coding positions for CQ 12 connector

Key position (M insert side)	Key position (F insert side)	View (M insert side)	View (M insert side)	View (F insert side)	View (F insert side)
A	**B**	**A**	**B**	**B**	**A**
1	1	◥	◥	◤	◤
1	2	◥	◤	◥	◤
1	3	◥	◣	◢	◤
1	4	◥	◢	◣	◤
2	1	◤	◥	◤	◥
2	2	◤	◤	◥	◥
2	3	◤	◣	◢	◥
2	4	◤	◢	◣	◥
3	1	◣	◥	◤	◢
3	2	◣	◤	◥	◢
3	3	◣	◣	◢	◢
3	4	◣	◢	◣	◢
4	1	◢	◥	◤	◣
4	2	◢	◤	◥	◣
4	3	◢	◣	◢	◣
4	4	◢	◢	◣	◣

enclosures:
size "21.21"   page:

inserts, crimp connections

10A crimp contacts
silver and gold plated

description	part No.	part No.	part No.

without contacts (to be ordered separately)
female inserts for female contacts   **CQF 12**
male inserts for male contacts   **CQM 12**

10A female contacts
0.14-0.37 mm²	AWG 26-22	identification No. 1		
0.5 mm²	AWG 20	identification No. 2	**CDFA 0.3**	**CDFD 0.3**
0.75 mm²	AWG 18	identification No. ②	**CDFA 0.5**	**CDFD 0.5**
1 mm²	AWG 18	identification No. 3	**CDFA 0.7**	**CDFD 0.7**
1.5 mm²	AWG 16	identification No. 4	**CDFA 1.0**	**CDFD 1.0**
2.5 mm²	AWG 14	identification No. 5	**CDFA 1.5**	**CDFD 1.5**
			CDFA 2.5	**CDFD 2.5**

silver plated / *gold plated*

10A male contacts
0.14-0.37 mm²	AWG 26-22	identification No. 1	**CDMA 0.3**	**CDMD 0.3**
0.5 mm²	AWG 20	identification No. 2	**CDMA 0.5**	**CDMD 0.5**
0.75 mm²	AWG 18	identification No. ②	**CDMA 0.7**	**CDMD 0.7**
1 mm²	AWG 18	identification No. 3	**CDMA 1.0**	**CDMD 1.0**
1.5 mm²	AWG 16	identification No. 4	**CDMA 1.5**	**CDMD 1.5**
2.5 mm²	AWG 14	identification No. 5	**CDMA 2.5**	**CDMD 2.5**

- characteristics according to EN 61984:
  10A 400V 6kV 3
  10A 400/690V 6kV 2
- cUL (UL for USA and Canada), CCC, GL, GOST certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- the CQ 12 inserts are already supplied with a seal and a screw, which ensure IP66/IP67 protection rating
- for contact crimping instructions, please see the crimping tool section (10A contacts, CDF and CDM series) on pages 466, 470, 480, 482, 484, 486
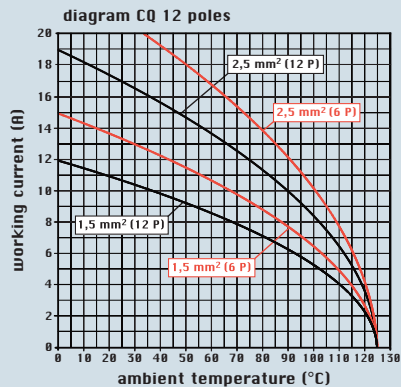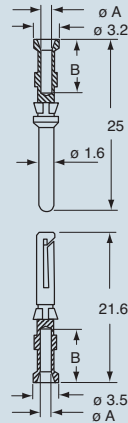- for maximum current load, see the following load curves inserts, for more information see page 494

dimensions in mm

dimensions in mm

ø A
ø 3.2
B
25
ø 1.6
21.6
B
ø 3.5
ø A

21   21   M

F
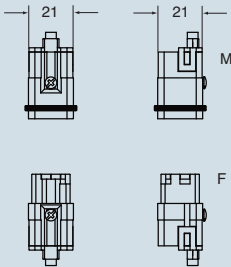
contacts side (front view)

F   M

◪   the CR Q12 coding pins (to be ordered separately), allow the user to create 16 different combinations, according to the diagram shown on page 431

diagram CQ 12 poles

working current (A) vs ambient temperature (°C)

2,5 mm² (12 P)
2,5 mm² (6 P)
1,5 mm² (12 P)
1,5 mm² (6 P)

CDF and CDM contacts

conductor section	conductor slot	conductors stripping length
mm²	ø A (mm)	B (mm)
0.14-0.37	0.9	8
0.5	1.1	8
0.75	1.3	8
1.0	1.45	8
1.5	1.8	8
2.5	2.2	6

dimensions shown are not binding
and may be changed without notice

CQ

enclosures:
size "21.21"   page:

insulating type .... 201 - 202
metallic type .... 203 - 205
aggressive environments 325
EMC 343
IP68 .... 372 - 373

- inserts and enclosures for applications with temperatures up to 180 °C, available on request
- can also be used partially fitted with 4 mm² section contacts
- for contact crimping instructions, please see the crimping tool section (16A contacts, CCF, CCM and CC...AN series) on pages 466, 470, 480, 482, 484, 486
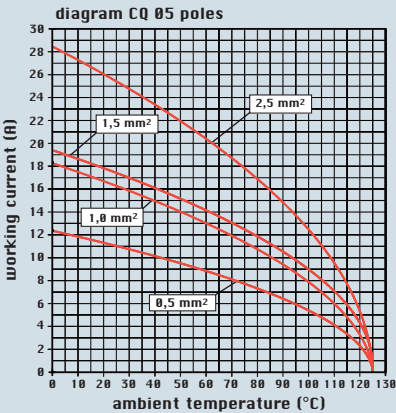
inserts, crimp connections

16A crimp contacts
normal and for advanced opening
silver and gold plated

CQ

description	part No.	part No.	part No.
without contacts (to be ordered separately) female inserts for female contacts male inserts for male contacts	**CQF 05** **CQM 05**		

16A female contacts					
0.14-0.37 mm²	AWG 26-22	three grooves	**CCFA 0.3**	silver plated	**CCFD 0.3**
0.5 mm²	AWG 20	with no grooves	**CCFA 0.5**		**CCFD 0.5**
0.75 mm²	AWG 18	one groove (back side)	**CCFA 0.7**		**CCFD 0.7**
1 mm²	AWG 18	one groove	**CCFA 1.0**		**CCFD 1.0**
1.5 mm²	AWG 16	two grooves	**CCFA 1.5**		**CCFD 1.5**
2.5 mm²	AWG 14	three grooves	**CCFA 2.5**		**CCFD 2.5**
3 mm²	AWG 12	one wide groove	**CCFA 3.0**		**CCFD 3.0**
4 mm²	AWG 12	with no grooves	**CCFA 4.0**		**CCFD 4.0**
16A male contacts					
0.14-0.37 mm²	AWG 26-22	three grooves	**CCMA 0.3**		**CCMD 0.3**
0.5 mm²	AWG 20	with no grooves	**CCMA 0.5**		**CCMD 0.5**
0.75 mm²	AWG 18	one groove (back side)	**CCMA 0.7**		**CCMD 0.7**
1 mm²	AWG 18	one groove	**CCMA 1.0**		**CCMD 1.0**
1.5 mm²	AWG 16	two grooves	**CCMA 1.5**	gold plated	**CCMD 1.5**
2.5 mm²	AWG 14	three grooves	**CCMA 2.5**		**CCMD 2.5**
3 mm²	AWG 12	one wide groove	**CCMA 3.0**		**CCMD 3.0**
4 mm²	AWG 12	with no grooves	**CCMA 4.0**		**CCMD 4.0**

16A male crimp contacts for advanced opening				
0.5 mm²	AWG 20	with no grooves	**CC 0.5 AN**	
0.75 mm²	AWG 18	one groove (back side)	**CC 0.7 AN**	
1 mm²	AWG 18	one groove	**CC 1.0 AN**	
1.5 mm²	AWG 16	two grooves	**CC 1.5 AN**	
2.5 mm²	AWG 14	three grooves	**CC 2.5 AN**	

- characteristics according to EN 61984:
  16A 230/400V 4kV 3
  16A 320/500V 4kV 2
- UL, CSA, CCC, GL, GOST certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- are made of self-extinguishing thermoplastic resin UL 94 V0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for maximum current load, see the following load curves inserts, for more information see page 494

diagram CQ 05 poles

working current (A) vs ambient temperature (°C)

curves labelled: 2,5 mm² 1,5 mm² 1,0 mm² 0,5 mm²

dimensions in mm

21   21   M

F

contacts side (front view)

F   M

coding pins CR CPQ, see page 431
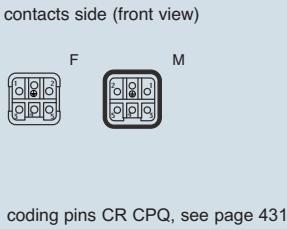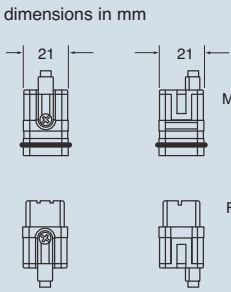
dimensions in mm

CCF and CCM

ø A
ø 4.5
7.5
25
ø 2.5

22.2
7.5
ø 4.5
ø A

CC...AN

ø A
ø 4.5
7.5
22.8
ø 2.5

CCF, CCM and CC..AN contacts

conductor section	conductor slot	conductors stripping length
mm²	ø A (mm)	(mm)
0.14-0.37	0.9	7.5
0.5	1.1	7.5
0.75	1.3	7.5
1.0	1.45	7.5
1.5	1.8	7.5
2.5	2.2	7.5
3	2.55	7.5
4	2.85	7.5

dimensions shown are not binding and may be changed without notice

ENCLOSURE CHARACTERISTICS

Series	Locking device	Variant	IP (EN 60529) [2]	UL 50 Type (NEMA 250 Type)	Environmental temperature range	from page
CK/MK	single		IP44	12	-40 °C ÷ +125 °C	201
		with CKR 65 (D)	IP66/IP67, IP69K [3]	12, 4, 4X	-40 °C ÷ +125 °C	
CKA/MKA CKAX/MKAX	single		IP44	12	-40 °C ÷ +125 °C	203
		with CKR 65 (D)	IP66/IP67, IP69K [3]	12, 4, 4X	-40 °C ÷ +125 °C	
CKG/MKG CKAG/MKAG	single	for CXL, CJ K and CX 1/2 BD inserts	IP66/IP67, IP69K [3]	12, 4, 4X	-40 °C ÷ +125 °C	459
CGK/MGK	screw		IP68, IP69K [3]		-40 °C ÷ +125 °C	372
CQ	single	with conductive gasket	IP66/IP67, IP69K [3]		-40 °C ÷ +125 °C	206
CZ/MZ	single		IP66, IP69K [3]	12, 4, 4X	-40 °C ÷ +125 °C	208
	dual					
CH, CA/MH,	single		IP66, IP69K [3]	12, 4, 4X [4]	-40 °C ÷ +125 °C (R -40 °C ÷ 180 °C)	215
	dual					
T-TYPE	single		IP65	12	-40 °C ÷ +90 °C	282
	dual					
V-Type IP67	single (44.27)		IP67, IP69K [3]	12, 4, 4X [4]	-40 °C ÷ +125 °C	254
	dual (57.27, 77.27 104.27)					
V-Type IP66	single		IP66, IP69K [3]	12, 4, 4X [4]	-40 °C ÷ +125 °C	262
JEI	single		IP66		-40 °C ÷ +125 °C	288
	dual					
BIG enclosures	single (44.27)		IP66		-40 °C ÷ +125 °C	304
	dual (57.77, 77.27 104.27)					
CG/MG	screw or bayonet		IP66, IP68, IP69K [3]	12, 4, 4X	-40 °C ÷ +125 °C	372
Central Lever	single central lever		IP65		-40 °C ÷ +125 °C	360
COB	dual		IP20		-40 °C ÷ +125 °C	410

[2] the enclosures ensure IP protection rating when coupled and locked with the locking lever. The cover (CS, CP) only provides mechanical protection without ensuring the protection rating

C-TYPE
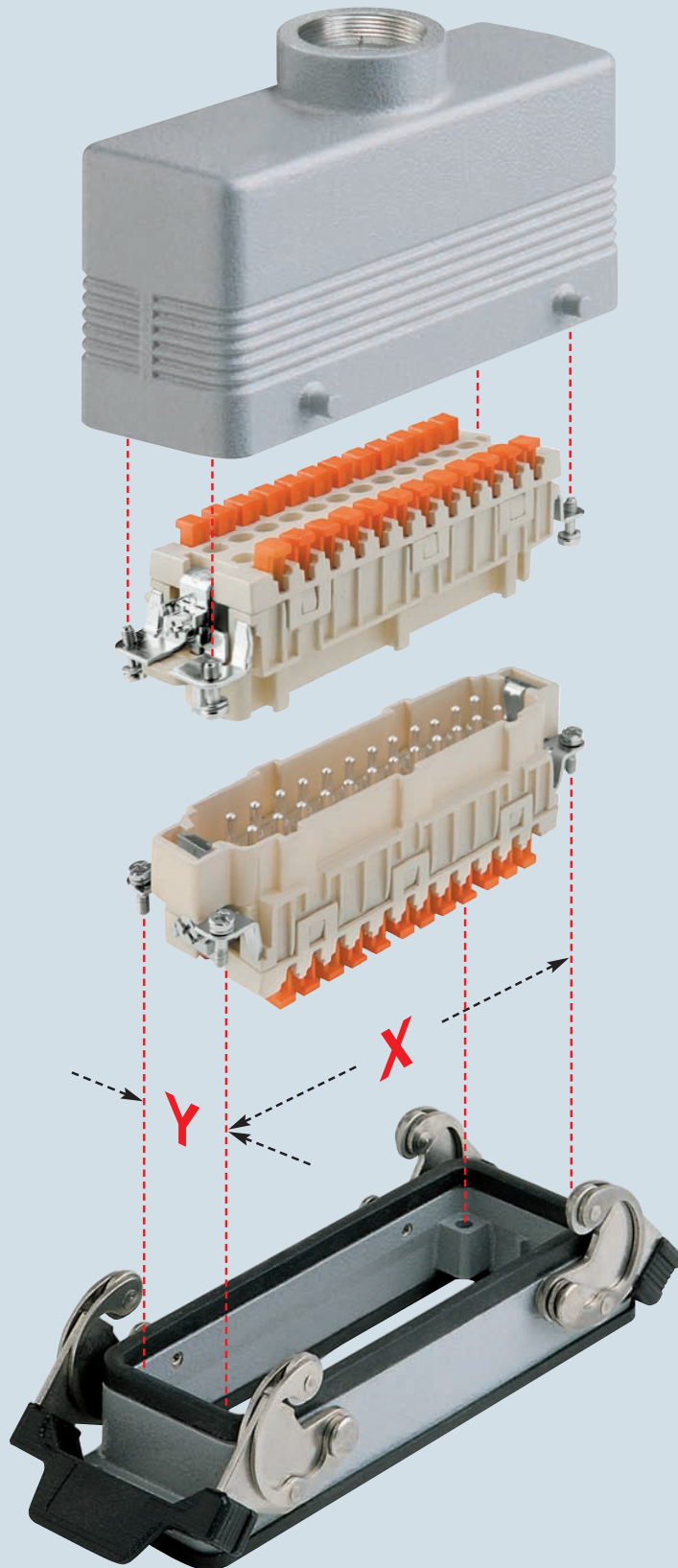
Identification of enclosures

Connector inserts and their enclosures are numerous and therefore the search for the correct pairing of one with another can be complex.

To facilitate this operation (in addition to the normal part number) the definition of "**size**" has been introduced in this catalogue.

As indicated in the illustration on the left and in the table below the size value refers to the screw fixing centre distances which constitute a unique element since they are common to both the inserts and the enclosures.

All the pages that illustrate combinable articles (inserts and enclosures) carry references as per the examples illustrated on the opposite page.

Following is a table that shows all the sizes of the enclosures and the dimensions of the housings where the inserts will be fastened.

enclosures size	insert housing with screw fixing centre distance x-y
"21.21"	(21 x 21 mm) **
"32.13"	32 x 13 mm
"49.16"	49.5 x 16 mm
"66.16"	66 x 16 mm
"66.40"	66 x 16 mm (2 inserts)
"44.27"	44 x 27 mm
"57.27"	57 x 27 mm
"77.27"	77.5 x 27 mm
"104.27"	104 x 27 mm
"77.62"	77.5 x 27 mm (2 inserts)
"104.62"	104 x 27 mm (2 inserts)

** dimensions relating to the insert cross-section size not being able to identify a screw fixing centre distance since provided with a single screw.

X

Y

inserts:		page
CK .... 3 poles + ⊕		40
CK .... 4 poles + ⊕		40
CKS .... 3 poles + ⊕		41
CKS .... 4 poles + ⊕		41
CD .... 7 poles + ⊕		45
CD .... 8 poles		46
CQ .... 5 poles + ⊕		69
CQ .... 12 poles + ⊕		68

insert dimensions:
21 x 21 mm

bulkhead mounting housings

angled bulkhead mounting housings

C-TYPE - size 21.21

description	part no.	part no. (entry - Pg 11)	part no. (entry - M 20)
with lever with lever	**CK 03 I** (white) **CK 03 IN** (black)		
without cable gland entry, with lever without cable gland entry, with lever		**CK 03 IA** (white) **CK 03 IAN** (black)	
with cable gland entry and lever with cable gland entry and lever		**CK 03 IAPS** (white) **CK 03 IAPNS** (black)	**MK IAP20** (white) **MK IAPN20** (black)
gasket and screw kit for IP66/IP67 [1] for CK, CQ 05, CKS inserts	**CKR 65**	**CKR 65**	
gasket and screw kit for IP66/IP67 [1] for CD 07/08 inserts	**CKR 65 D**	**CKR 65 D**	

panel cut-out for enclosures, in mm
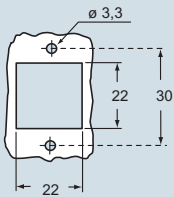
ø 3,3
22   30
22

dimensions in mm

CK I(N)

52,5
32
25
30
Ø 3,3

dimensions in mm

CK IA(N)

42,5
47,5
41,5
30
Ø 3,3

1) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example)
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating
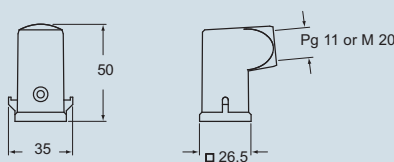
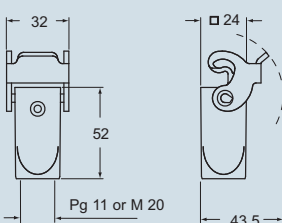**CK IAP(N)S** and **MK IAP(N)**

42,5
Pg 11 or M 20
47,5
41,5
11,5
30
Ø 3,3
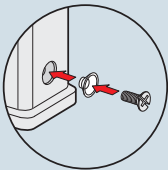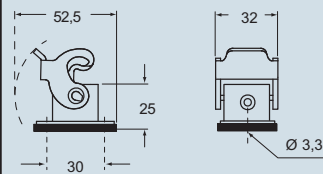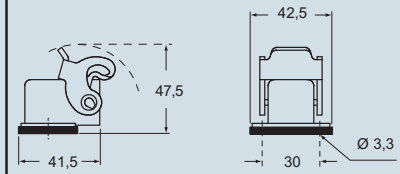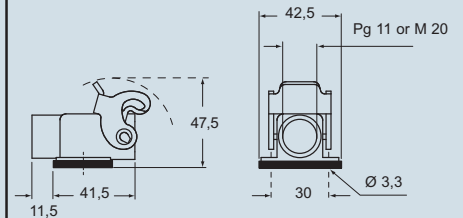
Type 12
Type 4/4X only
with CKR 65 (D)

IP66/IP67 with CKR 65 (D) [1]

dimensions shown are not binding
and may be changed without notice

201
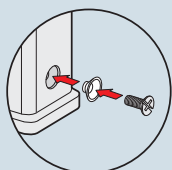
C-TYPE - size 21.21

inserts:				page
CK	....	3	poles + ⊕	40
CK	....	4	poles + ⊕	40
CKS	....	3	poles + ⊕	41
CKS	....	4	poles + ⊕	41
CD	....	7	poles + ⊕	45
CD	....	8	poles	46
CQ	....	5	poles + ⊕	69
CQ	....	12	poles + ⊕	68

insert dimensions:
21 x 21 mm

hoods

covers

description	part no. (entry - Pg 11)		part no. (entry - M 20)		part no.	
with pegs, top entry	CK 03 VS	(white)	MK V20	(white)		
with pegs, top entry	CK 03 VNS	(black)	MK VN20	(black)		
with pegs, side entry	CK 03 VAS	(white)	MK VA20	(white)		
with pegs, side entry	CK 03 VANS	(black)	MK VAN20	(black)		
with lever, top entry	CK 03 VGS	(white)	MK VG20	(white)		
with lever, top entry	CK 03 VGNS	(black)	MK VGN20	(black)		
with pegs and gasket, for female inserts					CK 03 C	(white)
with pegs and gasket, for female inserts					CK 03 CN	(black)
with pegs, for male inserts					CK 03 CA	(white)
with pegs, for male inserts					CK 03 CAN	(black)
with lever and gasket, for female inserts					CK 03 CX	(white)
with lever and gasket, for female inserts					CK 03 CXN	(black)
with lever, for male inserts					CK 03 CXA	(white)
with lever, for male inserts					CK 03 CXAN	(black)
gasket and screw kit for IP66/IP67 [1] for CK, CQ 05, CKS inserts	CKR 65					
gasket and screw kit for IP66/IP67 [1] for CD 07/08 inserts	CKR 65 D					

1) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example)
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating
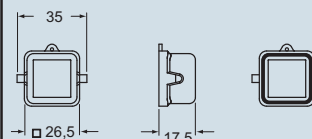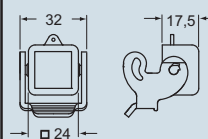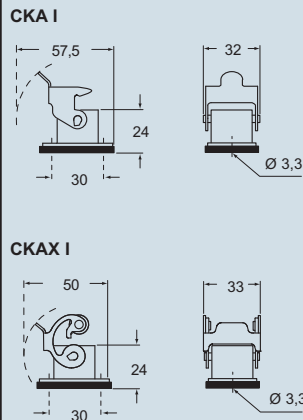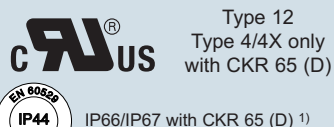
dimensions in mm

CK V(N)S and **MK V(N)**

Pg 11 or M 20

55

35

□ 26,5

CK VA(N)S and **MK VA(N)**

Pg 11 or M 20

50

35

□ 26,5

CK VG(N)S and **MK VG(N)**

32

□ 24

52

Pg 11 or M 20

43,5

dimensions in mm

CK C(N)

35

□ 26,5   17,5

CK CA(N)

35

□ 26,5   17,5

CK CX(N)

32   20

□ 24

CK CXA(N)

32   17,5

□ 24

cⓇUus
Type 12
Type 4/4X only
with CKR 65 (D)

EN 60528
IP44
IEC 60528
  IP66/IP67 with CKR 65 (D) [1]

dimensions shown are not binding
and may be changed without notice

inserts:		page
CK .... 3 poles + ⊕		40
CK .... 4 poles + ⊕		40
CKS .... 3 poles + ⊕		41
CKS .... 4 poles + ⊕		41
CD .... 8 poles		46
CQ .... 5 poles + ⊕		69
CQ .... 12 poles + ⊕		68

insert dimensions:
21 x 21 mm

bulkhead mounting housings

angled bulkhead mounting housings

description	part no.	part no. (entry - Pg 11)	part no. (entry - M 20)
with galvanised steel lever with stainless steel lever	**CKA 03 I** **CKAX 03 I**		
without cable gland, galvanized steel lever without cable gland, stainless steel lever		**CKA 03 IA** **CKAX 03 IA**	
with cable gland, galvanized steel lever with cable gland, stainless steel lever with cable gland, galvanized steel lever, bulkhead hole closed with cable gland, stainless steel lever, bulkhead hole closed		**CKA 03 IAPS** **CKAX 03 IAPS** **CKA 03 APS** **CKAX 03 APS**	**MKA IAP20** **MKAX IAP20** **MKA AP20** **MKAX AP20**
gasket and screw kit for IP66/IP67 [1] for CK, CQ 05, CKS inserts	**CKR 65**	**CKR 65**	
gasket and screw kit for IP66/IP67 [1] for CD 07/08 inserts	**CKR 65 D**	**CKR 65 D**	

C-TYPE - size 21.21

---

panel cut-out for enclosures, in mm

dimensions in mm

dimensions in mm

CKA I

CKA IA

CKAX I

CKAX IA

CKA IAPS (CKA APS) and **MKA IAP (MKA AP)**

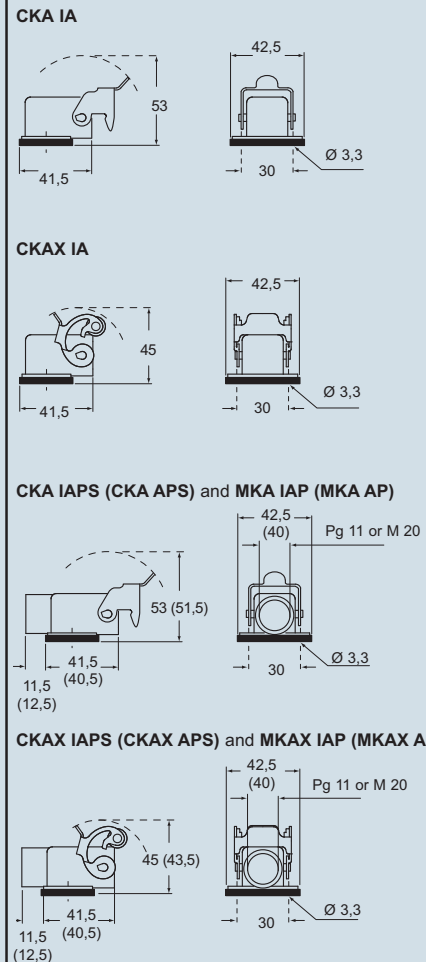**CKAX IAPS (CKAX APS)** and **MKAX IAP (MKAX AP)**

1) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example)
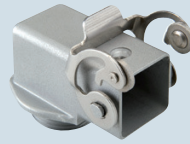CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating

cⓇUus

Type 12
Type 4/4X only
with CKR 65 (D)

IP44   IP66/IP67 with CKR 65 (D) [1]

dimensions shown are not binding
and may be changed without notice

angled bulkhead mounting housings

insert dimensions:
21 x 21 mm

NEW

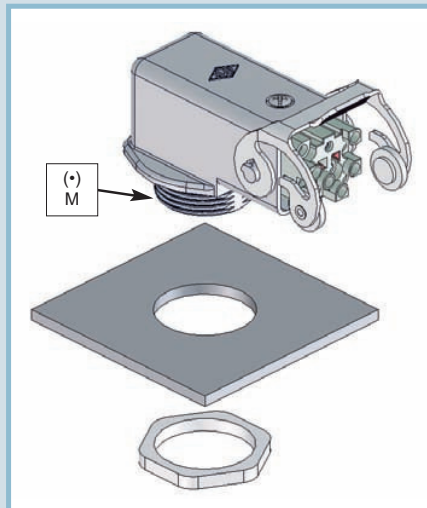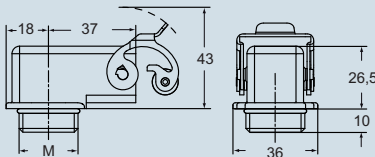C-TYPE - size 21.21

description	part no.
galvanized steel lever, M20 fixing thread (•)	**MKA IAF20** [1]
stainless steel lever, M20 fixing thread (•)	**MKAX IAF20** [1]
galvanized steel lever, M25 fixing thread (•)	**MKA IAF25** [1]
stainless steel lever, M25 fixing thread (•)	**MKAX IAF25** [1]
gasket and screw kit for IP66/IP67 [1] for CK, CQ 05, CKS inserts	**CKR 65**
gasket and screw kit for IP66/IP67 [1] for CD 07/08 inserts	**CKR 65 D**

panel cut-out

dimensions in mm

ø 25.5 (M 25)
ø 20.5 (M 20)

MKA IAF

18 37   50,5   26,5   10   36   M
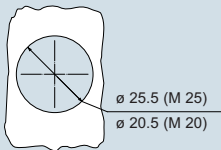
(•) locknut supplied on request, see catalogue cable glands (articles AS M20N and AS M25N metallic, AS M20L and AS M25L insulating)

1) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example)
CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating

MKAX IAF

18 37   43   26,5   10   36   M

(•) M

IP44 IP66/IP67 with CKR 65 (D) 1)

dimensions shown are not binding and may be changed without notice

inserts:			page
CK	 3	poles + ⊕	40
CK	 4	poles + ⊕	40
CKS	 3	poles + ⊕	41
CKS	 4	poles + ⊕	41
CD	 8	poles	46
CQ	 5	poles + ⊕	69
CQ	 12	poles + ⊕	68

insert dimensions:
21 x 21 mm

hoods

covers

description	part no. (entry - Pg 11)	part no. (entry - M 20)	part no.
with pegs, top entry with pegs, side entry	**CKA 03 VS** **CKA 03 VAS**	**MKA V20** **MKA VA20**	
with galvanised steel lever, top entry with stainless steel lever, top entry	**CKA 03 VGS** **CKAX 03 VGS**	**MKA VG20** **MKAX VG20**	
with pegs and gasket, for female inserts with pegs, for male inserts			**CKA 03 C** [1] **CKA 03 CA** [1]
with stainless steel lever and gasket, for female inserts with stainless steel lever, for male inserts			**CKAX 03 CX** **CKAX 03 CXA**
gasket and screw kit for IP66/IP67 [2] for CK, CQ 05, CKS inserts	**CKR 65**		
gasket and screw kit for IP66/IP67 [2] for CD 08 inserts	**CKR 65 D**		

1) preferably be used with enclosures CKAX (stainless steel lever).
2) To obtain the protection rating IP66/IP67 a kit is provided that includes a gasket to fit under the insert fixing screws supplied with the kit (see illustrative example)
   CQ 12 inserts are already supplied with a gasket and screw which ensure IP66/IP67 protection rating
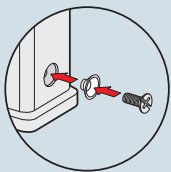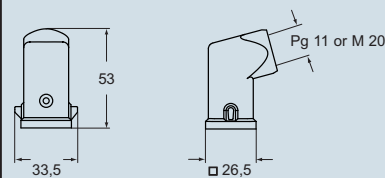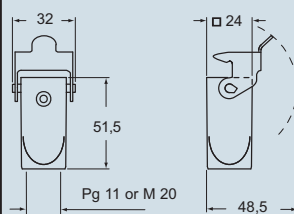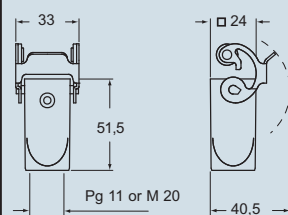
dimensions in mm

CKA VS and **MKA V**
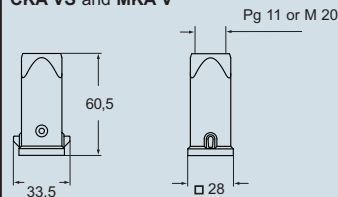
Pg 11 or M 20

60,5

33,5   □ 28

CKA VAS and **MKA VA**

Pg 11 or M 20

53

33,5   □ 26,5

CKA VGS and **MKA VG**

32   □ 24

51,5

Pg 11 or M 20   48,5

CKAX VGS and **MKAX VG**

33   □ 24

51,5

Pg 11 or M 20   40,5

dimensions in mm

CKA C

33,5

□ 26,5   17,5

CKA CA

33,5

□ 26,5   17,5

CKAX CX

33   20

□ 24

CKAX CXA

33   17,5

□ 24

C°**�**US®

Type 12
Type 4/4X only
with CKR 65 (D)

EN 60529
IP44
IEC 60529
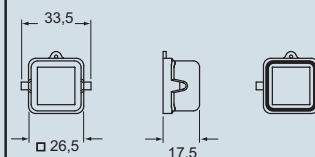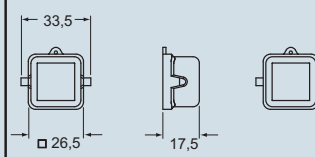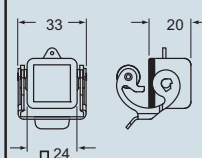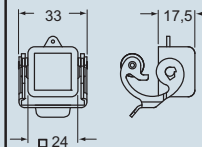
IP66/IP67 with CKR 65 (D) [2]

dimensions shown are not binding
and may be changed without notice

C-TYPE - size 21.21