

Functional Characteristics


Dimensional Class:

Low


Standard Colour:

Green


Dimensions:

10.35 x 19.2 mm
(.406 x .756 in)


Max Approved Wire Size:

solid: 1,5 mm² (CE)
stranded: 1 mm² (CE)

Clamp Opening Size:

2.6 x 1.7 mm (.102 x .067 in)


Versions:

Side Stackable,
Modular,



Locking Screw Flanges


Single Mould Poles:

from 2 to 3 (Modular and Side Stackable)
from 2 to 3 (Locking Screw Flanges)


Pitches:

Metric 3.5 mm, 7 mm
(.138 in, .276 in)

Imperial 3.81 mm, 7.62 mm
(.150 in, .300 in)



RoHS
2002/95/EC

0
10
20
30
mm
1/2
1
in



pitch 3.5 and 3.81 mm
from 2 to 16 poles
modular right



pitch 3.5 and 3.81 mm
from 2 to 16 poles
modular left



pitch 3.5 and 3.81 mm
from 2 to 16 poles
locking screw flanges



pitch 3.5 and 3.81 mm
from 2 to 16 poles
side stackable right



pitch 3.5 and 3.81 mm
from 2 to 16 poles
side stackable left



CKF-SC1
coding splines

Brief description

Although the **CKF** vertical female connector series is small in size it offers a **high number of connection possibilities**, in fact it can wire up to 1.5mm² (14 AWG) and consequentially a certified current range of 13,5A can be reached.

It is available in 3.5 mm (.138 in), 3.81 mm (.100 in), 7.5 mm (.275 in) and 7.62 mm (.300 in) pitches, in monolithic blocks from 2 to 16 poles, in side-stackable, modular or with locking screw flanges versions.

The **CKF** Connector Series for PCBs is characterized by an asymmetric profile so mistakes are prevented when connections are made with the relative **CTM** male connector. Further safety when connecting can

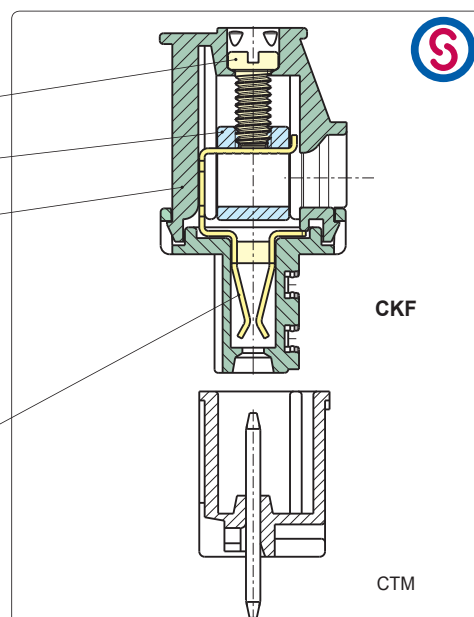
be obtained by using the CTM-LC1 and CTF-SCI Coding Splines and Coding Clips (see page 18 – 19)

The basic modular connectors can be stacked or assembled to obtain any number of poles without losing the pitch. By taking advantage of this characteristic a minimum stock of basic connectors can be kept.

It is simple to manage product, warehouse and assembly with the **Kit packages** because several versions can be achieved with **only one code**, the part-numbers being significantly reduced and the risk of making mistakes is also reduced.

Characteristics of Components

- M2 nickel plated Copper Alloy Screw.
- Nickel-plated Copper Alloy Rising Clamp.
- Polyamide Housing.
Standard Colour: GREEN.
V0 Self-extinguishing according to UL 94.
Chlorinated solvents resistant,
with no Phosphor, Dioxin or
detrimental to health Halogens.
- Lead-free tin-plated Copper Alloy Spring.



Mechanical Characteristics

Insertion force per pole	max 3 N (max .674 lbf)
Withdrawal force per pole	min 1,5 N (min .337 lbf)
Recommended/Highest tightening torque	0.2/0.25 Nm (1.77/2.21 lbf in)
Stripping length	5 ÷ 6 mm (.20 ÷ .24 in)
Operating temperature range	-40 °C ÷ +110 °C (-40 °F ÷ +230 °F)
Climatic category	40/110/21 According to EN 60068-1

Electrical Characteristics*

Solid wire section	0.05 ÷ 1.5 mm ² (CE)* 30÷14 AWG (UL)*
Stranded wire section	0.05 ÷ 1 mm ² (CE)* 30÷14 AWG (UL)*
Rated voltage for 3.5 mm (.138 in) and 3.81 mm (.150 in) pitch	300 V (UL)*
Rated voltage for 7 mm (.275 in) and 7.62 mm (.300 in) pitch	750 V (CE)*
Rated current	13.5 A (CE)*
Contact resistance	<15 mΩ
Insulation resistance	>10 ⁹ Ω (500V DC)

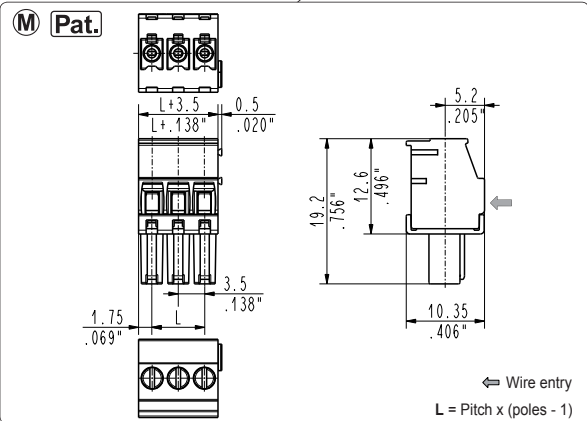
*All the a.m. data refer to the highest values amongst the certified ones.

V voltage, I current values and tightening torque are related to the norms to be applied to the product and to its use.

Approvals

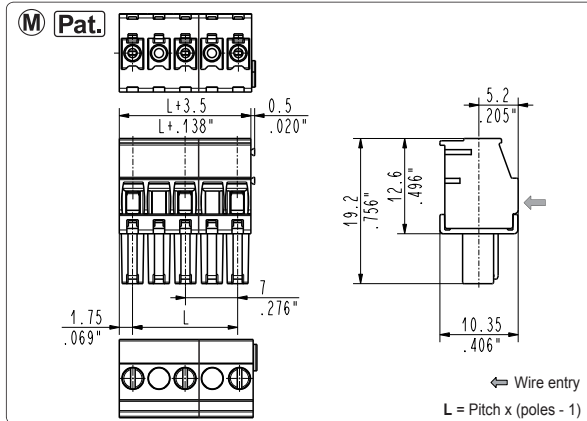
CE	CE:	130 V - T 110 - 13.5 A - 1.5 mm ² solid (11 A - 1 mm ² stranded) for 3.5 and 3.81 mm pitch
		750 V - T 110 - 13.5 A - 1.5 mm ² solid (11 A - 1 mm ² stranded) for 7 mm and 7.62 mm pitch

UL	UL:	300 V - 10 A - 30÷14 AWG for 3.5 mm, 3.81 mm, 7 mm and 7.62 mm pitch
	E167473	Application values for end-use equipment have to be in accordance to UL norms and applicable to them.



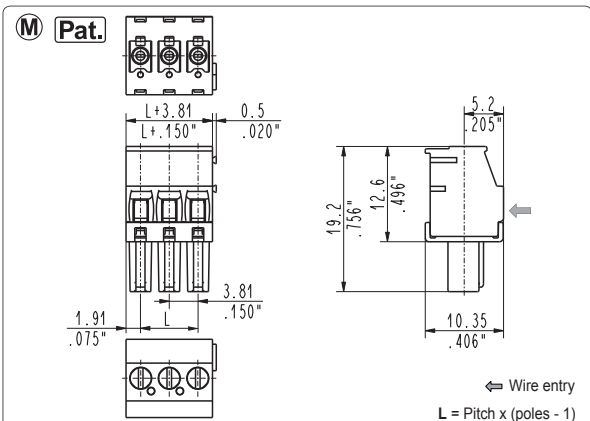
CKF_0M8 Right Modular Female

3.5 mm / .138" Pitch			Weight per pole: 2.08 g		
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020M8	500	2,08	2000	9,32
03	CKF030M8	400	2,50	1750	12,23
04	CKF040M8	300	2,50	1500	14,00
05	CKF050M8	250	2,60	1500	17,50
06	CKF060M8	200	2,50	1250	17,50
07	CKF070M8	175	2,55	1250	20,39
08	CKF080M8	125	2,08	1000	18,64
09	CKF090M8	125	2,34	750	15,73
10	CKF100M8	100	2,08	750	17,48
11	CKF110M8	100	2,29	750	19,22
12	CKF120M8	75	1,87	750	20,97
13	CKF130M8	75	2,03	750	22,72
14	CKF140M8	100	2,91	750	24,47
15	CKF150M8	100	3,12	750	26,21
16	CKF160M8	100	3,33	750	27,96



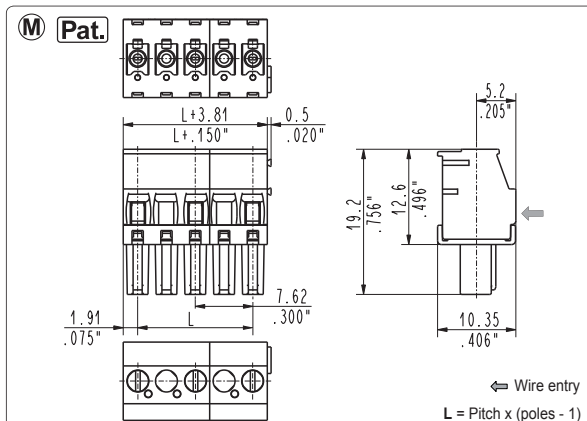
CKF_0M9 Right Modular Female

7 mm / .276" Pitch			Weight per pole: 2.33 g		
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
01	CKF010M9	500	2,33	2000	9,32
02	CKF020M9	400	2,80	1750	12,23
03	CKF030M9	250	2,91	1500	17,50
04	CKF040M9	175	2,85	1250	17,50
05	CKF050M9	125	2,62	1000	16,31
06	CKF060M9	100	2,56	750	14,00
07	CKF070M9	100	3,03	750	15,73
08	CKF080M9	100	3,50	750	17,50



CKF_0MT Right Modular Female

3.81 mm / .150" Pitch			Weight per pole: 2.08 g		
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020MT	500	2,08	2000	9,32
03	CKF030MT	400	2,50	1750	12,23
04	CKF040MT	300	2,50	1500	14,00
05	CKF050MT	250	2,60	1500	17,50
06	CKF060MT	200	2,50	1250	17,50
07	CKF070MT	175	2,55	1250	20,39
08	CKF080MT	125	2,08	1000	18,64
09	CKF090MT	125	2,34	750	15,73
10	CKF100MT	100	2,08	750	17,48
11	CKF110MT	100	2,29	750	19,22
12	CKF120MT	75	1,87	750	20,97
13	CKF130MT	75	2,03	750	22,72
14	CKF140MT	100	2,91	750	24,47
15	CKF150MT	100	3,12	750	26,21
16	CKF160MT	100	3,33	750	27,96

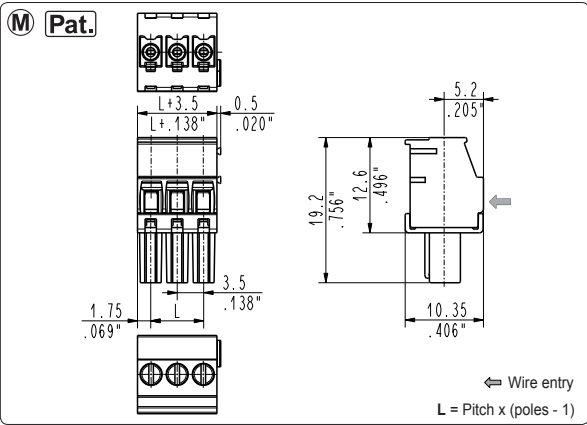


CKF_0M7 Right Modular Female

7.62 mm / .300" Pitch			Weight per pole: 2.33 g		
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
01	CKF010M7	500	2,33	2000	9,32
02	CKF020M7	400	2,80	1750	12,23
03	CKF040M7	250	2,91	1500	17,50
04	CKF040M7	175	2,85	1250	17,50
05	CKF050M7	125	2,62	1000	16,31
06	CKF060M7	100	2,56	750	14,00
07	CKF070M7	100	3,03	750	15,73
08	CKF080M7	100	3,50	750	17,50

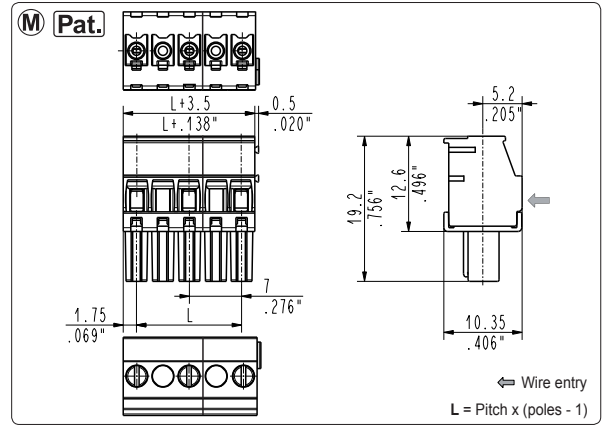
*W [kg]: Approximate Weight per box in kg

**Industrial packaging: add "-00000E" at standard code



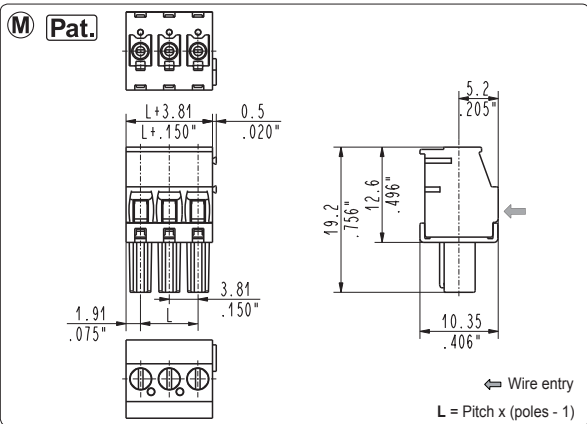
CKF_0W8 Left Modular Female

3.5 mm / .138" Pitch			Weight per pole: 2.08 g		
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020W8	500	2,08	2000	9,32
03	CKF030W8	400	2,50	1750	12,23
04	CKF040W8	300	2,50	1500	14,00
05	CKF050W8	250	2,60	1500	17,50
06	CKF060W8	200	2,50	1250	17,50
07	CKF070W8	175	2,55	1250	20,39
08	CKF080W8	125	2,08	1000	18,64
09	CKF090W8	125	2,34	750	15,73
10	CKF100W8	100	2,08	750	17,48
11	CKF110W8	100	2,29	750	19,22
12	CKF120W8	75	1,87	750	20,97
13	CKF130W8	75	2,03	750	22,72
14	CKF140W8	100	2,91	750	24,47
15	CKF150W8	100	3,12	750	26,21
16	CKF160W8	100	3,33	750	27,96



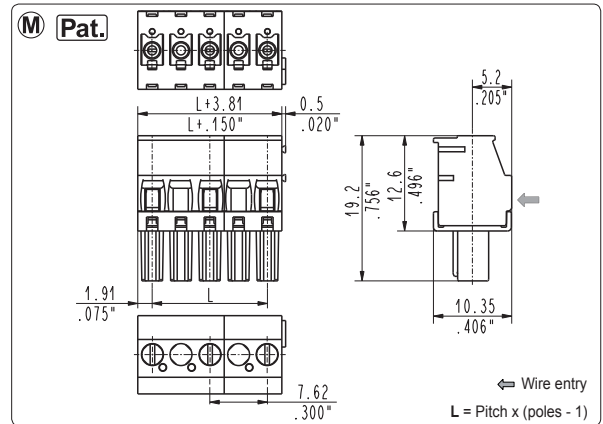
CKF_0W9 Left Modular Female

7 mm / .276" Pitch			Weight per pole: 2.33 g		
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
01	CKF010W9	500	2,33	2000	9,32
02	CKF020W9	400	2,80	1750	12,23
03	CKF030W9	250	2,91	1500	17,50
04	CKF040W9	175	2,85	1250	17,50
05	CKF050W9	125	2,62	1000	16,31
06	CKF060W9	100	2,56	750	14,00
07	CKF070W9	100	3,03	750	15,73
08	CKF080W9	100	3,50	750	17,50



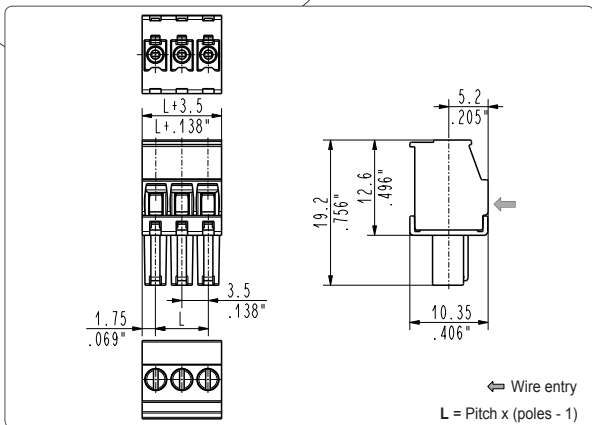
CKF_0WT Left Modular Female

3.81 mm / .150" Pitch			Weight per pole: 2.08 g		
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020WT	500	2,08	2000	9,32
03	CKF030WT	400	2,50	1750	12,23
04	CKF040WT	300	2,50	1500	14,00
05	CKF050WT	250	2,60	1500	17,50
06	CKF060WT	200	2,50	1250	17,50
07	CKF070WT	175	2,55	1250	20,39
08	CKF080WT	125	2,08	1000	18,64
09	CKF090WT	125	2,34	750	15,73
10	CKF100WT	100	2,08	750	17,48
11	CKF110WT	100	2,29	750	19,22
12	CKF120WT	75	1,87	750	20,97
13	CKF130WT	75	2,03	750	22,72
14	CKF140WT	100	2,91	750	24,47
15	CKF150WT	100	3,12	750	26,21
16	CKF160WT	100	3,33	750	27,96



CKF_0W7 Left Modular Female

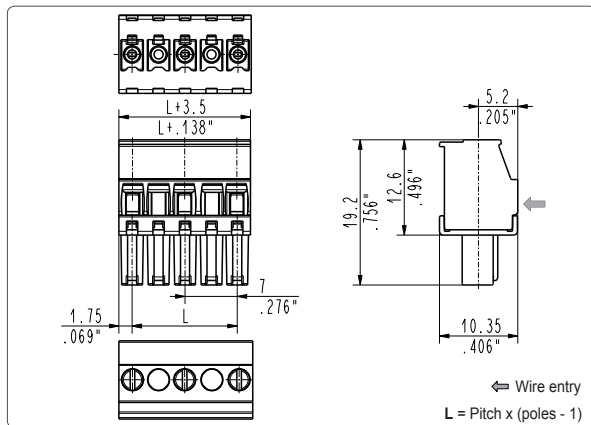
7.62 mm / .300" Pitch			Weight per pole: 2.33 g		
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
01	CKF010W7	500	2,33	2000	9,32
02	CKF020W7	400	2,80	1750	12,23
03	CKF030W7	250	2,91	1500	17,50
04	CKF040W7	175	2,85	1250	17,50
05	CKF050W7	125	2,62	1000	16,31
06	CKF060W7	100	2,56	750	14,00
07	CKF070W7	100	3,03	750	15,73
08	CKF080W7	100	3,50	750	17,50



CKF_0R8 Right Side Stackable Female

3.5 mm / .138" Pitch **Weight per pole: 2.08 g**

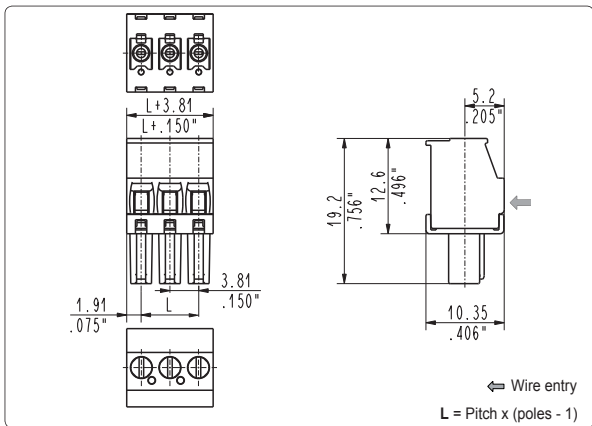
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020R8	500	2,08	2000	9,32
03	CKF030R8	400	2,50	1750	12,23
04	CKF040R8	300	2,50	1500	14,00
05	CKF050R8	250	2,60	1500	17,50
06	CKF060R8	200	2,50	1250	17,50
07	CKF070R8	175	2,55	1250	20,39
08	CKF080R8	125	2,08	1000	18,64
09	CKF090R8	125	2,34	750	15,73
10	CKF100R8	100	2,08	750	17,48
11	CKF110R8	100	2,29	750	19,22
12	CKF120R8	75	1,87	750	20,97
13	CKF130R8	75	2,03	750	22,72
14	CKF140R8	100	2,91	750	24,47
15	CKF150R8	100	3,12	750	26,21
16	CKF160R8	100	3,33	750	27,96



CKF_0R9 Right Side Stackable Female

7 mm / .276" Pitch **Weight per pole: 2.33 g**

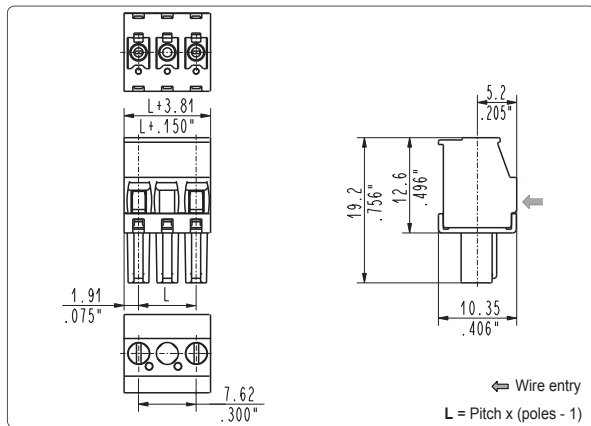
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020R9	400	2,80	1750	12,23
03	CKF040R9	250	2,91	1500	17,50
04	CKF040R9	175	2,85	1250	17,50
05	CKF050R9	125	2,62	1000	16,31
06	CKF060R9	100	2,56	750	14,00
07	CKF070R9	100	3,03	750	15,73
08	CKF080R9	100	3,50	750	17,50



CKF_0RT Right Side Stackable Female

3.81 mm / .150" Pitch **Weight per pole: 2.08 g**

Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020RT	500	2,08	2000	9,32
03	CKF030RT	400	2,50	1750	12,23
04	CKF040RT	300	2,50	1500	14,00
05	CKF050RT	250	2,60	1500	17,50
06	CKF060RT	200	2,50	1250	17,50
07	CKF070RT	175	2,55	1250	20,39
08	CKF080RT	125	2,08	1000	18,64
09	CKF090RT	125	2,34	750	15,73
10	CKF100RT	100	2,08	750	17,48
11	CKF110RT	100	2,29	750	19,22
12	CKF120RT	75	1,87	750	20,97
13	CKF130RT	75	2,03	750	22,72
14	CKF140RT	100	2,91	750	24,47
15	CKF150RT	100	3,12	750	26,21
16	CKF160RT	100	3,33	750	27,96



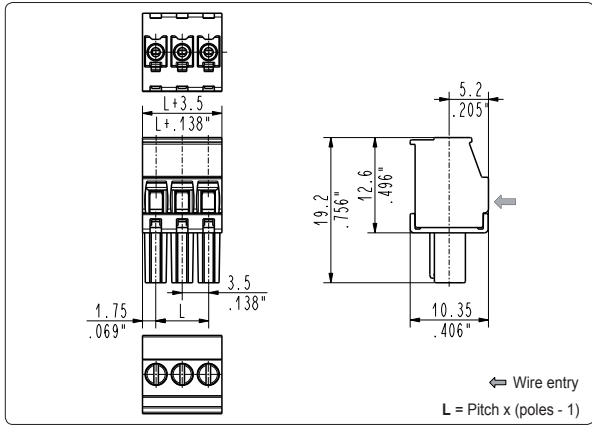
CKF_0R7 Right Side Stackable Female

7.62 mm / .300" Pitch **Weight per pole: 2.33 g**

Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020R7	400	2,80	1750	12,23
03	CKF030R7	250	2,91	1500	17,50
04	CKF040R7	175	2,85	1250	17,50
05	CKF050R7	125	2,62	1000	16,31
06	CKF060R7	100	2,56	750	14,00
07	CKF070R7	100	3,03	750	15,73
08	CKF080R7	100	3,50	750	17,50

*W [kg]: Approximate Weight per box in kg

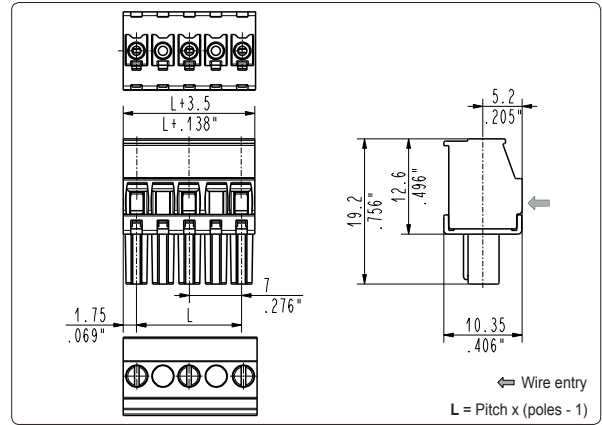
**Industrial packaging: add "-00000E" at standard code



CKF_0L8 Left Side Stackable Female

3.5 mm / .138" Pitch Weight per pole: 2.08 g

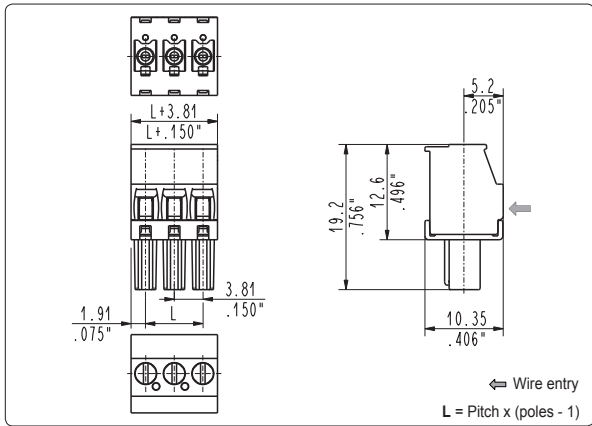
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020L8	500	2,08	2000	9,32
03	CKF030L8	400	2,50	1750	12,23
04	CKF040L8	300	2,50	1500	14,00
05	CKF050L8	250	2,60	1500	17,50
06	CKF060L8	200	2,50	1250	17,50
07	CKF070L8	175	2,55	1250	20,39
08	CKF080L8	125	2,08	1000	18,64
09	CKF090L8	125	2,34	750	15,73
10	CKF100L8	100	2,08	750	17,48
11	CKF110L8	100	2,29	750	19,22
12	CKF120L8	75	1,87	750	20,97
13	CKF130L8	75	2,03	750	22,72
14	CKF140L8	100	2,91	750	24,47
15	CKF150L8	100	3,12	750	26,21
16	CKF160L8	100	3,33	750	27,96



CKF_0L9 Left Side Stackable Female

7 mm / .276" Pitch Weight per pole: 2.33 g

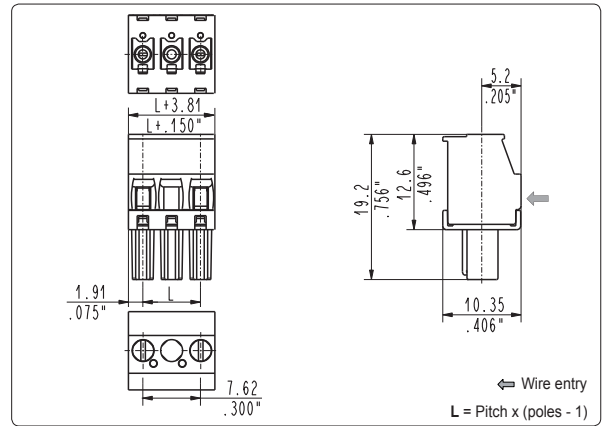
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020L9	400	2,80	1750	12,23
03	CKF030L9	250	2,91	1500	17,50
04	CKF040L9	175	2,85	1250	17,50
05	CKF050L9	125	2,62	1000	16,31
06	CKF060L9	100	2,56	750	14,00
07	CKF070L9	100	3,03	750	15,73
08	CKF080L9	100	3,50	750	17,50



CKF_0LT Left Side Stackable Female

3.81 mm / .150" Pitch Weight per pole: 2.08 g

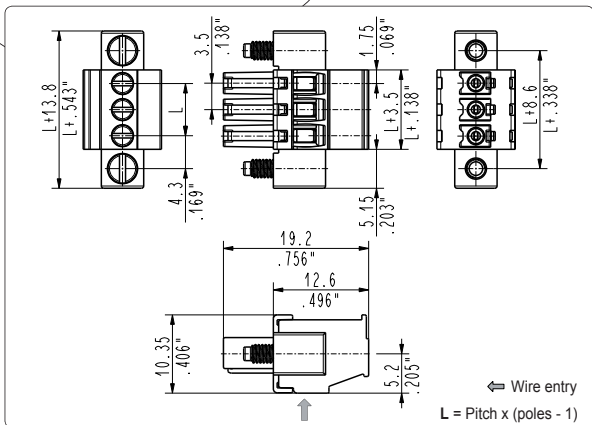
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020LT	500	2,08	2000	9,32
03	CKF030LT	400	2,50	1750	12,23
04	CKF040LT	300	2,50	1500	14,00
05	CKF050LT	250	2,60	1500	17,50
06	CKF060LT	200	2,50	1250	17,50
07	CKF070LT	175	2,55	1250	20,39
08	CKF080LT	125	2,08	1000	18,64
09	CKF090LT	125	2,34	750	15,73
10	CKF100LT	100	2,08	750	17,48
11	CKF110LT	100	2,29	750	19,22
12	CKF120LT	75	1,87	750	20,97
13	CKF130LT	75	2,03	750	22,72
14	CKF140LT	100	2,91	750	24,47
15	CKF150LT	100	3,12	750	26,21
16	CKF160LT	100	3,33	750	27,96



CKF_0L7 Left Side Stackable Female

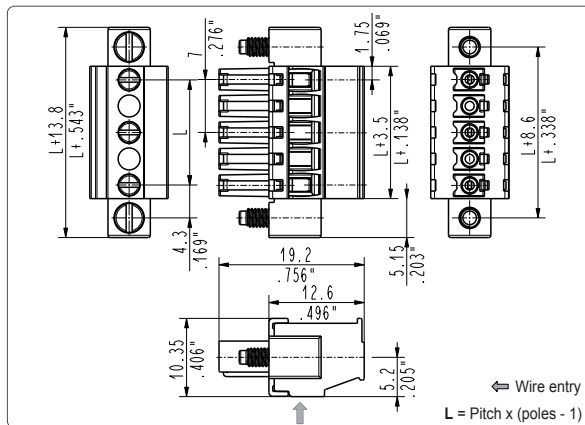
7.62 mm / .300" Pitch Weight per pole: 2.33 g

Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020L7	400	2,80	1750	12,23
03	CKF030L7	250	2,91	1500	17,50
04	CKF040L7	175	2,85	1250	17,50
05	CKF050L7	125	2,62	1000	16,31
06	CKF060L7	100	2,56	750	14,00
07	CKF070L7	100	3,03	750	15,73
08	CKF080L7	100	3,50	750	17,50



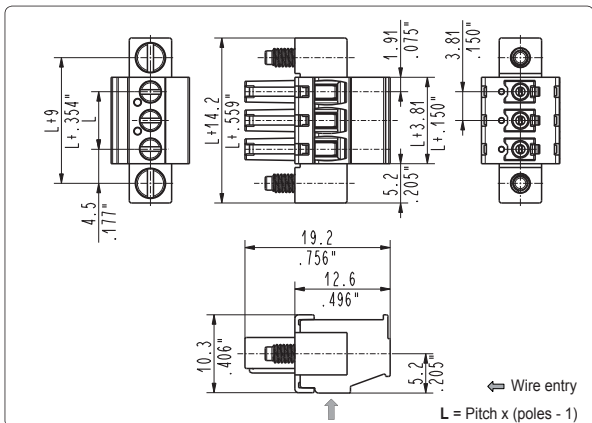
CKF_0D8 Right Locking Screw Flanges Female

3.5 mm / .138" Pitch		Weight per pole: 2.68 g			
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020D8	250	1,34	1250	6,70
03	CKF030D8	200	1,61	1000	8,04
04	CKF040D8	175	1,88	1000	10,72
05	CKF050D8	150	2,01	750	10,05
06	CKF060D8	125	2,01	750	12,06
07	CKF070D8	100	1,88	500	9,38
08	CKF080D8	100	2,14	500	10,72
09	CKF090D8	75	1,81	500	12,06
10	CKF100D8	75	2,01	500	13,40
11	CKF110D8	75	2,21	500	14,74
12	CKF120D8	75	2,41	500	16,08
13	CKF130D8	75	2,61	250	8,71
14	CKF140D8	50	1,88	250	9,38
15	CKF150D8	50	2,01	250	10,05
16	CKF160D8	50	2,14	250	10,72



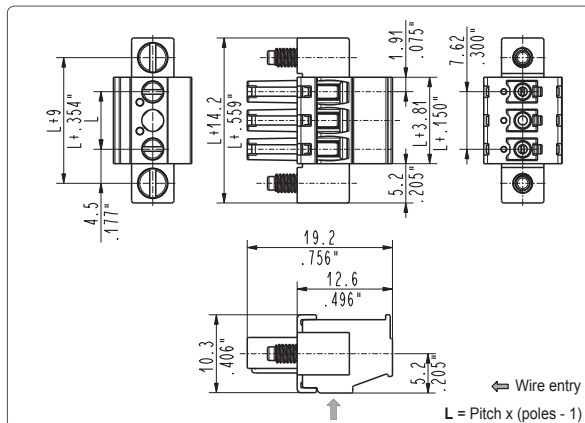
CKF_0D9 Right Locking Screw Flanges Female

7 mm / .276" Pitch		Weight per pole: 2.93 g			
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020D9	200	1,76	1000	8,79
03	CKF030D9	150	2,20	750	10,99
04	CKF040D9	100	1,76	500	8,79
05	CKF050D9	75	1,54	500	10,26
06	CKF060D9	75	1,76	500	11,72
07	CKF070D9	75	1,98	250	6,59
08	CKF080D9	50	2,20	250	7,33



CKF_0DT Right Locking Screw Flanges Female

3.81 mm / .150" Pitch		Weight per pole: 2.68 g			
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020DT	250	1,34	1250	6,70
03	CKF030DT	200	1,61	1000	8,04
04	CKF040DT	175	1,88	1000	10,72
05	CKF050DT	150	2,01	750	10,05
06	CKF060DT	125	2,01	750	12,06
07	CKF070DT	100	1,88	500	9,38
08	CKF080DT	100	2,14	500	10,72
09	CKF090DT	75	1,81	500	12,06
10	CKF100DT	75	2,01	500	13,40
11	CKF110DT	75	2,21	500	14,74
12	CKF120DT	75	2,41	500	16,08
13	CKF130DT	75	2,61	250	8,71
14	CKF140DT	50	1,88	250	9,38
15	CKF150DT	50	2,01	250	10,05
16	CKF160DT	50	2,14	250	10,72

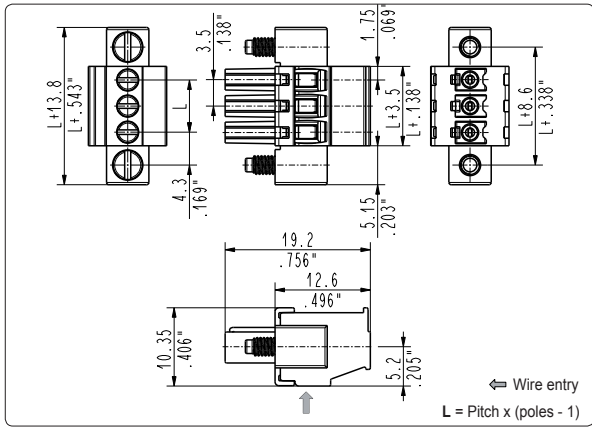


CKF_0D7 Right Locking Screw Flanges Female

7.62 mm / .300" Pitch		Weight per pole: 2.93 g			
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020D7	200	1,76	1000	8,79
03	CKF030D7	150	2,20	750	10,99
04	CKF040D7	100	1,76	500	8,79
05	CKF050D7	75	1,54	500	10,26
06	CKF060D7	75	1,76	500	11,72
07	CKF070D7	75	1,98	250	6,59
08	CKF080D7	50	2,20	250	7,33

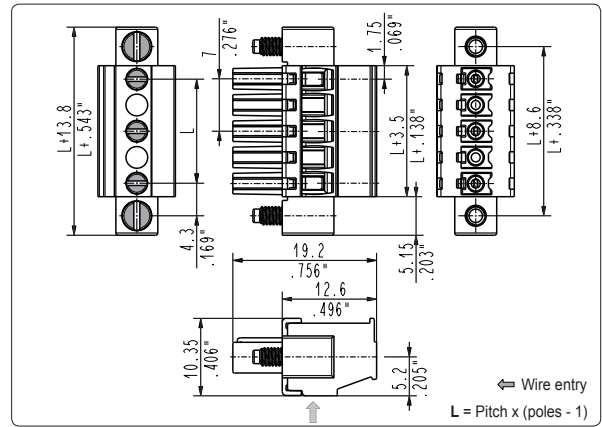
*W [kg]: Approximate Weight per box in kg

**Industrial packaging: add "-00000E" at standard code



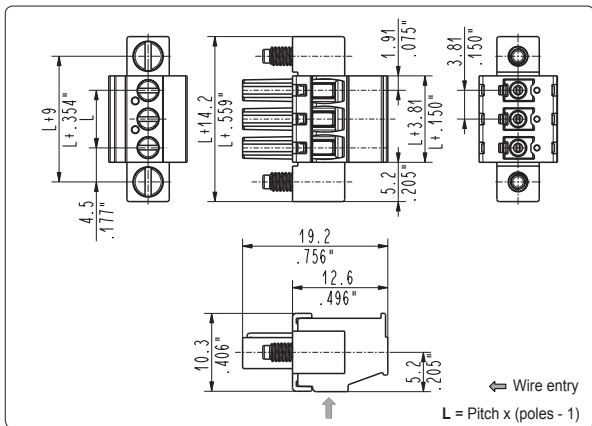
CKF_0S8 Left Locking Screw Flanges Female

3.5 mm / .138" Pitch		Weight per pole: 2.68 g			
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020S8	250	1,34	1250	6,70
03	CKF030S8	200	1,61	1000	8,04
04	CKF040S8	175	1,88	1000	10,72
05	CKF050S8	150	2,01	750	10,05
06	CKF060S8	125	2,01	750	12,06
07	CKF070S8	100	1,88	500	9,38
08	CKF080S8	100	2,14	500	10,72
09	CKF090S8	75	1,81	500	12,06
10	CKF100S8	75	2,01	500	13,40
11	CKF110S8	75	2,21	500	14,74
12	CKF120S8	75	2,41	500	16,08
13	CKF130S8	75	2,61	250	8,71
14	CKF140S8	50	1,88	250	9,38
15	CKF150S8	50	2,01	250	10,05
16	CKF160S8	50	2,14	250	10,72



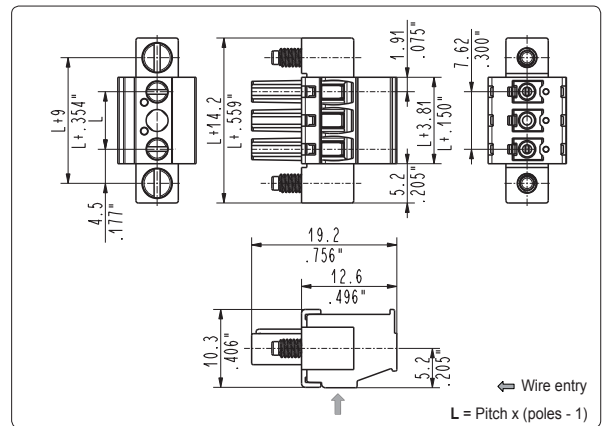
CKF_0S9 Left Locking Screw Flanges Female

7 mm / .276" Pitch		Weight per pole: 2.93 g			
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020S9	200	1,76	1000	8,79
03	CKF030S9	150	2,20	750	10,99
04	CKF040S9	100	1,76	500	8,79
05	CKF050S9	75	1,54	500	10,26
06	CKF060S9	75	1,76	500	11,72
07	CKF070S9	75	1,98	250	6,59
08	CKF080S9	50	2,20	250	7,33



CKF_0ST Left Locking Screw Flanges Female

3.81 mm / .150" Pitch		Weight per pole: 2.68 g			
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020ST	250	1,34	1250	6,70
03	CKF030ST	200	1,61	1000	8,04
04	CKF040ST	175	1,88	1000	10,72
05	CKF050ST	150	2,01	750	10,05
06	CKF060ST	125	2,01	750	12,06
07	CKF070ST	100	1,88	500	9,38
08	CKF080ST	100	2,14	500	10,72
09	CKF090ST	75	1,81	500	12,06
10	CKF100ST	75	2,01	500	13,40
11	CKF110ST	75	2,21	500	14,74
12	CKF120ST	75	2,41	500	16,08
13	CKF130ST	75	2,61	250	8,71
14	CKF140ST	50	1,88	250	9,38
15	CKF150ST	50	2,01	250	10,05
16	CKF160ST	50	2,14	250	10,72



CKF_0S7 Left Locking Screw Flanges Female

7.62 mm / .300" Pitch		Weight per pole: 2.93 g			
Poles	STD Code	Pcs/pack.	W [kg]*	Pcs/Ind.**	W [kg]*
02	CKF020S7	200	1,76	1000	8,79
03	CKF030S7	150	2,20	750	10,99
04	CKF040S7	100	1,76	500	8,79
05	CKF050S7	75	1,54	500	10,26
06	CKF060S7	75	1,76	500	11,72
07	CKF070S7	75	1,98	250	6,59
08	CKF080S7	50	2,20	250	7,33