EMPTY PAGE FOR DELETION AFTER PRINT CONVERSION

CONTENTS

CONTENTS 2
UPDATES 3
SPECIFICATIONS 4
STANDARD CIRCULAR (SC) 6
HEAVY DUTY (HD) 7
MINI CONNECTOR (MC) 8
MINI CONNECTOR SUBCONN CONFIGURATION (MC-SU) 9
TINY CONNECTOR (TC) 10
LOW PROFILE (LP) AND MINI LOWPROFILE (MCLP) 11
FAWL FAWM 12
LPM 13
OVER MOLD (OM) 14
METAL SHELL (MS) 15
5500 SERIES 16
RUBBER MOLDED (RM) 18
XSJJ GRE SERIES 20
HERMAPHRODITIC 21
PENETRATOR (PN) 22
ETHERNET 23
LOCKING SLEEVES 24
APPLICATION GUIDELINES 25
DISTRIBUTORS 26

UPDATES

We are committed to the continuous improvement and expansion of our products and services. This section will include the latest news and major updates.

Recent Highlights

TC Ethernet – Releasing the new TC8. The smallest Ethernet wet mate connector on the market:

MC 12 pin – Same size more pins! We added 4 pins to the favorite MC8 connector

XSJJ Series 2-9 contacts now available

LP 12 pin connector is now available

TC – Tiny but tough! Now available in 316 Stainless, PEEK, Titanium, and non-magnetic Aluminum Bronze

TC Right Angle – Coming soon!

SPECIFICATIONS

General Specification			
Build		**Electrical**	
Contacts	Gold plated per MIL-G 45204 Type II, Grade C, Class 0	Insulation	>250 megaohm
Pin	Phosphor Bronze	Contacts	<0.01 ohm,
Sockets	Beryllium Copper	Volt Rating Cables	300v
Location Pin	316 Stainless	Volt Rating BH Wires	600v for Teflon bulkhead leads.
In-line cable	60cm	**Application**	
BH leads	30cm	Pressure Rating Mated	>600 bar
O-rings	Buna-N	Wet Mated Series:	Nano, TC, MC, SC, LP, Metal Shell, FAWL/M, HD
Mold	Neoprene, PU	Depth Open Face*	Diving Depth
Bulkhead	316 Stainless,	Temperature	-5C - +65C
Bulkhead Extended options	Titanium Gr. 5, Nickel Aluminum Bronze, PEEK, Aluminum	Matings	>750 Cycles
		*Wet mated connectors have been tested open face to depths far exceeding diving depth. High open face pressures may damage the connector.	

Series	Contact Number And Gauge Range	
	AWG 20	AWG 18
MH	2	
Nano	2,4	
TC Tiny Connector	2,3,4,5 7 (AWG 22)	
MC Mini Connector	5,6,8,9,10,12,13,16,18,21	2,3,4
SC Standard Circular	25	2,3,4,5,6,8,10,12,16
LP Low Profile	12	2,3,4,6,7,9
Metal Shell 1500	5,6,8	2,3,4
Metal Shell 2000	10,12	2,3,4
Metal Shell 2400		6,8,10
FAWL, FAWM	5,8,10	2,3,4
LPM	5,6,7,8	3,4

Series	Contact Number And Gauge Range			
	AWG 18	AWG 16	AWG 12	AWG 4
Penetrator	2,3,4,5,6,7,8			
RM Size A	1			
RM Size G	1,2,3,4,5,6			
RM Size K		2,3,4,5,6,8		
55 Size 1500	4,6,8	2,3		
55 Size 2000	13,21	3,4,6,8		1 [RFT]
55 Size 2400	20	12,10		
HD Heavy Duty			2,3,4	

Wire Current Rating Per AWG And Number Of Conductors													
	Number Of Conductors												
	#2	#3	#4	#5	#6	#7	#8	#9	#10	#12	#13	#16	#20
20 AWG	6	5	5	4	4	4	4	3	3	3	3	3	3
18 AWG	8	7	6	6	6	5	5	5	5	4	4	4	4
16 AWG	12	10	9	8	8	7	7	7	7	6	6	6	5
14 AWG	18	15	14	13	12	11	11	10	10	9	9	8	8
12 AWG	23	20	18	17	16	15	14	14	13	12	12	11	10
10 AWG	29	25	23	21	20	19	18	17	16	15	15	14	13
8 AWG	41	35	32	29	28	26	25	24	23	21	21	19	18
6 AWG	53	45	41	38	35	34	32	31	29	28	27	25	23
4 AWG	70	61	55	50	47	45	43	41	39	37	36	33	31
2 AWG	93	81	73	67	63	60	57	54	52	49	48	44	41

Current Correction		
Ambient Temperature		
°C	°F	Correction Factor
10 >	50 >	1.2
20	68	1.1
30	86	1
40	104	0.9
50	122	0.75
60	140	0.58
65	149	0.47
70	158	0.33
Cable Length		
m (ft)		Correction Factor
15.2 m (50 ft)		0.7

For example, an 18 AWG x 2 pin connector will have an 8-amp rating per wire, @ 50 C ambient temperature multiply by 0.75.
The number of conductors refers to electrically loaded conductors.

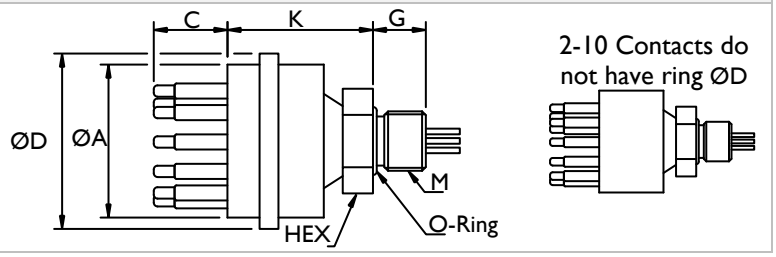
Standard Color Code					
Wire 1	Black	Wire 11	Black/White	Wire 21	White/Green
Wire 2	White	Wire 12	Black/Red	Wire 22	White/Orange
Wire 3	Red	Wire 13	Black/Green	Wire 23	White/Blue
Wire 4	Green	Wire 14	Black/Orange	Wire 24	White/Brown
Wire 5	Orange	Wire 15	Black/Blue		
Wire 6	Blue	Wire 16	Black/Brown		
Wire 7	Brown	Wire 17	Black/Yellow		
Wire 8	Yellow	Wire 18	Black/Gray		
Wire 9	Gray	Wire 19	Black/Violet		
Wire 10	Violet	Wire 20	White/Red		

These color codes may vary and are for reference only. Customers must always check pin / wire alignment before terminating. For Ethernet color coding see the Ethernet section.

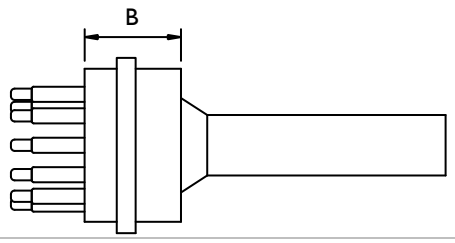
Manufacturer Compatibility Table												
	SC	MC	LP	LPM	FAWL FAWM	METAL SHELL	5500	RM	XSJJ	Legend		
SUBCONN	YG	YG*	YG	NA	NA	YG	NA	NA	NA		YG	YES GUARANTEED
SEACON	Y	Y	Y	N	YG	NA	L	YG	YG		Y	YES
IMPULSE	Y	Y	Y	YG	N	NA	NA	L	NA		L	LIKELY
BURTON	NA	NA	NA	NA	NA	NA	YG	NA	NA		N	NO
*	For MC 9-16 add suffix "-SU" or "-BIRNS"										NA	NOT APPLICABLE

STANDARD CIRCULAR (SC)

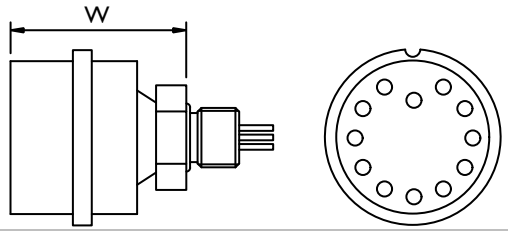
SCBH12MSS



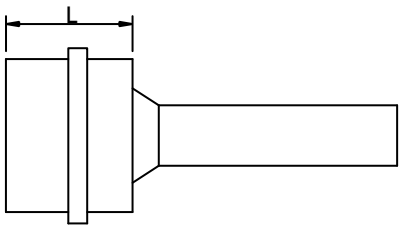
SCIL12M



SCBH12FSS

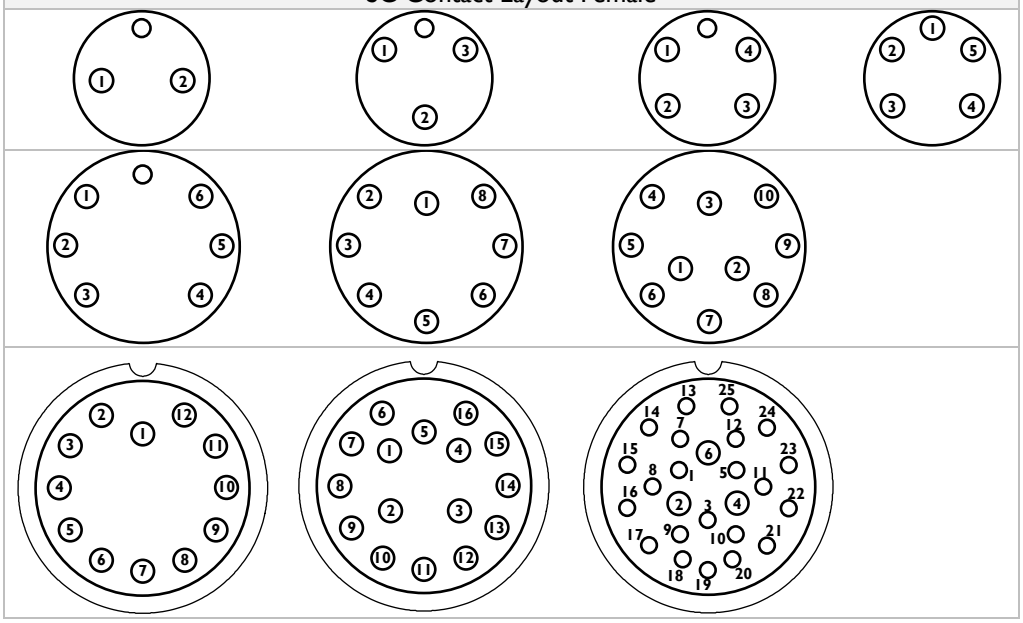


SCIL12F



#Contacts	ØA[mm]	B[mm]	C[mm]	ØD[mm]	K[mm]	G[mm]	L[mm]	W[mm]	M[Thread]	HEX[mm]	O-Ring	Locking Sleeve
2,3,4,5	25	19	19.5	NA	36	14 or 19	28.5	45	7/16-20 UNF	19	2-014	FLS-A, MLS-A
6,8,10	32	19	19.5	NA	41	14 or 19	28.5	50	5/8-18 UNF	24	2-017	FLS-B, MLS-B
12,16,25	40.5	25.5	19.5	46	38.5	14 or 19	28.5	45	5/8-18 UNF	24	2-017	FLS-C, MLS-C

SC Contact Layout Female



# Contacts	Cable OD [mm]	AWG
2	7.5	18
3	8.1	
4	9	
5	12.2	
6	12.3	
8	13.5	
10	15	
12	16	
16	18	
25	20	20

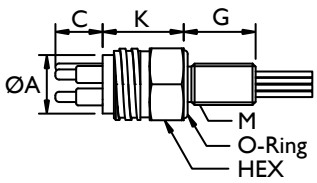
SC Part Number Format

SC	BH	4	M	SS
Series SC	Type*: BH, IL, DC, OM	Contact Num.	Gender F - Female M - Male	Options SS - Stainless Steel TT - Titanium

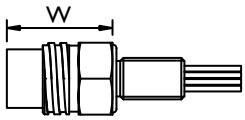
* BH – Bulkhead, IL – Inline, DC – Dummy, OM - Over Mold

HEAVY DUTY (HD)

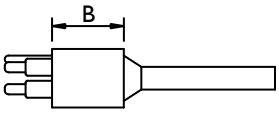
HDBH4MSS



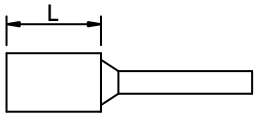
HDBH4FSS



HDIL4M

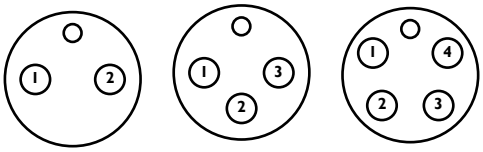


HDIL4F



# Contacts	A [mm]	B [mm]	C [mm]	K [mm]	G [mm]	L [mm]	W mm]	M [Thread]	HEX [mm]	O-Ring [Nitrile]	Locking Sleeve
2,3,4	25	19	14	30	14 or 19	28	39	5/8-18 UNF	24	2-017	FLS-MCA MLS-MCA

HD Contact Layout Female

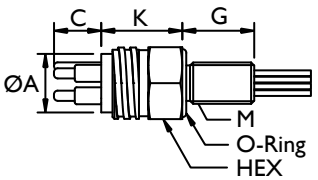


# Contacts	Cable OD [mm]	AWG
2	15.2	12
3	16.1	
4	17	

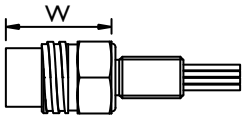
HD Part Number Format				
HD	BH	4	M	SS
Series HD	Type BH - bulkhead IL - inline DC - dummy OM - over mold	Contact Num.	Gender F - female M - male	Options SS - stainless steel TT – titanium

MINI CONNECTOR (MC)

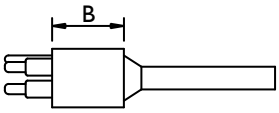
MCBH4MSS



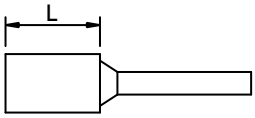
MCBH4FSS



MCIL4M



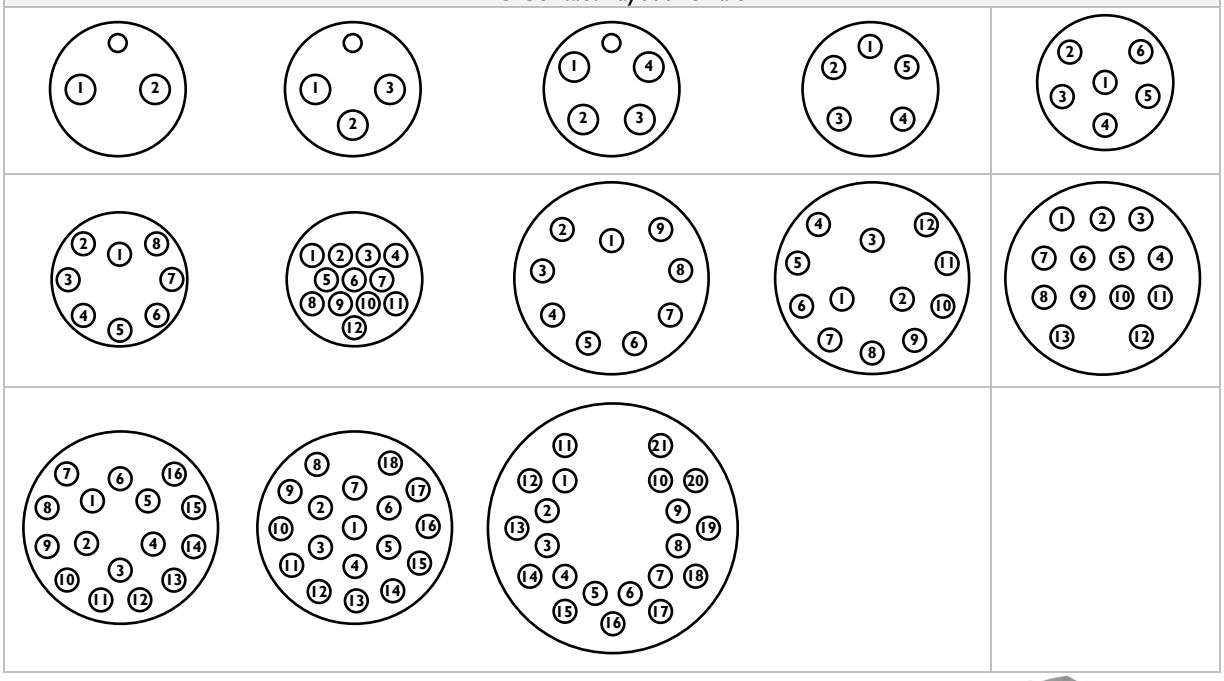
MCIL4F



# Contacts	A [mm]	B [mm]	C [mm]	K [mm]	G [mm]	L [mm]	W [mm]	M[Thread]	HEX[mm]	O-Ring	Locking Sleeve
2,3,4,5,6,8,12**	16	19	12.5	21.5	19	25	28	7/16-20 UNF	19	2-014	FLS-MC MLS-MC
*9,10,12,13,16,18	25	19	14	30	14 or 19	28.5	39	5/8-18 UNF	24	2-017	FLS-MCA MLS-MCA
21	32	19	14	41	14 or 19	28.5	50	5/8-18 UNF	24	2-017	FLS-B MLS-B

*9,10,12,16 BIRNS configuration. See "SU" for Subconn configuration.
*13 Typically Ethernet. Compatible with MCXX13-SU but with 'BIRNS' type body.
** Add suffix '-MINI' to designate the smaller 12 pin connector. I.e. MCBH12FSS-MINI

MC Contact Layout Female



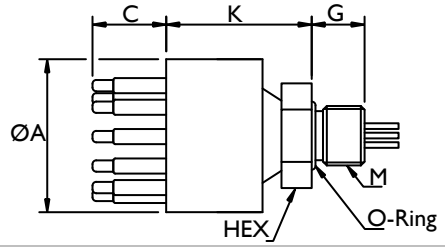
# Pins.	Cable OD [mm]	AWG
2	8	18
3	9.4	
4	10	
5	8	20
6	8	
8	10	
9	10	
10	10.5	
12-MINI	10	22
12	9	20
16	10.5	
18	10.5	
21	-	

MC Part Number Format

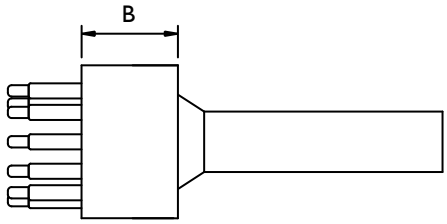
MC	BH	8	M	SS	-MINI	-RA
Series MC	Type BH - bulkhead IL - inline DC - dummy OM - over mold	Contact Num.	Gender F - female M - male	Options SS - stainless steel TT - titanium PK – peek AL - aluminum	Option 12 pin mini sized	Option RA - right angle

MINI CONNECTOR SUBCONN CONFIGURATION (MC-SU)

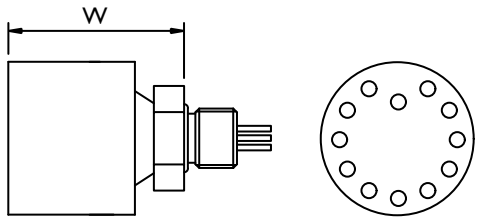
MCBH12MSS-SU



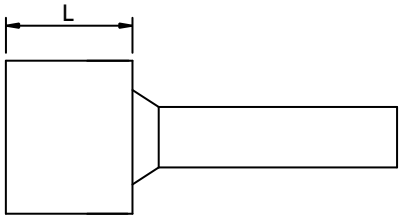
MCIL12M-SU



MCBH12FSS-SU



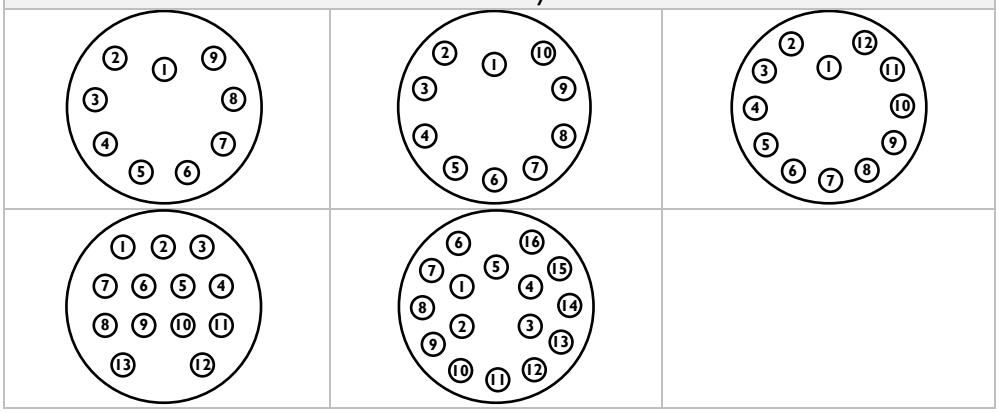
MCIL12F-SU



#Contacts	ØA[mm]	B[mm]	C[mm]	K[mm]	G[mm]	L[mm]	W[mm]	M[Thread]	HEX[mm]	O-Ring	Locking Sleeve
9, 10, 12, 13*, 16	25	19	19.5	36	14 or 19	28	45	1/2-20 UNF	24	2-017	FLS-A, MLS-A

*13 Typically Ethernet. Compatible with MCXX13-BIRNS but with 'SU' type body.

MC-SU Contact Layout Female



# Contacts	Cable OD [mm]	AWG
9	10	20
10	10.5	
12	11	
16	12	

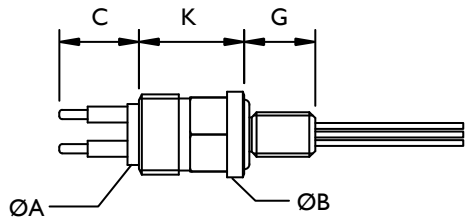
MC-SU Part Number Format

MC	BH	9	M	SS	-SU
Series MC	Type BH - Bulkhead IL - Inline DC - Dummy OM - Over mold	Contact Num.	Gender F - Female M - Male	Options SS - Stainless Steel TT - Titanium	Configuration SU – Subconn BIRNS - Birns

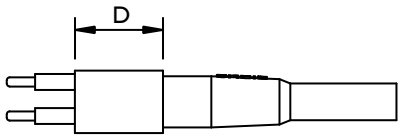
Order with the 'SU' suffix. For example MCIL9F-SU

TINY CONNECTOR (TC)

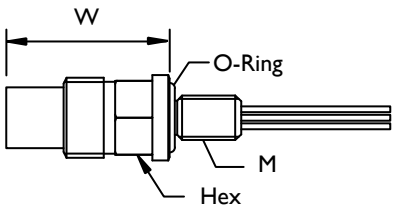
TCBH3MSS



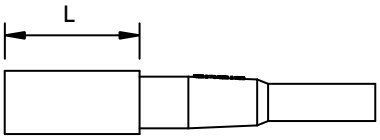
TCIL3M



TCBH3FSS

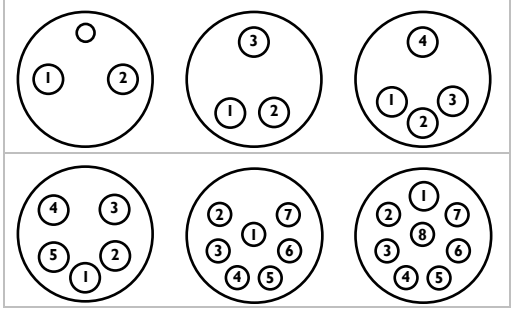


TCIL3F



# Contacts	ØA [mm]	ØB [mm]	D [mm]	C [mm]	K [mm]	G [mm]	L [mm]	W [mm]	M [Thread]	HEX [mm]	O-Ring [Nitrile]	Locking Sleeve
2,3,4,5,7	11	15	15.5	12	20.5	12.5	23.5	28.5	5/16-24 2A UNF	13	2-012	FLS-TC MLS-TC
8	11	15	15.5	12	20.5	12.5	23.5	28.5	7/16-20 2A UNF	13	2-013	FLS-TC MLS-TC

TC Contact Layout Female

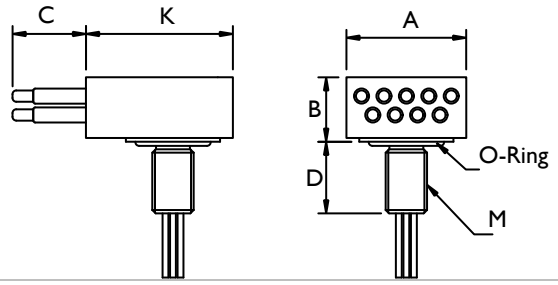


# Contacts	Cable OD [mm]	AWG
2	5.6	20
3	6.5	
4	5.5	
5	5.8	
7	6.0	22
8	7.5	24

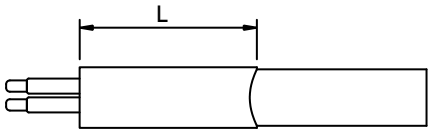
TC Part Number Format					
TC	BH	3	M	SS	-RA
Series TC	Type BH - bulkhead IL - inline DC - dummy OM - over mold	Contact Num.	Gender F - female M - male	Options SS - stainless steel TT - titanium PK - PEEK	Option Right angle

LOW PROFILE (LP) AND MINI LOWPROFILE (MCLP)

MCLPBH9MSS And LPBH9MSS

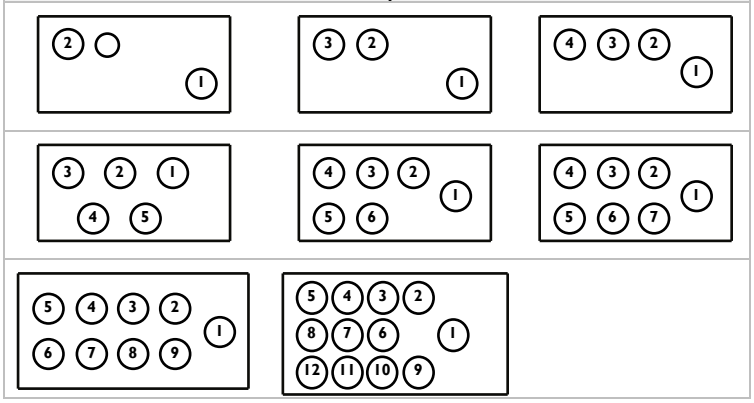


MCLPIL9M And LPIL9M

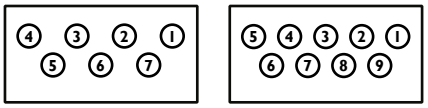


# Contacts	A [mm]	B [mm]	C [mm]	L [mm]	K [mm]	W [mm]	M [Thread]	O-Ring	Locking Strap
LP 2	22	14	19.5	42	32	19 Or 25	7/16-20 UNF	2-014	LPBH-RS
LP 3,4,5	25	14	19.5	42	32				LPBH-RS
LP 6,7	25	19	19.5	45	44				LPBH-RS
LP 9,12	31.5	21	19.5	45	45				LPBH-RS
MCLP 7,9	25	14	12.5	42	32				MCLP-RS

LP Contact Layout Female



MCLP Contact Layout Female

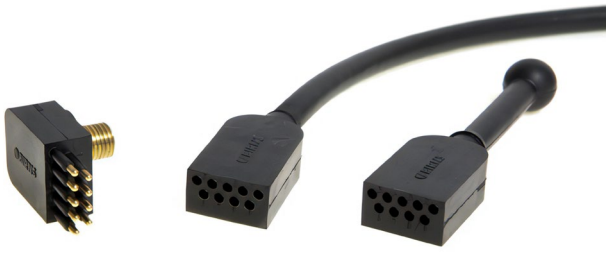


	LP		MCLP	
# Contacts	Cable OD[mm]	AWG	Cable OD[mm]	AWG
2	6	18	NA	NA
3	6.7			
4	7			
5	7.5			
6	7.5			
7	8	18	8.5	20
9	9.5		10	
12	10	20	NA	

LP And MCLP Part Number Format

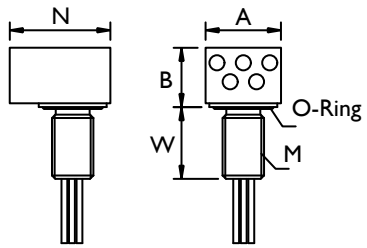
MCLP	BH	7	M	SS	_19MM
Series LP MCLP	Type* BH IL DC OM	Contact Num.	Gender F - Female M - Male	Options SS - Stainless Steel TT - Titanium Leave Empty For Brass	BH Thread Length 19MM 25MM

* BH – Bulkhead, IL – Inline, DC – Dummy, OM - Over Mold

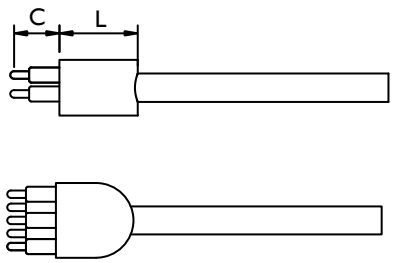


FAWL FAWM

FAWL-BH5FSS

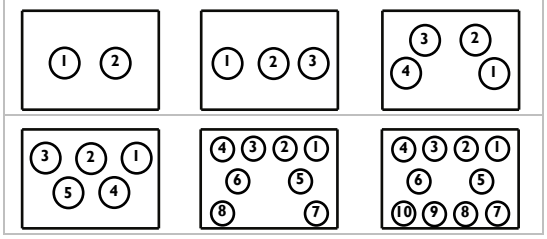


FAWL-IL5M



# Contacts	A[mm]	B[mm]	C[mm]	L[mm] Male	N [mm] Female	W[mm]	M[Thread]	O-Ring	Locking Strap
2,3,4,5 FAWL	20.5	14.7	14	21	31	12.5, 19, 25	7/16-20 UNF	2-014	FAWM-RS
8,10 FAWM	21	18	14	25.5	35.5	12.5, 19, 25	7/16-20 UNF	2-014	FAWM-RS

FAWL FAWM Contact Layout Female

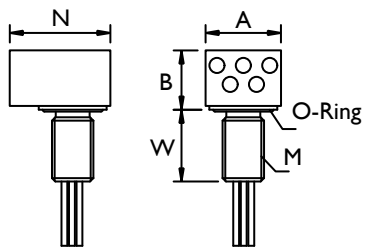


# Contacts	Cable OD [mm]	AWG
2	6	18
3	6.7	
4	7	
5	7.5	20
8	9.5	
10	10	

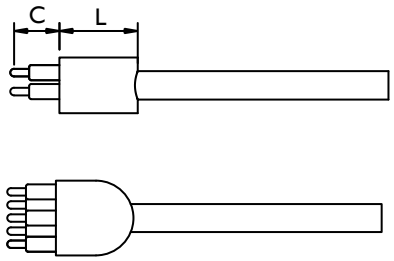
FAWL FAWM Part Number Format					
FAWL	-BH	2	M	SS	_19MM
Series FAWL FAWM	Type BH - bulkhead IL - inline DC - dummy OM - over mold	Contact Num.	Gender F - female M - male	Options SS - stainless steel	Thread Length 12.5MM 19MM 25MM Only for BH

LPM

LPMBH5FSS

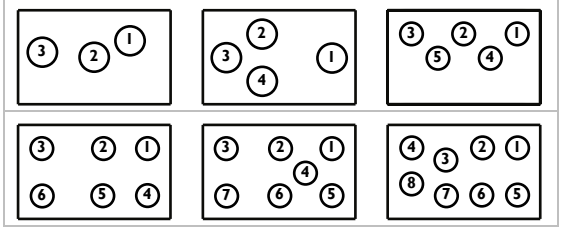


LPMIL5M



# Contacts	A [mm]	B [mm]	C [mm]	L [mm] Male	N [mm] Female	W [mm]	M[Thread]	O-Ring	Locking Strap
3,4,5,6,7,8	20.5	16.7	19	21	32.5	12.5, 19, 25	7/16-20 UNF	2-014	FAWM-RS

LPM Contact Layout Female



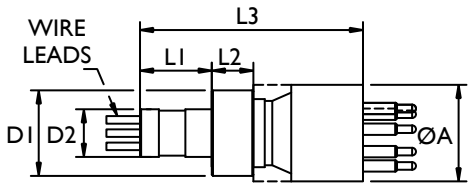
# Contacts	Cable OD [mm]	AWG
3	9.4	18
4	10	
5	8	20
6	8	
7	9	
8	10	

LPM Part Number Format

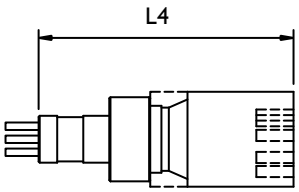
LPM	-BH	3	M	SS	_19MM
Series	Type BH - bulkhead IL - inline DC - dummy OM - over mold	Contact Num.	Gender F - female M - male	Options SS - stainless steel	Thread Length 12.5MM 19MM 25MM Only for BH

OVER MOLD (OM)

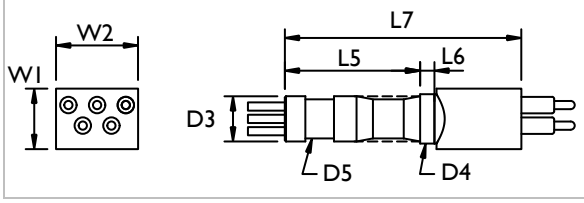
Circular OM Male



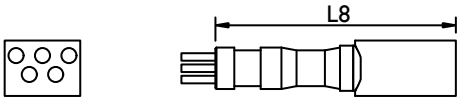
Circular OM Female



Rectangular OM Male



Rectangular OM Female

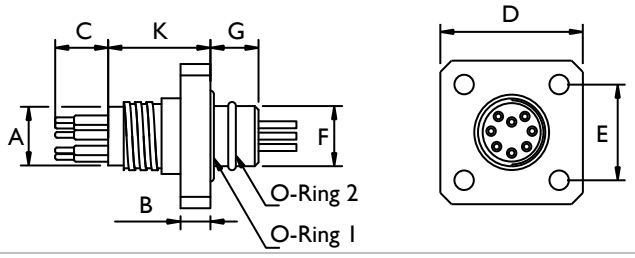


Circular OM connectors									
Series	#	Contact Range	Interface Dimensions [mm]						Ref Diameter
			D1	D2	L1	L2	L3	L4	ØA [mm]
TC	TCOM#	2 to 7	9-0.1	8-0.1	10±0.25	6.7±0.25	31.7	40	11
MC	MCOM#	2 to 8	13.4-0.1	10.8-0.1	20±0.25	15±0.25	55	60	16
		9 to 18	22.6-0.05	12.6-0.1	19±0.25	11-0.1	56.5	66	25
		21	25-0.1	15.8-0.1	19±0.25	11-0.1	56.7	66	32
SC	SCOM#	2 to 5	22.6-0.05	10.9-0.1	19±0.25	10.1-1	55.6	65	25
		6 to 10	25-0.1	15.8-0.1	19±0.25	11-0.1	56.7	66	32
		12 to 25	25-0.1	15.8-0.1	19±0.25	11-0.1	66	69	40.5
HD	HDOM#	2 to 4	22.6-0.05	12.6-0.1	19±0.25	11-0.1	56.5	66	25
Leads: 10 CM									

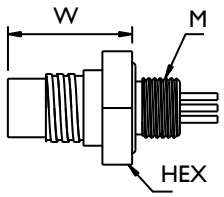
Rectangular OM connectors											
Series	#	Contact Range	Interface Dimensions [mm]						Reference Dimensions [mm]		
			D3	D4	L5	L6	L7	L8	W1	W2	D5
LP	LPOM#	2	11-0.1	12-0.05	22.2±0.1	4±0.1	71.2	71.2	14	22	10-0.1
		3,4,5	11-0.1	12-0.05	22.2±0.1	4±0.1	71.2	71.2	14	25	10-0.1
		6,7	13.4-0.1	16-0.05	20±0.1	10±0.1	81	81	19	25	13.4-0.1
		9,12	13.4-0.1	16-0.05	20±0.1	10±0.1	81	81	21	31.5	13.4-0.1
MCLP	MCLPOM	7,9	11-0.1	12-0.05	22.2±0.1	4±0.1	71.2	71.2	14	25	10-0.1
FAWL	FAWL-OM#	2,3,4,5	11-0.1	12-0.05	33±0.1	4±0.1	58	68	14.7	20.5	10-0.1
FAWM	FAWM-OM#	8,10	12-0.1	15-0.05	33.5±0.1	4±0.1	63	73	18	21	11-0.1
Leads: 10 CM											

METAL SHELL (MS)

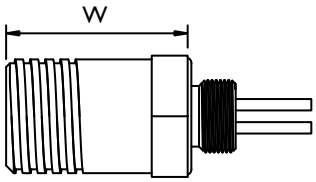
1500 FCR



1500 BCR

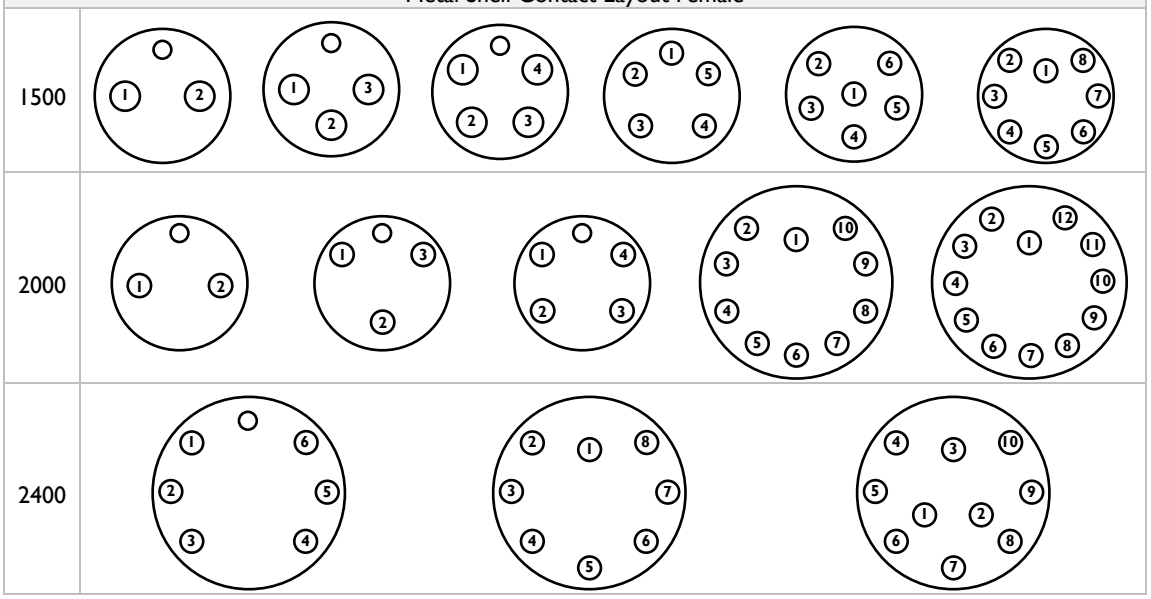


2000 BCR



Shell Size	O-Ring 1	O-Ring 2	HEX [mm]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	W [mm]	M [mm] [Thread]
1500	2-017	2-014	30	Ø 15.5	7.9	12.5	38.1	25.4 4 Holes x Ø 5.2	Ø 15.884 Ø 15.866	12.7	33	5/8-18 UNF 2A
2000	2-018	2-016	32	Ø 31.6	9.5	NA	44.4	31.75 4 Holes x Ø 6.7	Ø18.780 Ø18.759		48	¾-16 UNF 2A
2400	2-122	2-020	41	Ø 38.8	9.5	NA	50.8	38.1 4 Holes x Ø 6.7	Ø25.130 Ø25.110		48	1-14 UNS 2A

Metal Shell Contact Layout Female

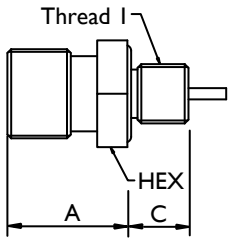


Series	Contact Num. VS. AWG	
	AWG 20	AWG 18
1500	5,6,8	2,3,4
2000	10,12	2,3,4
2400		6,8,10

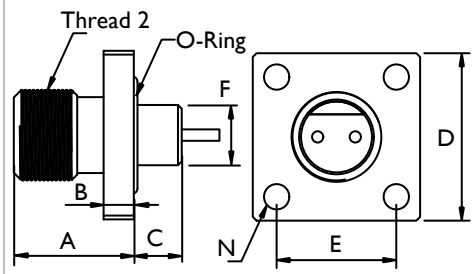
Metal Shel Part Number Format

FCR	15	02	M	SS
Type FCR - flange BCR - hex	Size 15, 20, 24	Contact Num.	Gender F - female M - male	Options SS - stainless steel only

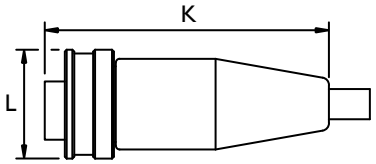
BCR 5507



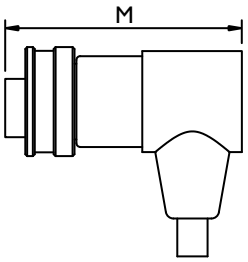
FCR 5506



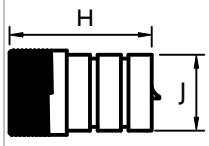
CCP 5501



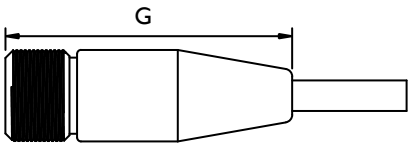
CCP RA 55R1



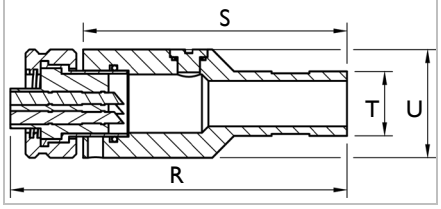
CCR AT 55A2



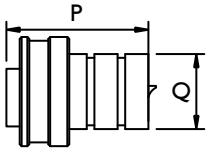
CCR 5502



PBOF 55P1



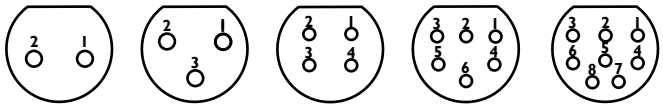
CCP AT 55A1



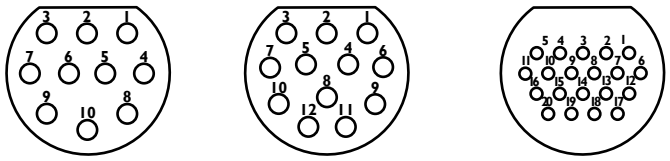
Shell Size	O-Ring	Thread 1	Thread 2	HEX [mm]	A[mm]	B[mm]	C[mm]	D[mm]	E[mm]	F[mm]	G[mm]	H[mm]	J[mm]
15	2-116	5/8-18 UNF	15/16-20	28.4 (1.12 IN.)	31.8	8	12.7	38	25.4	17.2	75	37.3	19.8
20	2-118	3/4-16 UNF	1-1/4-9	31.8 (1.25 IN.)	38	9.5	12.7	44.5	31.8	18.9	128	40.4	27
RFT											95		
24	2-122	1-14 UNF	1-1/2-9	38.1(1.5 IN.)	38.1	9.5	12.7	50.8	38.1	25.15	128	42.7	33.5

Shell Size	K [mm]	L [mm]	M [mm]	N [mm]	P [mm]	Q [mm]	R [mm]	S [mm]	T [mm]	U [mm]
15	75	27.7	70	5.2	39.4	17.3	96.52	69.85	17.07	28.45
20	128	38	85	7	42	27.7	102.62	74.68	17.07	38.1
RFT	95									
24	128	44.5	100	7.4	42.2	33.6	106.43	81.79	17.07	44.45

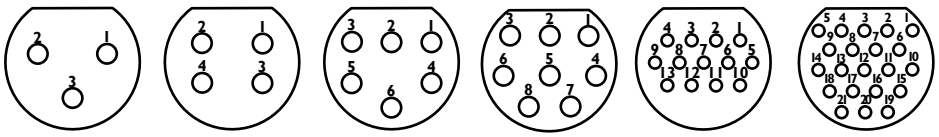
55 Series Contact Layout Female Shell 1500



55 Series Contact Layout Female Shell 2400

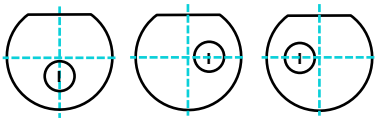


55 Series Contact Layout Female Shell 2000



RFT Contact Layout CCP

RFT-1-CCP RFT-3-CCP RFT-2-CCP



5500 SERIES Ordering Table					
55	0	1	-20	03	-0003
Series	A - Attachable C - Cap (dust cap) P - Pressure Balanced (oil filled) R - Right Angle 0 - 600V Standard	Type: 1 - CCP 2 - CCR 6 - FCR 7 - BCR	Size 15 20 24	Contact count	Length In Feet

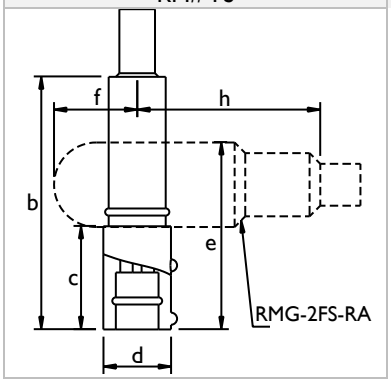
RFT Ordering Table			
RFT	-1	-CCP	-DC
Series	1 - Pin Position 1 2 - Pin Position 2 3 - Pin Position 3	Type: CCP CCR FCR BCR	DC Dummy

Example	Description	Legacy Ref.
RFT-1-CCP	RFT Cable Connector Plug POSITION 1	RFTF-1
RFT-2-CCP	RFT Cable Connector Plug POSITION 2	RFTF-2
RFT-3-CCP	RFT Cable Connector Plug POSITION 3	RFTF-3
RFT-1-CCR	RFT Cable Connector Receptacle POSITION 1	RFTM-1
RFT-2-CCR	RFT Cable Connector Receptacle POSITION 2	RFTM-2
RFT-3-CCR	RFT Cable Connector Receptacle POSITION 3	RFTM-3
RFT-1-BCR	RFT Bulkhead Connector Receptacle POS 1	NA
RFT-2-BCR	RFT Bulkhead Connector Receptacle POS 2	NA
RFT-1-CCPx0.35M	RFT-1-CCP with 0.35 Meter pigtail	
RFT-2-CCPx0.19Mx2Mx2M	Y Assembly: RFT-2-CCP with 0.19M lead to junction With two additional 2M leads	

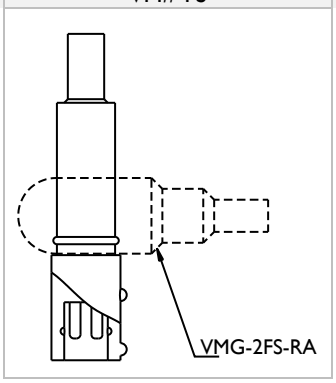
Series	Contact Num. VS. AWG		
	AWG4	AWG18	AWG16
55 Size 1500		4,6,8	2,3
55 Size 2000		13,21	3,4,6,8
RFT	1		
55 Size 2400		20	12,10

RUBBER MOLDED (RM)

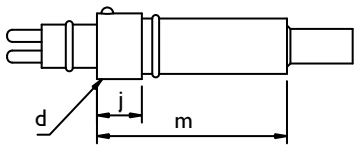
RM#-FS



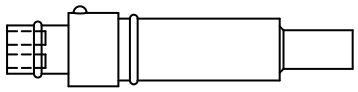
VM#-FS



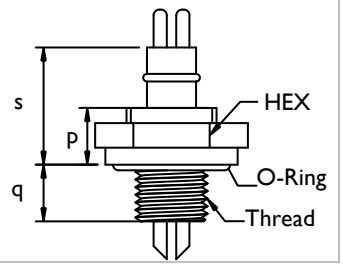
RM#-MP



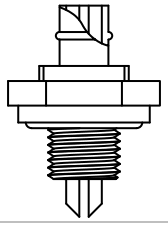
VM#-MP



XS#

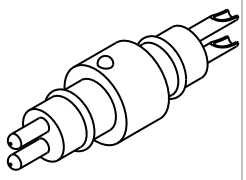


VS#

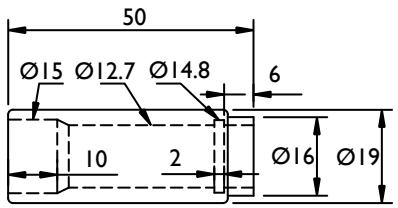


RMG-#MP-AT

RMG-2MP-AT



RMG-AT-BOOT

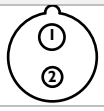
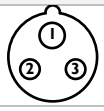
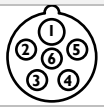
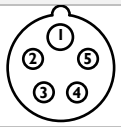
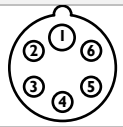


Cable Connector RM and VM, Dimensions in [mm]								
Size	-FS					-MP		
	b	c	e	f	h	Ød	j	m
A	65	36	N/A	8.9	28	8	16	49.5
G	73.5	28.5	54	19	47	19	13	58.5
K	68	41	68	19	47	27	19	46

Bulkhead Connector VS and XS									
Size	Bulkhead Type	Designator	Dimensions in [mm]				O-Ring	Thread	Locking Sleeve
			p	q	s	HEX			
A	Solder Cups	VS#-BCL XS#-BCL	4.6	15.7	14.5	11.2	2-012	5/16-24 UNF-2A	FLS-A-RM
G	Wire Leads	VSG-PBCLM	14	12.7	30	23.9	2-017	1/2-20 UNF-2A	FLS-G
	Wire Leads - High Pressure	XSG-BCL-HP-SS	21	10	37				
K	Solder Cups	VS#-BCL XS#-BCL	16	16	32	35	2-213	3/4-16 UNF-2A	
			16	25.4	28.6	41	2-217	1-14 NS-2A	FLS-K

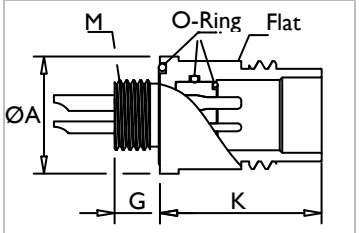
Mating Options	
Cable Connector	Mating Bulkhead Connectors
RM#-FS	RM#-MP
	XS#-BCL
	XS#-PBCLM
VM#-FS	VM#-MP
	VS#-BCL
	VS#-PBCLM

Size	Contact Num. VS. AWG	
	AWG18	AWG16
A	1	
G	1,2,3,4,5,6	
K		1,2,3,4,5,6,8

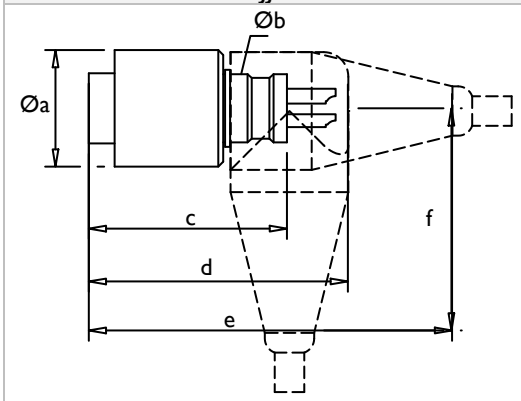
Contact Layout	
A	G
	  
K	
	 

RM Part Number Format					
RM	G	-6	FS	-AT	-BCL
Type cable connector RM VM Bulkhead connector XS VS	Size A G K	Contacts.	Gender FS – female Socket MP – male plug FSD – FS dummy MPD – MP dummy	Options AT – attachable RA – right angle RADIAL – #6 pin only see layout	XS And VS Bulkheads BCL – solder cups PBCLM – wires, availability: VSG-2-PBCLM VSG-3-PBCLM VSG-4-PBCLM BCL-HP-SS – wires, high pressure availability: XSG-2-BCL-HP-SS XSG-3-BCL-HP-SS XSG-4-BCL-HP-SS XSG-5-BCL-HP-SS XSG-6-BCL-HP-SS

MSXJJ-BCR

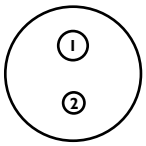
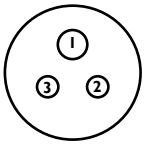
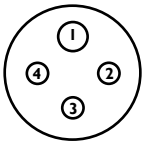
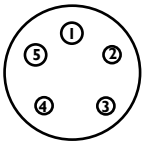
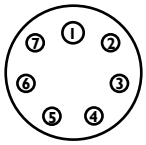
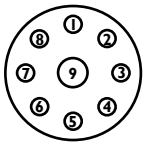


XSJJ-CCP



MSXJJ-BCR					
[mm]				M[Thread]	O-Ring
ØA	G	K	Flat		
23.8	9.2	32.8	22	9/16-18 UNF-2A	5-254 2-015 5-058

XSJJ-CCP					
Unterminated connector [mm]			Molding* [mm]		
Øa	Øb	c	d	e	f
23.6	13.8	40.2	67	86	50

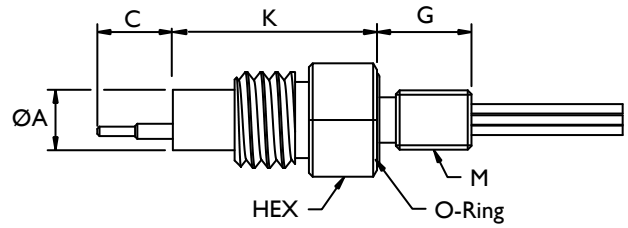
Receptacle (Male Pins) Contact Layout					
					
1#14 1#16	1#14 2#16	1#14 3#16	2#16 3#20	1#16 6#20	1#14 8#20

XS GRE Part Number Format		
MSXJJ	-2	-BCR
Sub family XSJJ MSXJJ Future availability* MSXEE, XSL, MSXL MSXM	Contacts 2-9	Type BCR Bulkhead Connector Receptacle CCR Cable Connector Receptacle CCP Cable Connector Plug

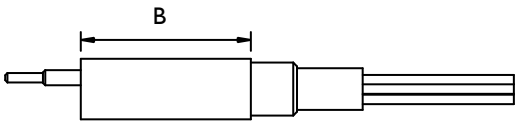
*Future Availability, inquire for options

HERMAPHRODITIC

NABH4

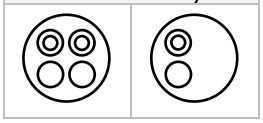


NAIL4



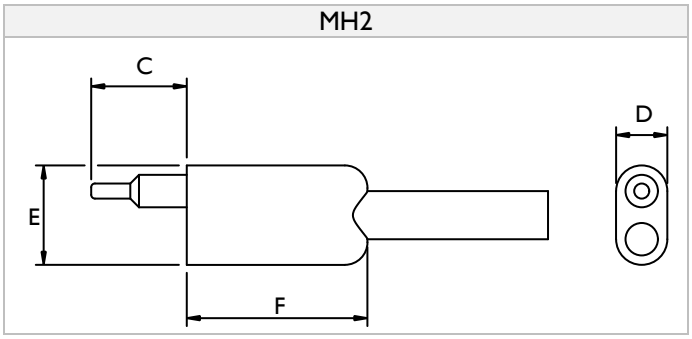
# Contacts	A [mm]	B [mm]	C [mm]	K [mm]	G [mm]	M[Thread]	HEX[mm]	O-Ring	Locking Sleeve
2,4	10	22.5	11	25	12.5	5/16-24 2A UNF	15	2-012	FLS-NA, MLS-NA

Nano Contact Layout



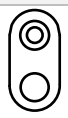
NANO Data Table		
Number of contacts	2	4
PN cable connector	NAIL2	NAIL4
PN bulkhead	NABH2	NABH4
AWG	20	

MH2



# Contacts	C [mm]	D [mm]	E [mm]	F [mm]
2	12.7	6.8	13.2	24

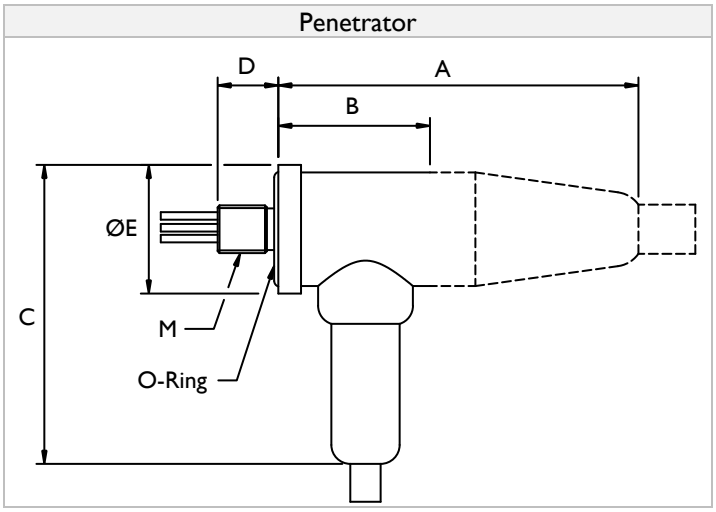
MH Contact Layout



MH Data Table	
Number of contacts	2
Cable dim [mm]	6.4
Ordering number single cable lead	MH2
Ordering number dual cable lead	MH2-DW
AWG	20

PENETRATOR (PN)

Penetrator

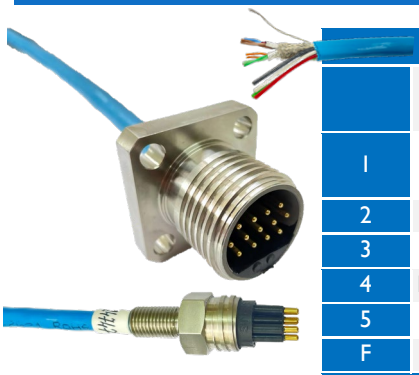


	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	O-Ring [Nitrile]	M Thread
Size B	63.5	28.2	60.5	16	25.4	2-017	1/2-20 UNF-2A
Size C	106	36	67	25	38	2-213	3/4-16 UNF-2A

# Contacts	Cable OD [mm]	AWG
2	7.5	18
3	8.1	
4	9	
5	12	
6	12.3	
7	13	
8	13.5	

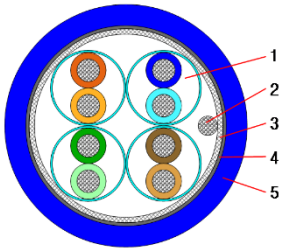
Penetrator Part Number Format			
PN	-B	-6	-RA
Series	Size B C	Contact Num. Size B - 1,2, 3, 4, 6, 8,9 Size C - 1,2, 3, 4, 6, 8,9,10	Options RA - right angle

ETHERNET

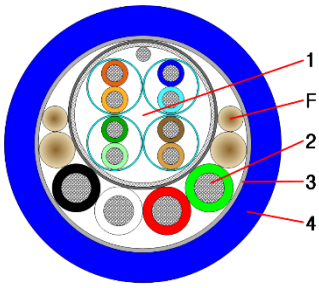


Cable Build		
	Ethernet: Cat 6	Hybrid: Cat 6 + Power
1	twisted pairs shielded 100%	Cat6 Cable
2	Drain AWG26	4 x AWG18
3	Outer braid 80% coverage	
4	Non-woven tape	12mm OD.
5	7.3mm OD.	NA
F	NA	Filler
Jacket Material: TP		

Ethernet: Cat 6



Hybrid: Cat 6 + Power



Compatibility			
Birns Aq.	Ref Company	Ref PN	Compatibility
TCXX8-ETH	**Smallest marine Ethernet connector on the market**		
SCXX8-ETH	Subconn	DXX8X	NO
MCLPXX9-ETH		DLPXX9X	YES
MCXX13-ETH13		DXX13X	YES **SEE NOTE***
550X-1508-ETH	Eaton Burton	550X-1508-EXXX	YES
550X-2013-ETH13		550X-2013-EXXX	YES

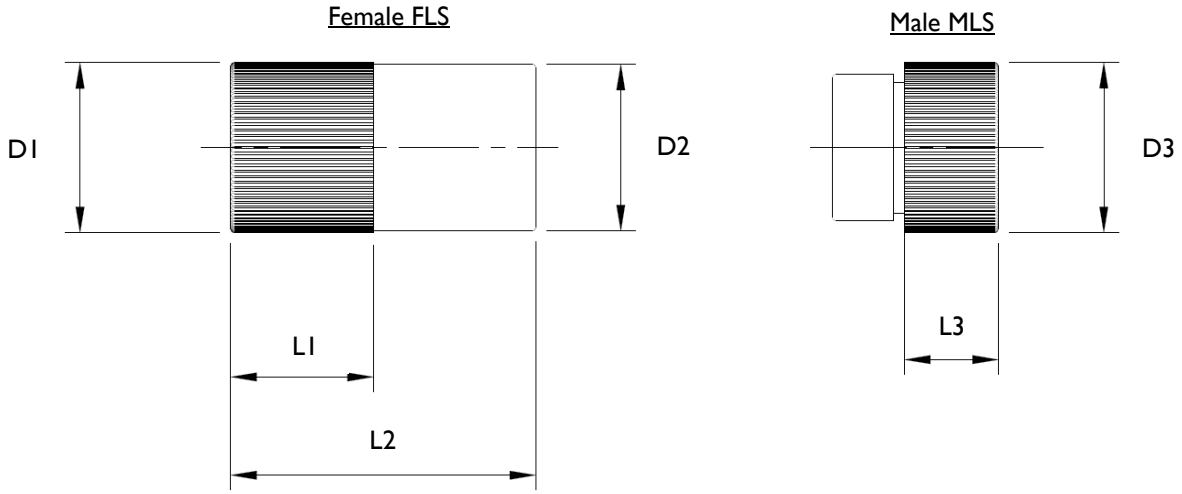
* MCBH13-BIRNS-ETH13 threading differs from MCBH13-SU-ETH13. See MC page.

Ethernet Specification		
Designator	-ETH	-ETH13
Type	Ethernet: Cat 6	Hybrid: Cat 6 + Power
Power	NA	AWG18x4
Volt Rating	150v	500v
Ethernet	Cat6 Patch AWG24 x 8	
Data Rate	1Gbs up to 60 m.	1Gbs up to 30 m.
Cable OD	8mm	12mm
Bend Rad.	6 x OD =~44mm	6 x OD =~72mm
Standard Cable Length	Bulkhead / Cable Connector = 1M Over Mold connector = 0.1M	
RJ45 Jack	Simply45: S45-1755P, hookup: T568B Supplied without RJ45 jack. To order RJ45 jack: -Unterminated RJ45 use P/N: S45-1755P -Terminated* RJ45 use P/N: RJ45-TRM	
*Do not pre-terminate RJ45 on bulkhead smaller then 5/8" thread.		

Ethernet Part Number Format		
Ethernet add "-ETH" Ethernet + Power add "-ETH13"		
Series	Bulkheads	Cable Connector
TC	TCBH8FSS-ETH	TCIL8M-ETH
MC	MCBH8FSS-ETH	MCIL8M-ETH
	MCBH13MSS-BIRNS-ETH13	MCIL13M-BIRNS-ETH13
	MCBH13MSS-SU-ETH13	MCIL13M-SU-ETH13
SC	SCBH8FSS-ETH	SCIL8M-ETH
	SCBH16MSS-ETH13	SCIL16F-ETH13
MCLP	MCLPBH9FSS-ETH	MCLPIL9M-ETH
FCR/BCR	FCR1508MSS-ETH	MCIL8F-ETH
LP	LPBH9FSS-ETH	LPIL9M-ETH
FAWM	FAWM-BH8MSS-ETH	FAWM-IL8F-ETH
	FAWM-BH10MSS-ETH13	FAWM-IL10F-ETH13
5500	5506-2008-ETH	5501-2008-ETH
	5506-2013-ETH13	5501-2013-ETH13
ETH13 Application: Bulkhead and Over Mold: Cat6 + separate power leads. Cable Connector: Hybrid cable, Cat6+power Integrated.		
Over Mold - replace 'IL' with OM. For instance, MCIL8F-ETH becomes MCOM8F-ETH		

Wire Color Code - Ethernet			
Wire #	Connector Contact Count		
	8 Wires	9 Wires	10+ Wires
1	Brown*	Brown*	Black
2	Light Brown*	Light Brown*	Screen
3	Blue*	Blue*	White
4	Light Blue*	Light Blue*	Brown*
5	Orange*	Orange*	Light Brown*
6	Light Orange*	Light Orange*	Blue*
7	Green*	Green*	Light Blue*
8	Light Green*	Light Green*	Orange*
9		Screen	Light Orange*
10			Green*
11			Light Green*
12			Red
13			Green
14+	Standard color code		
*	Twisted pairs		

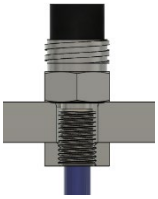
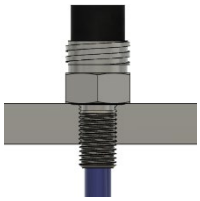
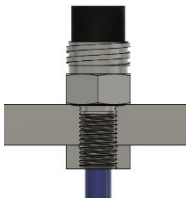
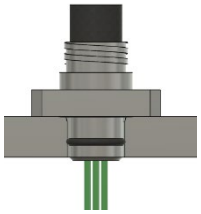
LOCKING SLEEVES

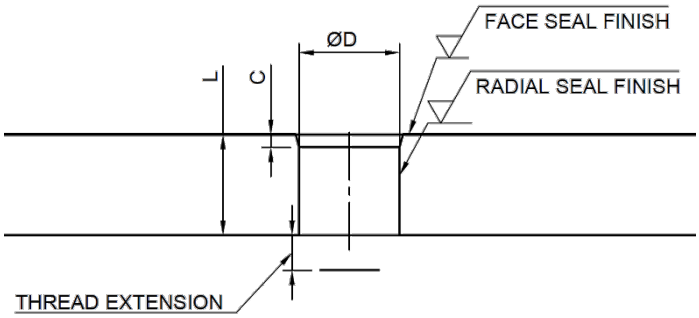


PN	Reference PN	Application	D1 [mm]	D2 [mm]	D3 [mm]	L1 [mm]	L2 [mm]	L3 [mm]
FLS-A MLS-A	DLSA-F DLSA-M	SC 2-5 MC-SU 9-16	34	33	34	16	32	23
FLS-B MLS-B	DLSB-F DLSB-M	SC 6-10 MC 21	40	39	39	16.5	32.5	23
FLS-C MLS-C	DLSC-F DLSC-M	SC 12, 16, 25	59	59	59	30	30	19.5
FLS-MC MLS-MC	MCDLS-F MCDLS-M	MC 2-8 METAL SHELL 1500	23	22.5	23	19.3	41.3	12.7
FLS-MCA MLS-MCA		MC 9-18 Birns HD 2-4	34	33	34	26.7	52.7	23
FLS-TC MLS-TC		TC	17.3	16.5	16.5	20	36	10
FLS-NA MLS-NA		NANO	17.3	16.5	16.5	20	40.5	15.5
LS2000		METAL SHELL 2000	34	33	NA	16	32	NA
LS2400		METAL SHELL 2400	40	39	NA	16.5	32.5	NA
FLS-A-RM MLS-A-RM	A-FLS-D A-MLS-D	RM size A	17	12.7	17	13.6	45.6	13.5
FLS-G MLS-G	G-FLS-D G-MLS-D	RM size G	28.5	27.5	28.5	22	34.7	11
FLS-K MLS-K	K-FLS-D K-MLS-D	RM size K	36	36	38.1	48	48	17.8

Note:
Material: Delrin Black
Available Stainless Steel: FLS-A-SS; FLS-MC-SS; MLS-MC-SS; LS2000-SS;

APPLICATION GUIDELINES

Connector Mounting Configurations			
Straight Hole + Nut	Threaded Hole	Threaded Hole + Nut	Flange
			
Standard application, Enables orientation adjustment	Used in limited space / access application. Or if wall thickness prevents nut	Used to prevent accidental release.	Enables radial seal as well as face seal. Better connector orientation, accuracy and fastening access. More expensive.



Mounting Hole Dimensions					
Connector	D		C [mm]	L [mm]	Thread Extension* [mm]
	Straight Hole [mm]	Threaded Hole			
5/16"-24 UNF	8.12±0.1	5/16-24 UNF	0.2 MAX x 45°	NA	4.2
7/16"-20 UNF	11.29±0.1	7/16-20 UNF			5.1
1/2"-20 UNF	12.88±0.1	1/2"-20 UNF			5.1
5/8"-18 UNF	16.05±0.1	5/8-18 UNF			5.6
3/4"-16 UNF	19.23±0.1	3/4-16 UNF			6.4
1"-14 UNS	25.58±0.1	1-14 UNS			7.3
FCR1500	15.9+0.027	NA	1.5 x 15°	13 min	NA
FCR2000	18.8+0.033				
FCR2400	25.15+0.033				
FACE/ RADIAL SEAL FINISH N7 (Ra 1.6) or better on O-ring contact surfaces.					
*Thread Extension - recommended minimal values when using nut. Calculated for approximately 4 rotations					

Closing Torque		
Thread	Stainless Steel Or Titanium	
	lb-ft	Nm
5/16"-24 UNF	3	4
7/16"-20 UNF	9	13
1/2"-20 UNF	14	19
5/8"-18 UNF	27	37
3/4"-16 UNF	42	57
1"-14 UNS	67	90
*Brass or Aluminum 70% of listed **PEEK or GRE 30% of listed		

Maintenance
Before mating use PTFE based lubricant such as Super Lube® by Synco (grease for O-rings and aerosol for connectors) For cleaning use contact cleaner (isopropyl alcohol) or soap and water. For longest life clean connectors after each job, dry, relubricate, and cover until ready for next job.

Caution!

The use of electrical connectors in or near water poses significant risks, including electrical shock, injury, or property damage. The purchaser or any subsequent party assumes full responsibility for the safe and proper application of this product. It is strongly recommended that a licensed electrician assess and verify the integrity of the power supply, including the presence of adequate fault interruption safeguards, prior to use. The manufacturer and seller disclaim liability for any consequences resulting from improper or unsafe use, installation, or handling by any party

DISTRIBUTORS

Americas					
North America	USA	New England	**Electronic Sales Of New England**	33 Main St., Unit E Old Saybrook, CT 06475	sales@esalesne.com www.esalesne.com
		Mid-Atlantic	**Lindgren Associates, Inc.**	8711 Plantation Lane Manassas, VA. 20110	www.LindgrenAssociates.com
		Gulf Coast	**Cis Interconnect**	2580 Broadway ST. San Leon Texas 77539	www.cis-interconnect.com
	Canada		**Axsub Inc.**	112, Montée Industrielle Rimouski, Québec, G5M 1B1	sales@axsub.com www.axsub.com
South America	Brazil:		**Mako Services Ltd.**	Av. Beira Mar, no 262 Sl 704 – Castelo 20021-060 Rio de Jaaneiro	www.makoservices.com.br

Asia				
East Asia	China	**Shanghai Linkearth Electronics Co.,Ltd**	Room 403, NO. 1455 Pingcheng Road Jiading, Shanghai, China 201899	www.linkearthelec.com
		Shanghai Rock-Firm Interconnect Systems Co Ltd	Block B, 23th Floor, No.33 Fushan Road,Shanghai, China P.C. 200120	www.rock-firm.com
		Shanghai P-Nav Scientific	Instruments Co.,Ltd Rm3A08 Bld B North Block E-Link World 999 HuaXu Road, Shanghai,China 201702	Sales@P-Nav.com.cn www.P-Nav.cn
	Japan	**Cosmos Shoji Ltd**	Sanyo Yasuda Bld. 7F 2-11, Kanda Nihiki-Cho, Chiyo-Ku, Tokyo 101-0054 JAPAN	www.cosmos-shoji.co.jp
	Korea	**K2 Korea Co. Ltd.**	404-50, Sangjiseok-gil, Paju-si, Gyeonggi-do, Republic of Korea. 10911 Tel. +82-31-941-8047	www.connector24.co.kr
Southeast Asia	Singapore	**Sea And Land Technologies**	Block 2029, Bukit Batok Industrial Park A #01-290, Singapore 2365	www.sea-landtech.com
South Asia	India	**Polar Technologies**	129, First Floor, ABW Rectangle One Building, Saket , District Center, New Delhi-110017	polar@polartech.org www.polartech.org

Europe				
Central Europe	Germany	**Develogic Gmbh**	Subsea Systems Hammer Deich 70 D-20537 Hamburg	sales@develogic.com www.develogic.com
Western Europe	United Kingdom	**Scorpion Oceanics Ltd.**	Unit 2, Park Farm Gt. Chesterford Essex, CB10 1RN	www.scorpionoceanics.co.uk
	Holland	**Seascape**	De Hoogjens 24 4254 XW Sleeuwijk	www.seascapesubsea.com
	Belgium + France	**De Zeeman Pro**	Steenhoevestraat, 4 B-2800 Mechelen Belgium	info@dezeeman.be www.dezeeman.com
Northern Europe	Norway	**Norwegian Electronic Supply A/S**	PB 83, Gamle Vormedalsvei 11 5544 Vormedal	post@supply.as www.supply.no
Southern Europe	Italy	**Telesub Lanterna S.R.L.**	Via Vincinella 15 19035 - Ponzano Magra (SP)	info@telesublanterna.com www.telesublanterna.com/en/contacts/
	Spain	**Conectores Y Cables Vaher Sl**	C/ Malcampo 14 Local | CP 28002 | Madrid	vaher@vahersl.com www.vahersl.com

Australia		
TechNautics	11 Mews Rd. Fremantle, WA Australia 6160	www.technautics.com.au

South Africa		
Marine Solutions	22 Carlisle Street Paarden Eiland Cape Town 7420	info@marinesolutions.co.za www.marinesolutions.co.za

Israel		
Zevulun Marine Systems Ltd.	Halutsei HaTa'asiya 7 Kiryat Malachi Israel 8305747	sales@zevulun.biz www.zevulun.biz