



DOCUMENT CHANGE REQUEST

DCR number 466

Changes required for: N/A

Originator: Olivier Masson

Date: 2009/01/21

Date sent: 2009/01/21

Organisation: CNES

Status: IMPLEMENTED

Title: Accessories for Rectangular Connectors 3401/001 and 3401/002 and Connector Savers 3401/020

Number: 3401/022

Issue: 3

Other documents affected:

Page:

See the details of modifications in red and yellow in the attached document "3401022(draft Issue 4).pdf"

Paragraph:

See the details of modifications in red and yellow in the attached document "3401022(draft Issue 4).pdf"

Original wording:

Proposed wording:

See the details of modifications in red and yellow in the attached document "3401022(draft Issue 4).pdf"

Justification:

Program of re-design of variants 340102217B to 340102243B in progress at C&K.

Reasons for this program are :

- Robustness / quality improvement (monobloc machined backshell)
- delivery lead time improvement (more than 20 weeks currently -> 6 to 8 weeks in the future)
- manufacturing process simplification

Our will is to keep the variants number unchanged :

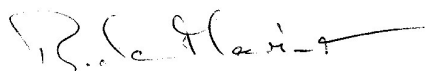
- to avoid nomenclature changes for our customers
- to make sure that will not receive any more orders for old design

Additional qualification test report will be provided before end of february 2009.

Attachments:
3401022(draft_issue_4).pdf, Data-Sheet_Backshells.pdf, null
Modifications:
Approved wording if different from 'Proposed Wording' above or reason for rejection The contents of DCR466 are amended to include the following amendments and additions: 1 - The original drawings for the obsolete versions of Variants 17 to 43 are removed and replaced by drawings of the new design as shown in the original attachment to DCR466. 2 – The change description on the DCN page for DCR466 in the up-issued spec 3401/022 shall include the following information note: Specification updated to incorporate editorial and technical changes per DCR. Note - Changes include modifications to Variants 17 to 43 with respect to their specified mechanical configuration, dimension limits and/or maximum weight. However these Variants remain form, fit and function interchangeable with the obsolete versions they replace. 3 - The current issue of 3401/022 is issue 3 4 - Table 1(a) should also be amended to include the 3 new Variants as follows: Variant 81: Potting Shell; Size E; weight N/A Variant 82: Back-Shell for Strapped Connections; Size E; weight 6.3g Variant 83: Cable Clamp, Straight; Size E; weight 8.3g 5 - Para 2, Amend titles of the specs in (a)(b) and (c) to reflect the actual spec titles. Delete reference to QQ & MIL specs (see comment 6 on Para. 4.4.1 below) 6 - Para 4.4.1. Delete current Para. title & contents to be replaced with the following: 4.4.1 Screw-Lock Assemblies, Potting Shells, Back Shells, Clamps Screw-lock assemblies (brass), potting shells, back shells and clamps shall be made of brass with gold (0.7um minimum) over copper (1um minimum) plating. Screw-lock assemblies (stainless steel) shall be made of passivated stainless steel. 7 - Para 4.5.3.1, add Variants 81 to 83 to the list for magnetism level. ----- Justification for the above amendments are: 1 – Removal of obsolete variants facilitating use of the same variant numbers for the new design accessories which are considered form, fit and function interchangeable with the obsolete versions. 2 – Clarification for users. 3, 4, 5, 7 – Editorial corrections for the purposes of clarity, consistency and completeness. 5, 6 - Definition of the base material and plating is considered sufficient without reference to specific non-ESCC material specifications; It is considered unnecessary to prescribe the actual material specifications to be applied by the Manufacturer (which will be controlled by their PID).

For modified Variants 39 to 43, Right Angle Clamp, in Figure 2(e), replace the figure with the one attached (including addition of new dimension 'D' and correction of dimension 'G')

Approval signature:

A handwritten signature in black ink, appearing to read "V. S. G. H. - 9", is written over a horizontal line.

Date signed:

2009-01-21



Pages 1 to 17

**ACCESSORIES FOR RECTANGULAR CONNECTORS,
3401/001, 3401/002 AND CONNECTOR SAVERS 3401/020**

ESCC Detail Specification No. 3401/022

Issue 4	January 2009
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Document Custodian: European Space Agency - see <https://escies.org>

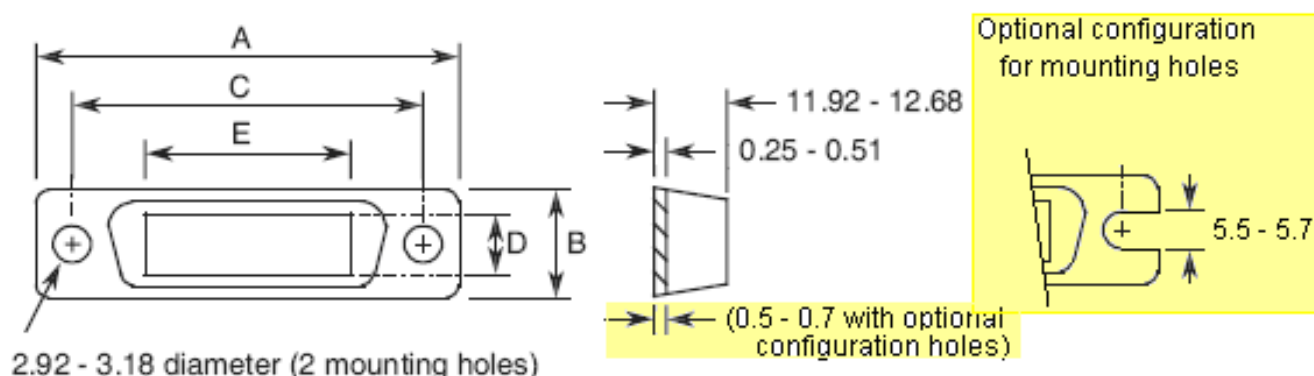
TABLE 1(a) - TYPE VARIANTS

VARIANT	DESCRIPTION		WEIGHT (g)
01	Screw Lock Assembly Brass (Female)		1.9
02	Screw Lock Assembly Brass (Male/slotted head screw)	Without Back Shell	0.85
03	Screw Lock Assembly Brass (Male/slotted head screw)	Without Back Shell	0.85
04	Screw Lock Assembly Brass (Male/slotted head screw)	Without Back Shell	1.0
05	Screw Lock Assembly Brass (Male/slotted head screw)	Without Back Shell	1.0
06	Screw Lock Assembly Brass (Female) for Savers		2.0
07	Dust Cap (Female)	Size E	N/A
08	Dust Cap (Male)	Size E	N/A
09	Dust Cap (Female)	Size A	N/A
10	Dust Cap (Male)	Size A	N/A
11	Dust Cap (Female)	Size B	N/A
12	Dust Cap (Male)	Size B	N/A
13	Dust Cap (Female)	Size C	N/A
14	Dust Cap (Male)	Size C	N/A
15	Dust Cap (Female)	Size D	N/A
16	Dust Cap (Male)	Size D	N/A
17	Potting Shell	Size A	N/A
18	Potting Shell	Size B	N/A
19	Potting Shell	Size C	N/A
20	Potting Shell	Size D	N/A
21	Back-Shell for Strapped Connections	Size A	8.4
22	Back-Shell for Strapped Connections	Size B	11.6
23	Back-Shell for Strapped Connections	Size C	15.5
24	Back-Shell for Strapped Connections	Size D	16.6
25	Cable Clamp, Straight	Size A	10.6
26	Cable Clamp, Straight	Size B	13.7
27	Cable Clamp, Straight	Size C	18.4
28	Cable Clamp, Straight	Size D	19.8
29	Cable Clamp, Round	Size E	9.0
30	Cable Clamp, Round	Size A	11
31	Cable Clamp, Round	Size B	13
32	Cable Clamp, Round	Size C	15
33	Cable Clamp, Round	Size D	16
34	Deep Straight Clamp	Size E	13
35	Deep Straight Clamp	Size A	16.3
36	Deep Straight Clamp	Size B	26.5

VARIANT	DESCRIPTION		WEIGHT (g)
37	Deep Straight Clamp	Size C	35
38	Deep Straight Clamp	Size D	38.5
39	Right Angle Clamp	Size E	14.6
40	Right Angle Clamp	Size A	17.2
41	Right Angle Clamp	Size B	21.4
42	Right Angle Clamp	Size C	33.3
43	Right Angle Clamp	Size D	38.7
44	Screw Lock Assembly Brass (Male/slotted head screw)	With Back Shell	0.85
45	Screw Lock Assembly Brass (Male/slotted head screw)	With Back Shell	0.85
46	Screw Lock Assembly Brass (Male/slotted head screw)	With Back Shell	1.0
47	Screw Lock Assembly Brass (Male/slotted head screw)	With Back Shell	1.0
48	Screw Lock Assembly Stainless Steel (Female)		1.80
49	Screw Lock Assembly Stainless Steel (Male/slotted head screw)	Without Back Shell	0.8
50	Screw Lock Assembly Stainless Steel (Male/slotted head screw)	Without Back Shell	0.8
51	Screw Lock Assembly Stainless Steel (Male/slotted head screw)	Without Back Shell	1.0
52	Screw Lock Assembly Stainless Steel (Male/slotted head screw)	Without Back Shell	1.0
53	Screw Lock Assembly Stainless Steel (Female) for Savers		1.9
54	Screw Lock Assembly Stainless Steel (Male/slotted head screw)	With Back Shell	0.8
55	Screw Lock Assembly Stainless Steel (Male/slotted head screw)	With Back Shell	0.8
56	Screw Lock Assembly Stainless Steel (Male/slotted head screw)	With Back Shell	1.0
57	Screw Lock Assembly Stainless Steel (Male/slotted head screw)	With Back Shell	1.0
58	Screw Lock Assembly Brass (Female) for Feedthrough		2.0
59	Screw Lock Assembly Stainless Steel (Female) for Feedthrough		1.86
60	60° Angled Clamp	Size E	9.0
61	60° Angled Clamp	Size A	11
62	60° Angled Clamp	Size B	12
63	60° Angled Clamp	Size C	15
64	60° Angled Clamp	Size D	16
65	Screw Lock Assembly Brass (male/hex. hole head screw)	Without Back Shell	0.85
66	Screw Lock Assembly Brass (male/hex. hole head screw)	Without Back Shell	0.85
67	Screw Lock Assembly Brass (male/hex. hole head screw)	Without Back Shell	1.0
68	Screw Lock Assembly Brass (male/hex. hole head screw)	Without Back Shell	1.0

VARIANT	A		B		C		D	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
10	27.1	27.7	25.4	26.0	10.2	10.8	8.5	9.1
11	39.4	40.0	37.7	38.3	8.9	9.5	7.2	7.8
12	41.2	41.8	39.5	40.1	10.2	10.8	8.9	9.6
13	55.8	56.4	54.1	54.7	8.9	9.5	7.2	7.8
14	57.6	58.2	56.0	56.0	10.2	10.8	8.9	9.6
15	53.4	54.0	51.7	52.3	11.7	12.3	10.0	10.6
16	55.0	55.6	53.3	53.9	13.3	13.9	11.6	12.2

FIGURE 2(c)- POTTING SHELLS (All dimension in millimetres)

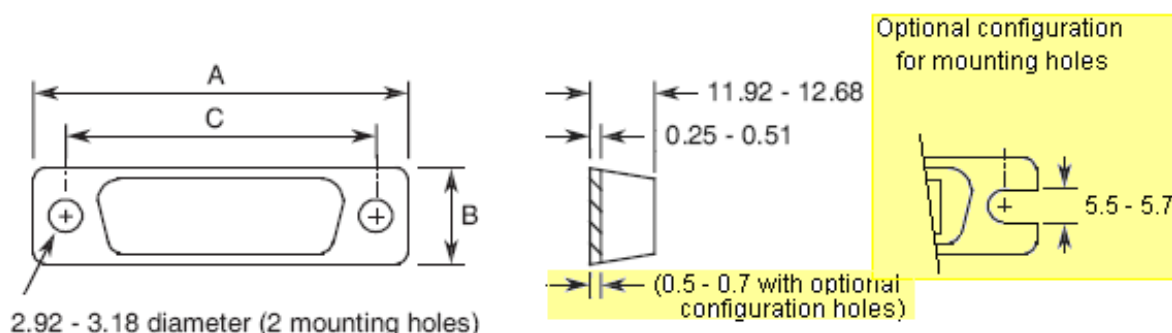


NOTES:

- Weight: Not applicable because not on board.

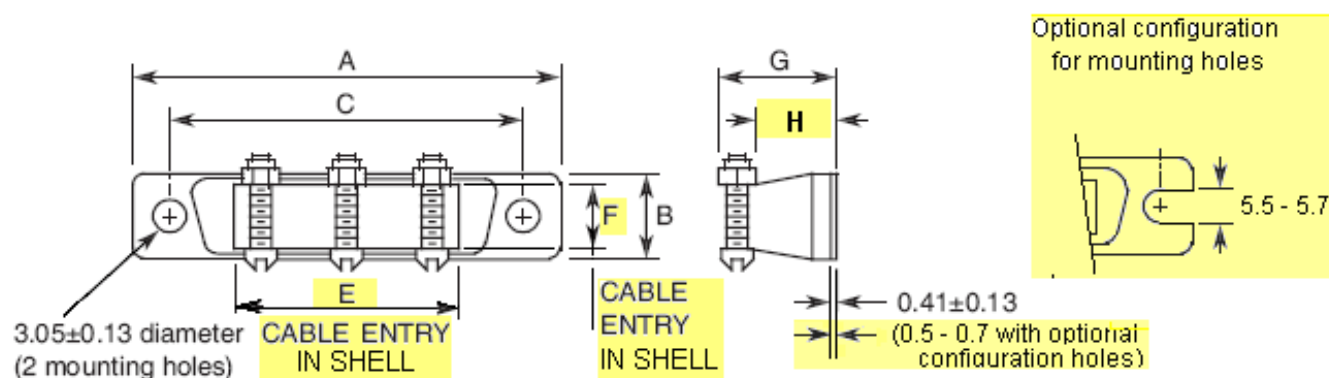
VARIANT	A		B		C		D		E	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
TBD	30.32	31.08	12.32	13.08	24.74	25.24	7.1	8.1	8.48	9.52
17	38.51	39.27	12.32	13.08	33.08	33.58	7.1	8.1	14.4	15.44
18	52.4	53.16	12.32	13.08	46.79	47.29	7.1	8.1	28.0	29.08
19	68.66	69.42	12.32	13.08	63.25	63.75	7.1	8.1	43.94	45.0
20	66.29	67.05	15.09	15.85	60.86	61.36	9.4	10.4	43.94	45.0

FIGURE 2(d) - BACK SHELLS (FOR STRAPPED CONNECTIONS) (All dimensions in millimetres)



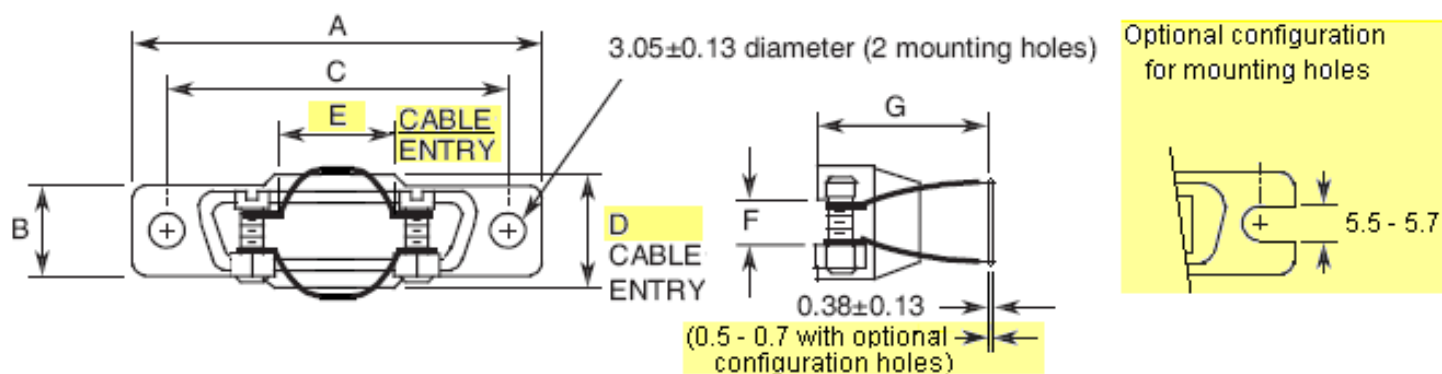
VARIANT	A		B		C	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
TBD	30.32	31.08	12.32	13.08	24.74	25.24
21	38.51	39.27	12.32	13.08	33.08	33.58
22	52.4	53.16	12.32	13.08	46.79	47.29
23	68.66	69.42	12.32	13.08	63.25	63.75
24	66.29	67.05	15.09	15.85	60.86	61.36

FIGURE 2(e) - CABLE CLAMPS (All dimensions in millimetres)
STRAIGHT CLAMP



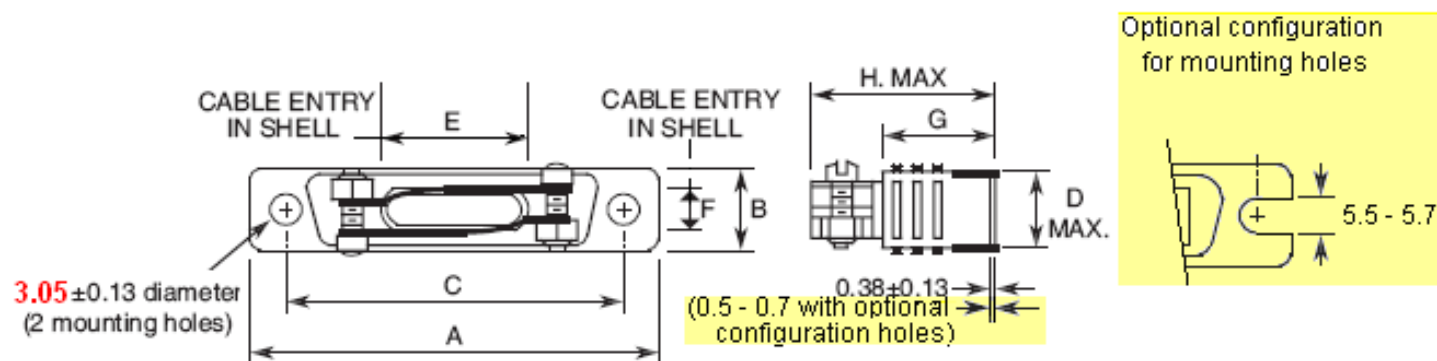
VARIANT	No. of Cable Locking Screws Required	A		B		C		E		F		G		H	
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
TBD	2	30.32	31.08	12.32	13.08	24.74	25.24	10.62	11.38	7.12	7.88	15.7	16.7	10.32	11.08
25	2	38.51	39.27	12.32	13.08	33.08	33.58	18.62	19.38	7.12	7.88	15.7	16.7	10.32	11.08
26	2	52.4	53.16	12.32	13.08	46.79	47.29	31.62	32.38	7.12	7.88	15.7	16.7	10.32	11.08
27	3	68.66	69.42	12.32	13.08	63.25	63.75	47.62	48.38	7.12	7.88	15.7	16.7	10.32	11.08
28	3	66.29	67.05	15.09	15.85	60.86	61.36	45.62	46.38	9.52	10.28	17.3	18.3	11.92	12.68

ROUND CLAMP



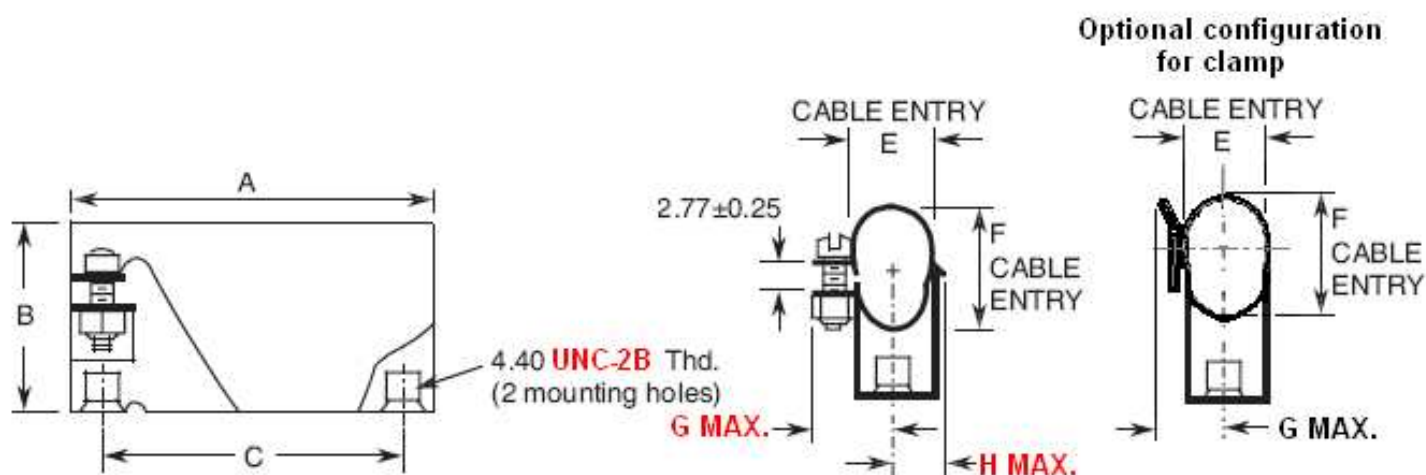
VARIANT	A		B		C		D		E		F		G	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
29	30.32	31.08	12.32	13.08	24.74	25.24	10.12	10.88	10.12	10.88	2.82	3.58	25.4	27.0
30	38.51	39.27	12.32	13.08	33.08	33.58	10.72	11.48	10.72	11.48	2.82	3.58	25.4	27.0
31	52.40	53.16	12.32	13.08	46.79	47.29	10.72	11.48	17.72	18.48	4.32	5.08	26.2	27.8
32	68.66	69.42	12.32	13.08	63.25	63.75	10.72	11.48	24.72	25.48	5.92	6.73	26.2	27.8
33	66.29	67.05	15.09	15.85	60.86	61.36	13.62	14.28	26.52	27.28	7.52	8.28	26.2	27.8

DEEP STRAIGHT CLAMP



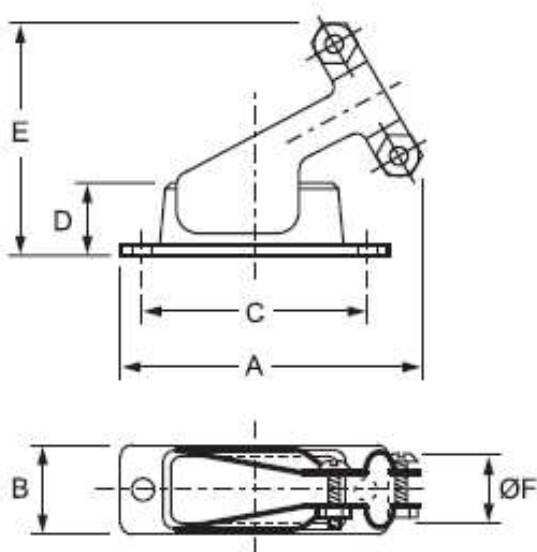
VARIANT	A		B		C		D	E		F		G		H
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MAX.
34	30.32	31.08	12.32	13.08	24.74	25.24	14.7	10.62	11.38	7.12	7.88	18.62	19.38	31.7
35	38.51	39.27	12.32	13.08	33.08	33.58	14.7	18.62	19.38	7.12	7.88	18.62	19.38	31.7
36	52.40	53.16	12.32	13.08	46.79	47.29	14.7	31.62	32.38	7.12	7.88	25.02	25.78	39.7
37	68.66	69.42	12.32	13.08	63.25	63.75	14.7	47.62	48.38	7.12	7.88	25.02	25.78	39.7
38	66.29	67.05	15.09	15.85	60.86	61.36	17.4	45.62	46.38	9.52	10.28	28.22	28.98	42.9

RIGHT ANGLE CLAMP



VARIANT	A		B		C		E		F		G		H	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
39	30.32	31.08	17.4	19.0	24.74	25.24	10.3	11.9	10.3	11.9	—	12.7	—	7.9
40	38.51	39.27	17.4	19.0	33.08	33.58	10.3	11.9	10.3	11.9	—	12.7	—	7.9
41	52.40	53.16	23.8	25.4	46.79	47.29	10.3	11.9	15.1	16.7	—	12.7	—	7.9
42	68.66	69.42	29.3	30.9	63.25	63.75	10.3	11.9	19.8	21.4	—	12.7	—	7.9
43	66.29	67.05	30.9	32.5	60.86	61.36	13.5	15.1	22.3	23.9	—	14.3	—	9.5

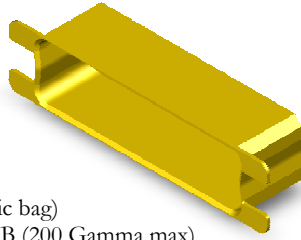
60° ANGLED CLAMP



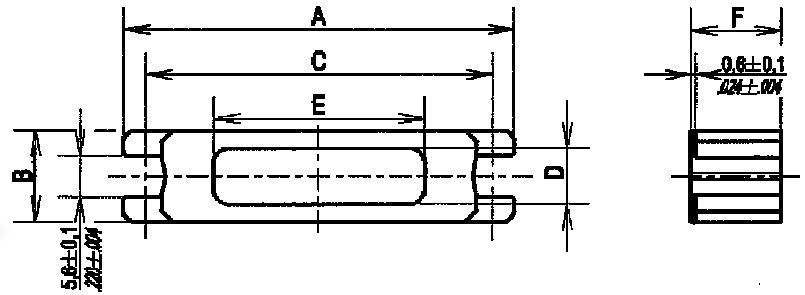
VARIANT	A	B	C	D	E	ØF
60	39.00	1.270	24.99	12.30	30.60	10.00

Potting Shell (rear open)

Max weight (grams) :
N.A. (not on board)



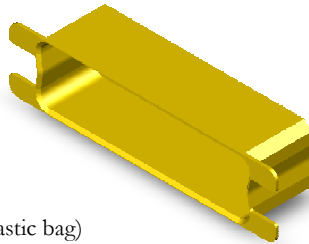
Packaging unit : 1 piece (plastic bag)
Residual magnetism level NMB (200 Gamma max)



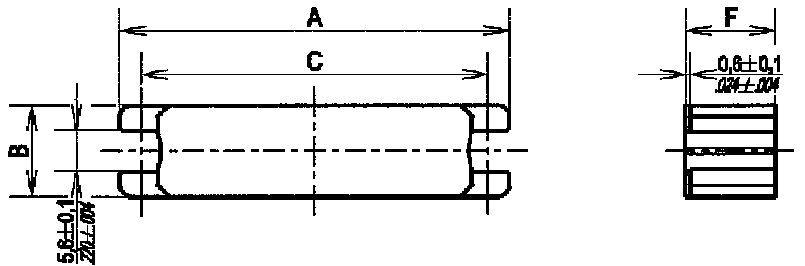
Shell Size	ESA/ESCC Variant	A ± 0,38 (.015)	B ± 0,38 (.015)	C ± 0,13 (.005)	D ± 0,50 (.020)	E ± 0,50 (.020)	F ± 0,38 (.015)
E	New	30,70 (1.208)	12,70 (.500)	24,99 (.984)	7,60 (.300)	9,00 (.354)	12,30 (.484)
A	17	38,89 (1.531)	12,70 (.500)	33,32 (1.312)	7,60 (.300)	14,92 (.587)	12,30 (.484)
B	18	52,78 (2.078)	12,70 (.500)	47,04 (1.852)	7,60 (.300)	28,54 (1.124)	12,30 (.484)
C	19	69,04 (2.718)	12,70 (.500)	63,50 (2.500)	7,60 (.300)	44,47 (1.751)	12,30 (.484)
D	20	66,67 (2.625)	15,47 (.609)	61,12 (2.406)	9,90 (.390)	44,47 (1.751)	12,30 (.484)

Switching Shell (rear closed)

Max weight (grams)
Size E : 6,3
Size A : 8,4
Size B : 11,6
Size C : 15,5
Size D : 16,6



Packaging unit : 1 piece (plastic bag)
Residual magnetism level NMB (200 Gamma max)



Shell Size	ESA/ESCC Variant	A ± 0,38 (.015)	B ± 0,38 (.015)	C ± 0,13 (.005)	F ± 0,38 (.015)
E	New	30,70 (1.208)	12,70 (.500)	24,99 (.984)	12,30 (.484)
A	21	38,89 (1.531)	12,70 (.500)	33,32 (1.312)	12,30 (.484)
B	22	52,78 (2.078)	12,70 (.500)	47,04 (1.852)	12,30 (.484)
C	23	69,04 (2.718)	12,70 (.500)	63,50 (2.500)	12,30 (.484)
D	24	66,67 (2.625)	15,47 (.609)	61,12 (2.406)	12,30 (.484)

Cross References

Type	Size	ESA/ESCC Quality Level		FR023 Quality Level		FR022 Quality Level	
		Description	Part Number	Description	Part Number	Description	Part Number
Potting shell	E	3401022xxB NMB					
	A	340102217B NMB					
	B	340102218B NMB					
	C	340102219B NMB					
	D	340102220B NMB					
Switching shell	E	3401022xxB NMB					
	A	340102221B NMB					
	B	340102222B NMB					
	C	340102223B NMB					
	D	340102224B NMB					

Straight Clamp

Max weight (grams) :

Size E : 8,5

Size A : 10,6

Size B : 13,7

Size C : 18,4

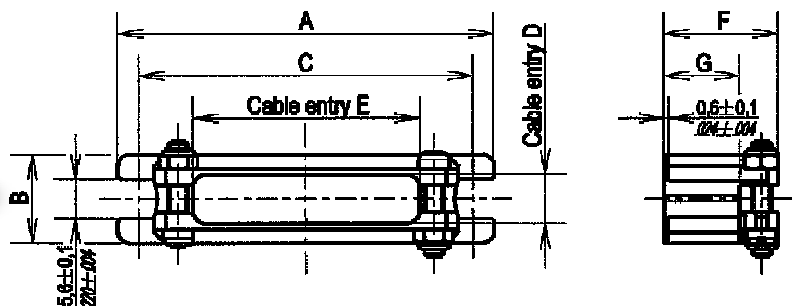
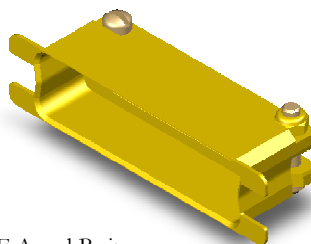
Size D : 19,8

Number of screws : 2 for E,A and B sizes

3 for C and D sizes

Packaging unit : 1 piece (plastic bag)

Residual magnetism level NMB (200 Gamma max)



Shell Size	ESA/ESCC Variant	A ± 0,38 (.015)	B ± 0,38 (.015)	C ± 0,13 (.005)	D ± 0,38 (.015)	E ± 0,38 (.015)	F ± 0,38 (.015)	G ± 0,38 (.015)
E	New	30,70 (1.208)	12,70 (.500)	24,99 (.984)	7,50 (.295)	11,00 (.433)	16,20 (.638)	10,70 (.421)
A	25	38,89 (1.531)	12,70 (.500)	33,32 (1.312)	7,50 (.295)	19,00 (.748)	16,20 (.638)	10,70 (.421)
B	26	52,78 (2.078)	12,70 (.500)	47,04 (1.852)	7,50 (.295)	32,00 (1.260)	16,20 (.638)	10,70 (.421)
C	27	69,04 (2.718)	12,70 (.500)	63,50 (2.500)	7,50 (.295)	48,00 (1.890)	16,20 (.638)	10,70 (.421)
D	28	66,67 (2.625)	15,47 (.609)	61,12 (2.406)	9,88 (.389)	46,00 (1.811)	17,80 (.700)	12,30 (.484)

Round Clamp

Max weight (grams) :

Size E : 8,9

Size A : 9,5

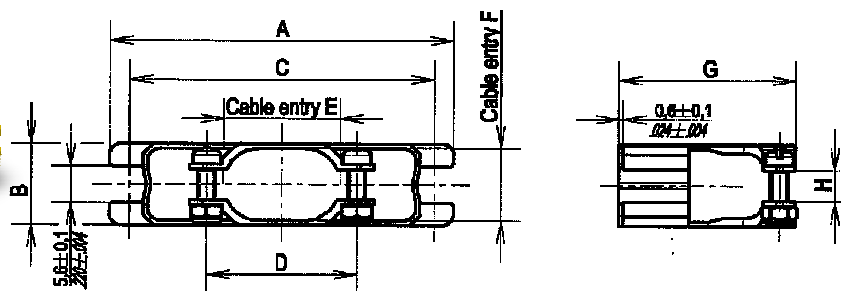
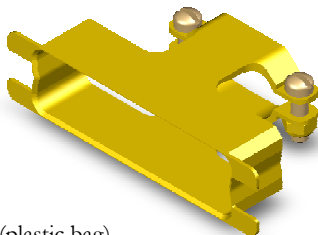
Size B : 12,3

Size C : 14,8

Size D : 15,2

Packaging unit : 1 piece (plastic bag)

Residual magnetism level NMB (200 Gamma max)



Shell Size	ESA/ESCC Variant	A ± 0,38 (.015)	B ± 0,38 (.015)	C ± 0,13 (.005)	D ± 0,38 (.015)	E ± 0,38 (.015)	F ± 0,38 (.015)	G ± 0,38 (.015)	H ± 0,13 (.005)
E	29	30,70 (1.208)	12,70 (.500)	24,99 (.984)	17,80 (.701)	10,50 (.413)	10,50 (.413)	26,20 (1.031)	3,20 (.126)
A	30	38,89 (1.531)	12,70 (.500)	33,32 (1.312)	17,80 (.701)	11,10 (.437)	11,10 (.437)	26,20 (1.031)	3,20 (.126)
B	31	52,78 (2.078)	12,70 (.500)	47,04 (1.852)	23,30 (.917)	18,10 (.713)	11,10 (.437)	27,00 (1.063)	4,70 (.185)
C	32	69,04 (2.718)	12,70 (.500)	63,50 (2.500)	29,70 (1.169)	25,10 (.988)	11,10 (.437)	27,00 (1.063)	6,30 (.248)
D	33	66,67 (2.625)	15,47 (.609)	61,12 (2.406)	30,90 (1.217)	26,90 (1.059)	13,90 (.547)	27,00 (1.063)	7,90 (.311)

Cross References

Type	Size	ESA/ESCC Quality Level		FR023 Quality Level		FR022 Quality Level	
		Description	Part Number	Description	Part Number	Description	Part Number
Straight clamp	E	3401022xxB NMB					
	A	340102225B NMB					
	B	340102226B NMB					
	C	340102227B NMB					
	D	340102228B NMB					
Round clamp	E	340102229B NMB					
	A	340102230B NMB					
	B	340102231B NMB					
	C	340102232B NMB					
	D	340102233B NMB					

Deep Straight Clamp

Max weight (grams) :

Size E : 13

Size A : 16,3

Size B : 26,5

Size C : 35

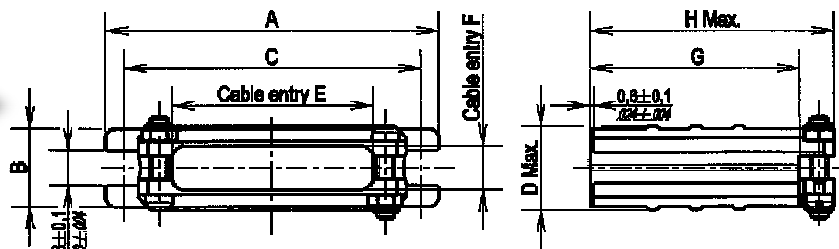
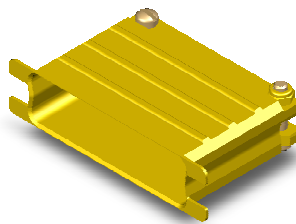
Size D : 38,5

Number of screws : 2 for E,A and B sizes

3 for C and D sizes

Packaging unit : 1 piece (plastic bag)

Residual magnetism level NMB (200 Gamma max)



Shell Size	ESA/ESC C Variant	A ± 0,38 (.015)	B ± 0,38 (.015)	C ± 0,13 (.005)	D Max.	E ± 0,38 (.015)	F ± 0,38 (.015)	G ± 0,38 (.015)	H Max.
E	34	30,70 (1.208)	12,70 (.500)	24,99 (.984)	14,70 (.579)	11,00 (.433)	7,50 (.295)	19 (.748)	31,70 (1.248)
A	35	38,89 (1.531)	12,70 (.500)	33,32 (1.312)	14,70 (.579)	19,00 (.748)	7,50 (.295)	19 (.748)	31,70 (1.248)
B	36	52,78 (2.078)	12,70 (.500)	47,04 (1.852)	14,70 (.579)	32,00 (1.260)	7,50 (.295)	25,40 (1.000)	39,70 (1.563)
C	37	69,04 (2.718)	12,70 (.500)	63,50 (2.500)	14,70 (.579)	48,00 (1.890)	7,50 (.295)	25,40 (1.000)	39,70 (1.563)
D	38	66,67 (2.625)	15,47 (.609)	61,12 (2.406)	17,40 (.685)	46,00 (1.811)	9,88 (.389)	28,60 (1.126)	42,90 (1.689)

90° Entry

Max weight (grams) :

Size E : 14,6

Size A : 17,2

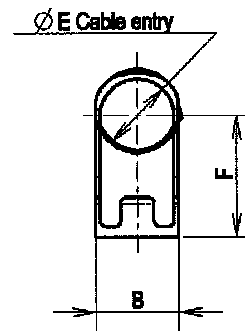
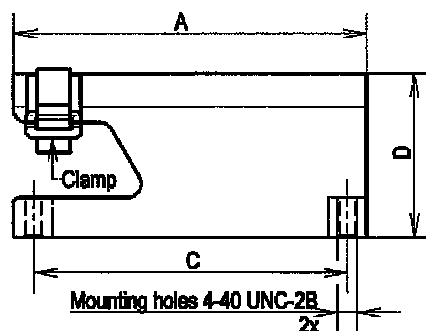
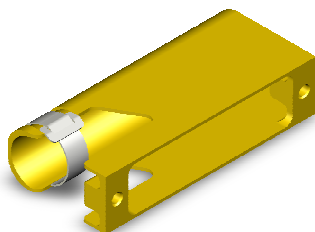
Size B : 21,4

Size C : 33,3

Size D : 38,7

Packaging unit : 1 piece with 1 clamp (plastic bag)

Residual magnetism level NMB (200 Gamma max)



Shell Size	ESA/ESC C Variant	A ± 0,38 (.015)	B ± 0,38 (.015)	C ± 0,13 (.005)	D ± 0,25 (.010)	E ± 0,38 (.015)	F ± 0,38 (.015)
E	39	30,70 (1.208)	12,70 (.500)	24,99 (.984)	18,20 (.716)	11,10 (.437)	11,85 (.466)
A	40	38,89 (1.531)	12,70 (.500)	33,32 (1.312)	18,20 (.716)	11,10 (.437)	11,85 (.466)
B	41	52,78 (2.078)	12,70 (.500)	47,04 (1.852)	24,60 (.968)	11,10 (.437)	18,25 (.718)
C	42	69,04 (2.718)	12,70 (.500)	63,50 (2.500)	30,20 (1.189)	11,10 (.437)	23,85 (.939)
D	43	66,67 (2.625)	15,47 (.609)	61,12 (2.406)	31,70 (1.248)	13,90 (.547)	23,95 (.943)

Cross References

Type	Size	ESA/ESCC Quality Level		FR023 Quality Level		FR022 Quality Level	
		Description	Part Number	Description	Part Number	Description	Part Number
Deep, straight clamp	E	340102234B NMB					
	A	340102235B NMB					
	B	340102236B NMB					
	C	340102237B NMB					
	D	340102238B NMB					
90° entry	E	340102239B NMB					
	A	340102240B NMB					
	B	340102241B NMB					
	C	340102242B NMB					
	D	340102243B NMB					