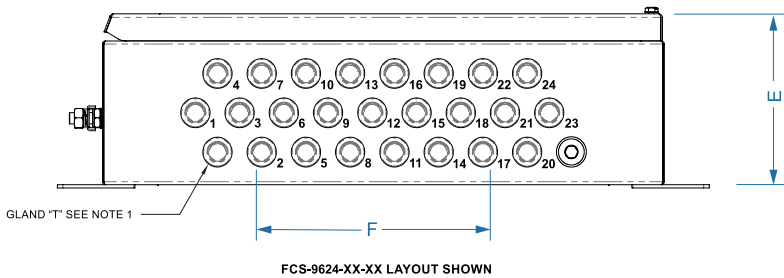
	A	B	C	D	E	F	Weight
FCS-9604	260	260	316	170	152	N/A	6.0 - 6.5kg
FCS-9608	260	260	316	170	152	N/A	6.0 - 7.0kg
FCS-9612	305	305	361	203	152	N/A	7.0 - 8.2kg
FCS-9616	305	305	361	203	203	N/A	7.2 - 8.4kg
FCS-9632	508	406	564	267	203	185	10.3 - 12.5kg*
FCS-9624	508	406	564	267	152	185	10.0 - 12.2kg*
FCS-9642	305	406	361	267	152	N/A	7.2 - 8.4kg

* Please note, this value doesn't consider the weight of the earth rails.

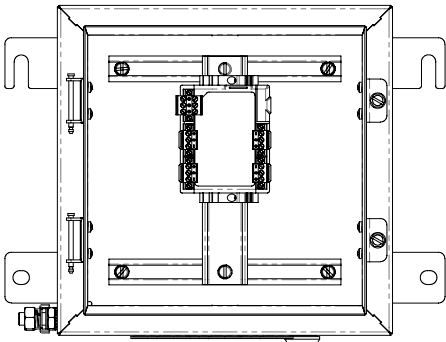
GLANDING ARRANGEMENTS



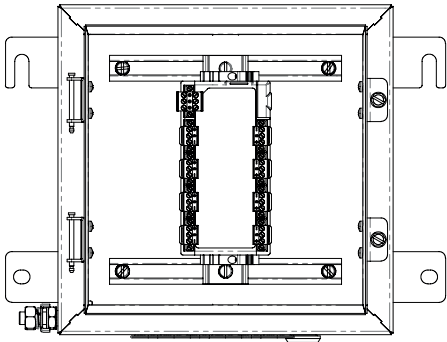
- Notes:
- 1. Bottom left gland indicated in all layouts with letter "T" is to be fitted, with the following exceptions
 - i. Where glanding part no. Includes "020"; no gland fitted
 - ii. Where glanding part no. Includes "X20"; M20 brass Ex eb tb, C1D1 and C1Z1 approved stopping plug fitted.
 - 2. For quantity of glands to be fitted, see part No. glands are to be fitted in the sequence specified on layouts above. Where part no. indicates none are fitted, the glands are to be supplied loose. All empty entries are to be fitted with transit plugs.
 - 3. Unused glanding positions are to be plugged using stopping plugs manufactured from same material as gland specified. Stopping plugs are to be M20, Ex eb tb, C1D1 and C1Z1 approved & group 2 category 2 G&D certified.



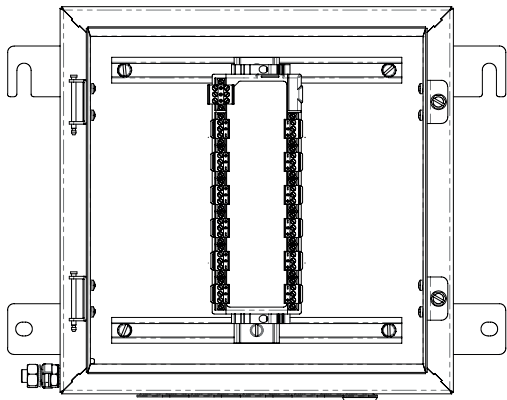
INTERNAL ARRANGEMENTS



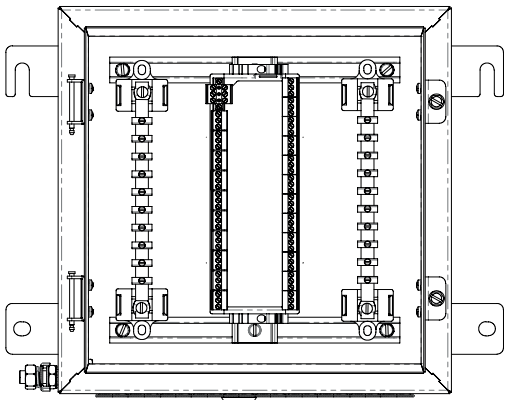
FCS-9604-XX-XX



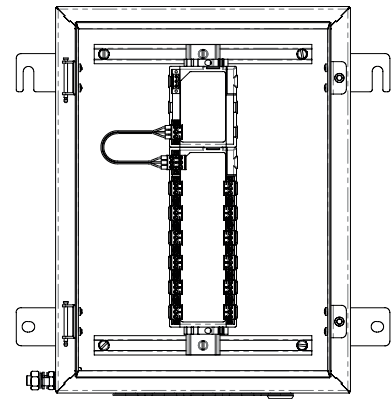
FCS-9608-XX-XX



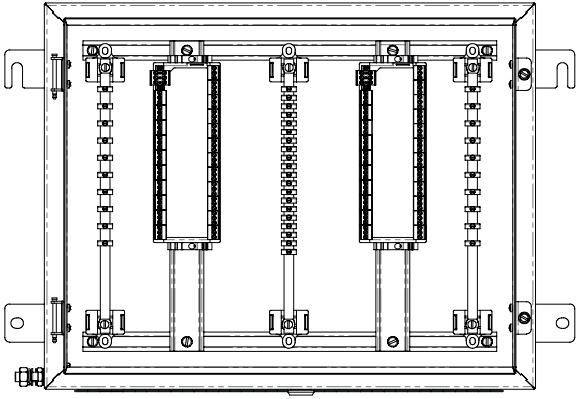
FCS-9612-XX-XX



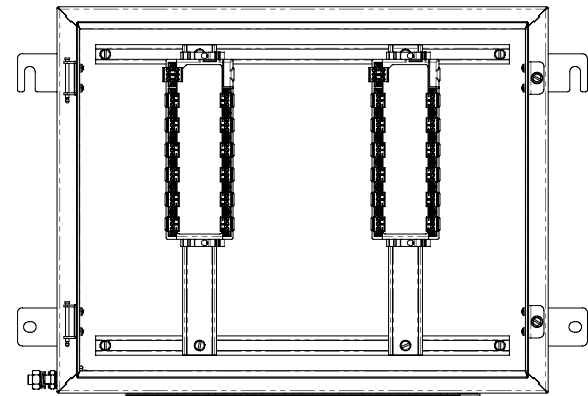
FCS-9616-XX-XX



FCS-9642-XX-XX



FCS-9632-XX-XX



FCS-9624-XX-XX

APPROVALS

Region		Europe	International	N America
Authority		DEKRA	DEKRA	UL
Standard		EN 60079-0 EN 60079-7 EN 60079-31	IEC 60079-0 IEC 60079-7 IEC 60079-31	UL508A Industrial Control Panels CAN/CSA C22.2 No. 14-13 Industrial Control Panels
Approved for		Ⓜ II 2 G Ex e IIC Gb Ⓜ II 2 D Ex tb IIIC Db	Ex e IIC Gb Ex tb IIIC Db	
MTL Part No.	Crouse Hinds Enclosure Part Number	Certificate Numbers		
FCS-9604	XLHS12626159	Baseefa15ATEX0099U	IECEx BAS 15.0071U	20140108-E115376
FCS-9608	XLHS12626159	Baseefa15ATEX0099U	IECEx BAS 15.0071U	20140108-E115376
FCS-9612	XLHS13030150	Baseefa15ATEX0099U	IECEx BAS 15.0071U	20140108-E115376
FCS-9624	XLHX14050150	Baseefa15ATEX0099U	IECEx BAS 15.0071U	20140108-E115376
FCS-9642	XLHS14030150	Baseefa15ATEX0099U	IECEx BAS 15.0071U	20140108-E115376
FCS-9616	XLHS13030200	Baseefa15ATEX0099U	IECEx BAS 15.0071U	20140108-E115376
FCS-9632	XLHS14050200	Baseefa15ATEX0099U	IECEx BAS 15.0071U	20140108-E115376

GLAND OPTION DETAILS

Option	Description	Gland model no.	Cable size mm	Socket size mm	Temp. range	Certification
-A20	Nickel plated brass gland, for steel wired armoured cable M20 Ex d/e double silicone seal	Capri ADE 5F-CAP856695V1	10.0 – 16.0 outer diam. 7.0 – 12.0 inner diam. 0.2 – 1.2 armour	24/24	-60°C to +140°C	IECEx INE 12.0025X INERIS 12ATEX0032X
-R20	Stainless Steel Gland, for Steel Wired Armoured Cable M20 Ex d/e double silicone sea	Capri ADE 5F-CAP856696V1	10.0 – 16.0 outer diam. 7.0 – 12.0 inner diam. 0.2 – 1.2 armour	24/24	-60°C to +140°C	
-C20	Nickel plated brass gland, for un-armoured cable M20, Ex e single silicone seal	Capri ADE 1F2-CAP806695V1	7.0 – 12.0 outer diam.	19/24	-60°C to +140°C	
-S20	Stainless Steel Gland, for un-armoured cable M20, Ex e single silicone seal	Capri ADE 1F2-CAP806696V1	7.0 – 12.0 outer diam.	19/24	-60°C to +140°C	

ORDERING INFORMATION

Part No
FCS-XXXX-YYY-ZZ

Part Number	Description
FCS-9604	Fieldbus JB 4 spur outlets + trunk-in and trunk-out
FCS-9608	Fieldbus JB 8 spur outlets + trunk-in
FCS-9612	Fieldbus JB 12 spur outlets + trunk-in
FCS-9642	Fieldbus JB 12 spur outlets + Ex ic adapter + trunk-in
FCS-9624	Fieldbus JB 24 spur outlets + trunk-in
FCS-9616	Temperature multiplexer JB 16 sensor outlets + data highway (for 1 x MTL831C)
FCS-9632	Temperature multiplexer JB 32 sensor outlets + data highway (for 2 x MTL831C)

- YYY = trunk & spur glanding
- 020 = Predrilled for M20 glands - none fitted
- X20 = Predrilled, with M20 brass 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
- ZZ = **number of spur/sensor outlet glands to be fitted (Only to be used when all cable entries are not required to be fitted with cable glands)**

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-9604-A20-04

An FCS-9604 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.



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