



Material and spec

Coupling	Threaded
Shell material	Zinc alloy with chrome plating
Insert material	PPS, max temperature 260°C
Contact material	Brass with gold plating
Termination	Solder: Ø1, Ø1.5, Ø2.5, Ø3.5, Ø5.5mm Crimp: Ø1, Ø1.5, Ø2.5, Ø3.5, Ø5.5, Ø10 mm Screw: Ø1, Ø1.5, Ø2.5, Ø3.5, Ø5.5, Ø10 mm
Mating cycle	500
Temperature range	-40°C ~ +85°C

★ Solder contact spec see page P21

★ Crimp contact spec see P22

★ Screw contact spec see P23

● **Remarks :** The rated current decreases according to the number of contacts, more contacts, less rated current.

Number of contact	1~3	4~10	11~20	21~30	31~40	41~50	51~61
Rated current decrease rate (%)	0	10	20	30	40	50	60

● WS Series

Part number system



Series code

Panel hole cutout diameter

16、20、24、28、32、40、48、55

Contact gender

J: Male contact

K: Female contact

Number of solder contact:

2、3、4、5、6、7、8、9、10、11、
12、13、15、16、17、19、20、24、
26、27、31、35、38、40、42、53、61

Number of crimp contact:

1、2、3、4、5、6、7、8、9、10、
12、15、19、31、38、42、61

Termination type:

- 1: Solder
- 2: Screw (for Ø2.5, Ø3, Ø3.5mm contact)
(Ø2.5, Ø3, Ø3.5mm)
- 3: Crimp

Shell structure and cable fix type :

- Z: Square flange receptacle
- ZM: Round flange receptacle
- ZMQ: Front-nut-mount receptacle
- ZG: 2-hole flange receptacle

注: 不同芯数接插后电流对照表见P17-01

★ Each side can be male or female contact

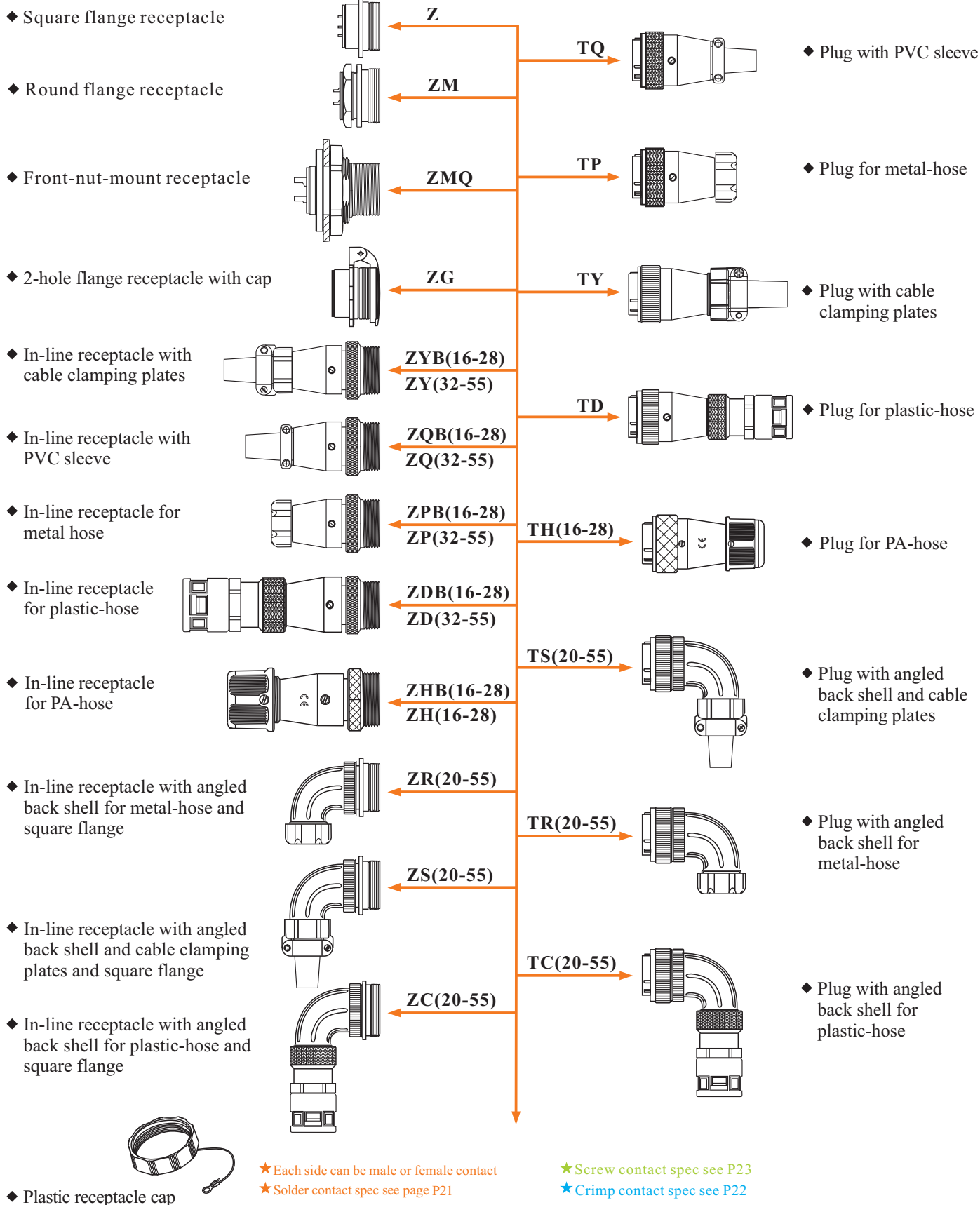
Straight

- ZYB: Receptacle with cable clamping plates B (for WS16-28)
- ZY: Receptacle with cable clamping plates (for WS32-55)
- T Q: Plug with PVC sleeve
- ZQB: Receptacle with PVC sleeve B (for WS16-28)
- ZQ: Receptacle with PVC sleeve (for WS32-55)
- T P: Plug for metal hose
- T Y: Plug with cable clamping plates
- ZPB: Receptacle for metal hose B (for WS16-28)
- ZP: Receptacle for metal hose (for WS32-55)
- T D: Plug for plastic hose
- ZDB: Receptacle for plastic hose B (for WS16-28)
- ZD: Receptacle for plastic hose (for WS32-55)
- TH: Plug for PA-hose (for WS16-28)
- ZHB: In-line receptacle for PA-hose B(for WS16-28)
- ZH: In-line receptacle for PA-hose (for WS16-28)
- ZQF: In-line receptacle with PVC sleeve and square flange(for WS16-55)
- ZYF: In-line receptacle with cable clamping plates and square flange(for WS16-55)
- ZPF: In-line receptacle for metal-hose and square flange(for WS16-55)
- ZDF: In-line receptacle for plastic-hose and square flange(for WS16-55)
- TX: Plug with strain relief (for WS28)
- ZXB: In-line receptacle with anti-bending sleeveB (for WS28)

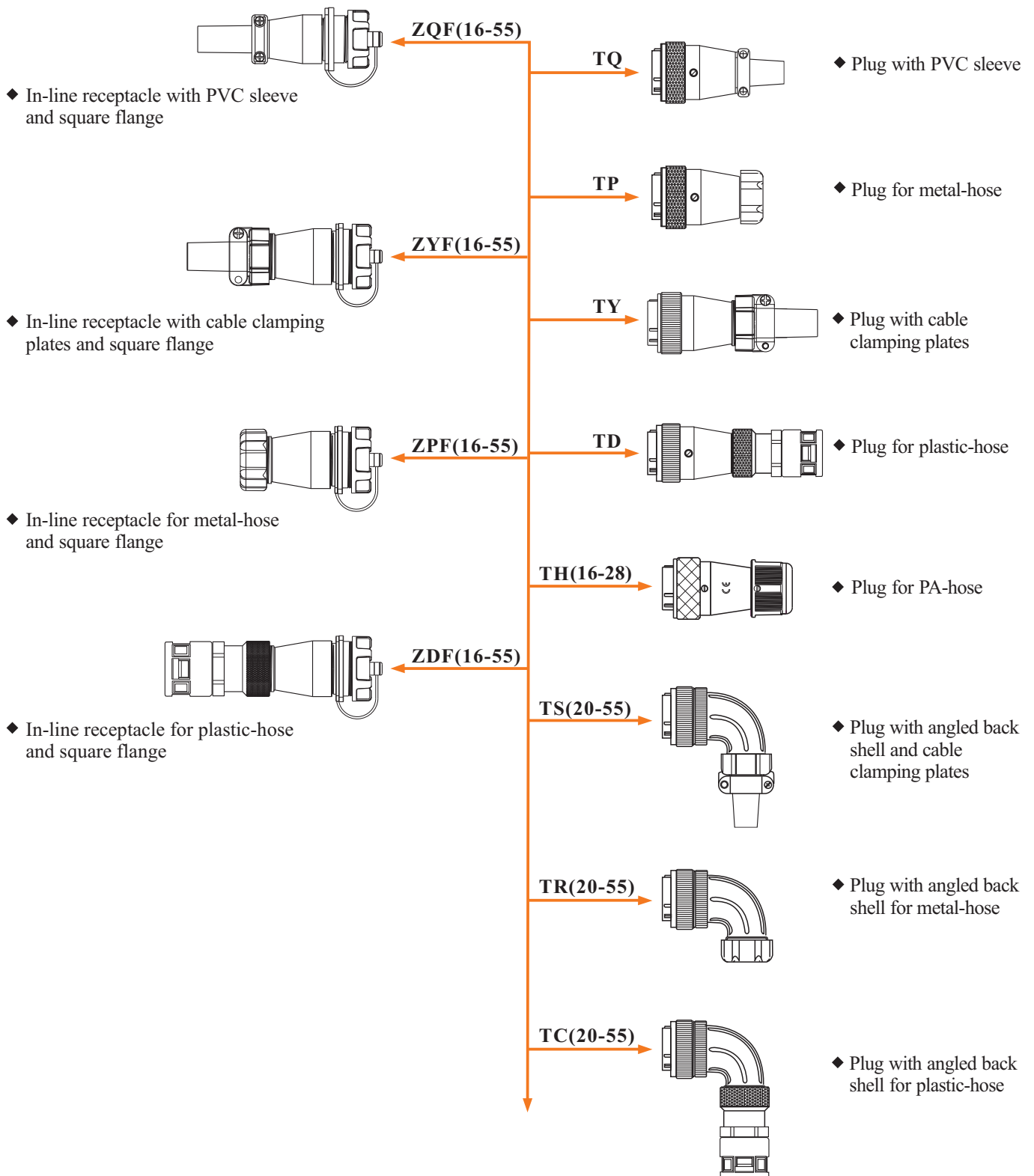
Angled

- T R/ ZR: Plug / receptacle for metal hose(for 20-55)
- TS / ZS: Plug / receptacle with cable clamping plates(for 20-55)
- T C/ ZC: Plug / receptacle for plastic hose(for 20-55)

WS Series Mating diagram (1)



WS Series Mating diagram (2)

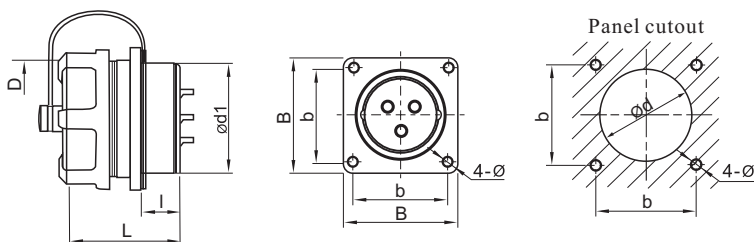


★ Each side can be male or female contact
★ Solder contact spec see page P21

★ Screw contact spec see P23
★ Crimp contact spec see P22



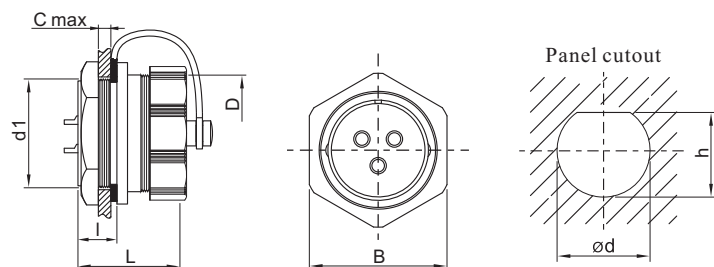
● Square flange mount receptacle: Z



Dimension(mm)	WS16	WS20	WS24	WS28	WS32	WS40	WS48	WS55
ød1	15.8	19.8	23.8	27.8	31.8	39.8	47.8	54.8
D	M18X1	M22X1	M26X1	M30X1	M35X1.5	M44X1.5	M52X1.5	M59X1.5
I	9.7	10	10	10	14.4	14.2	14.2	14
L	21.6	23	23	23	34	34	34	34
b	20	22	26	30	32	40	48	52
B	26	29	32	36	42	50	58	64
ød	16.5	20.5	24.5	28.5	32.5	40.5	48.5	55.5
Ø	3.2	3.2	3.2	3.2	3.5	4.5	4.5	4.5

The cap for WS16 is optional, for other models is default configuration

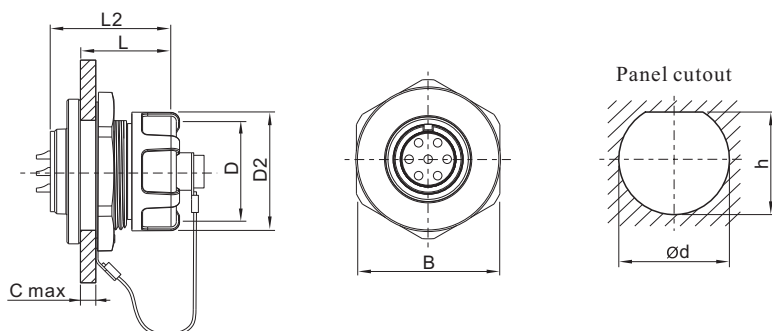
● Round flange receptacle: ZM



Dimension(mm)	WS16	WS20	WS24	WS28
d1	M16X1	M20X1	M24X1	M28X1
D	M18X1	M22X1	M26X1	M30X1
C	5	5	5	5
I	9.7	9.9	10	10.2
L	21.6	23	23	23
B	21.2	25	29.2	33.3
ød	15.9	19.7	23.7	27.7
h	15.3	19.3	23.2	26.9

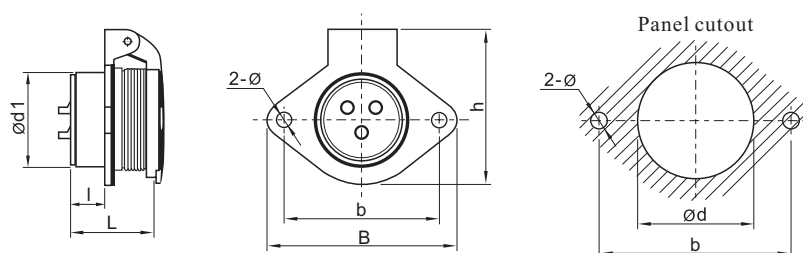


● Front-nut-mount receptacle: ZMQ



Dimension(mm)	WS16	WS20	WS24	WS28
øD	M18X1	M22X1	M26X1	M30X1
D2	M22X1	M26X1	M30X1	M34X1
L	16	17	17	17
L2	21.6	23	23	23
C	5	5	5	5
B	26.8	30.8	34.8	38.8
ød	22	26	30	34
h	20.6	24.6	28.6	32.6

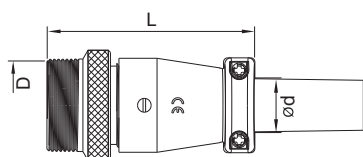
● 2-hole flange receptacle with cap: ZG



Dimension(mm)	WS16	WS20	WS24	WS28	WS32	WS40	WS48	WS55
ød1	15.8	19.8	23.8	27.8	31.8	39.8	47.8	54.8
l	10	10	10	10	15.4	14.7	14.3	14
L	22	23	23	23	34	34	34	34
b	30	35	40	45	55	65	80	85
B	38	44	50	55	67	77	92	98
h	32.5	36.5	40.5	45.5	52.5	63.5	74.5	80
ød	16.5	20.5	24.5	28.5	32.5	40.5	48.5	55.5
ø	3.5	4.5	4.5	4.5	5.5	5.5	5.5	6.5



● In-line receptacle with PVC sleeve B: ZQB

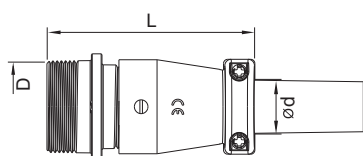


Dimension(mm)	WS16	WS20	WS24	WS28
D	M18X1	M22X1	M26X1	M30X1
L	44.5	49	53	55
ød max	10.5	13	13.5	17.5

Optional cap size see P20

PVC sleeve dimension see P20

● In-line receptacle with PVC sleeve: ZQ

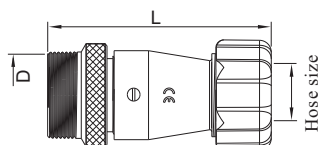


Dimension(mm)	WS32	WS40	WS48	WS55
D	M35X1.5	M44X1.5	M52X1.5	M59X1.5
L	70.5	76.5	85	97.5
ød max	21.5	26	26	32

Optional cap size see P20

PVC sleeve dimension see P20

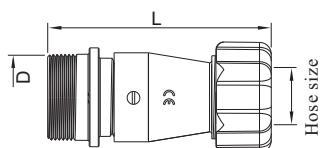
● In-line receptacle for metal-hose B: ZPB



Dimension(mm)	WS16	WS20	WS24	WS28
D	M18X1	M22X1	M26X1	M30X1
L	50	57.5	60.5	64.5
Hose size	1/4"	3/8"	3/8"	1/2"

Optional cap size see P20

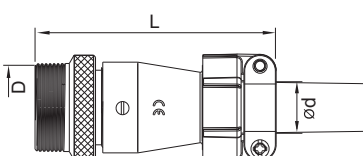
● In-line receptacle for metal-hose: ZP



Dimension(mm)	WS32	WS40	WS48	WS55
D	M35X1.5	M44X1.5	M52X1.5	M59X1.5
L	80	87	97	113
Hose size	3/4"	1"	I: 1" II: 1 1/4"	1 1/4"

Optional cap size see P20

● In-line receptacle with cable clamping plates B: ZYB



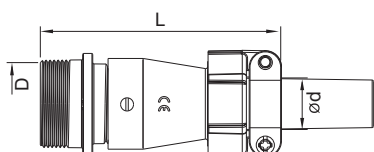
Dimension(mm)	WS16	WS20	WS24	WS28
D	M18X1	M22X1	M26X1	M30X1
L	50.5	60.5	63.5	69
ød max	10.4	13.5	13.5	17

Optional cap size see P20

PVC sleeve dimension see P20



● In-line receptacle with cable clamping plates: ZY

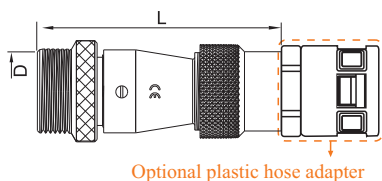


Dimension(mm)	WS32	WS40	WS48	WS55
D	M35X1.5	M44X1.5	M52X1.5	M59X1.5
L	86	95	102	117.5
ød max	19	23	I: 23 II: 32	32

Optional cap size see P20

PVC sleeve dimension see P20

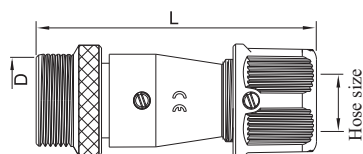
● In-line receptacle for plastic-hose B: ZDB



Dimension(mm)	WS16	WS20	WS24	WS28
D	M18X1	M22X1	M26X1	M30X1
L	55.5	64.5	69	75.5
Adapter size	PG7	PG11	PG11	PG16
model of plastic hose adapter	WQG-PG7(B)	WQG-PG11(B)	WQG-PG11(B)	WQG-PG16(B)
Hose size	AD10	AD15.8	AD15.8	AD21.2

Optional cap size see P20

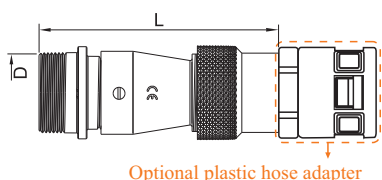
● In-line receptacle for PA-hose B: ZHB



Dimension(mm)	WS16	WS20	WS24	WS28
D	M18X1	M22X1	M26X1	M30X1
L	52.6	63	67	71
Hose size	AD10	AD15.8	AD15.8	AD21.2

Optional cap size see P20

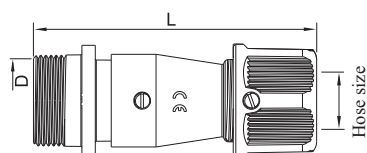
● In-line receptacle for plastic-hose: ZD



Dimension(mm)	WS32	WS40	WS48	WS55
D	M35X1.5	M44X1.5	M52X1.5	M59X1.5
L	89.5	96.5	105	119.5
Adapter size	PG21	PG29	I: PG29 II: PG36	PG36
model of plastic hose adapter	WQG-PG21(B)	WQG-PG29(B)	I: WQG-PG29(B) II: WQG-PG36(B)	WQG-PG36(B)
Hose size	AD28.5	AD34.5	I: AD34.5 II: AD42.5	AD42.5

Optional cap size see P20

● In-line receptacle for PA-hose: ZH

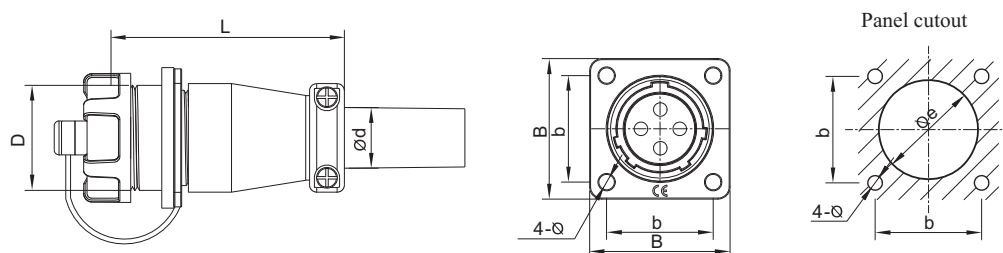


Dimension(mm)	WS16	WS20	WS24	WS28
D	M18X1	M22X1	M26X1	M30X1
L	55	61	66	70
Hose size	AD10	AD15.8	AD15.8	AD21.2

Optional cap size see P20

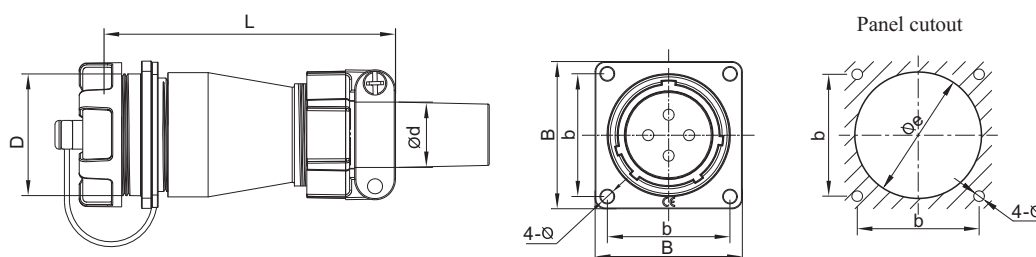


● In-line receptacle with PVC sleeve and square flange: ZQF



Dimension(mm)	WS16	WS20	WS24	WS28	WS32	WS40	WS48	WS55
D	M18 1	M22 1	M26 1	M30 1	M35 1.5	M44 1.5	M52 1.5	M59 1.5
L	44.5	49	53	55	70.5	76.5	85	97.5
Ød max	10.5	13	13.5	17.5	21.5	26	26	32
b	20	22	26	30	32	40	48	52
B	26	29	32	36	42	50	58	64
e	18.5	23	26.5	31	35	43	51	58.2
Ø	3.2	3.2	3.2	3.2	3.5	4.5	4.5	4.5

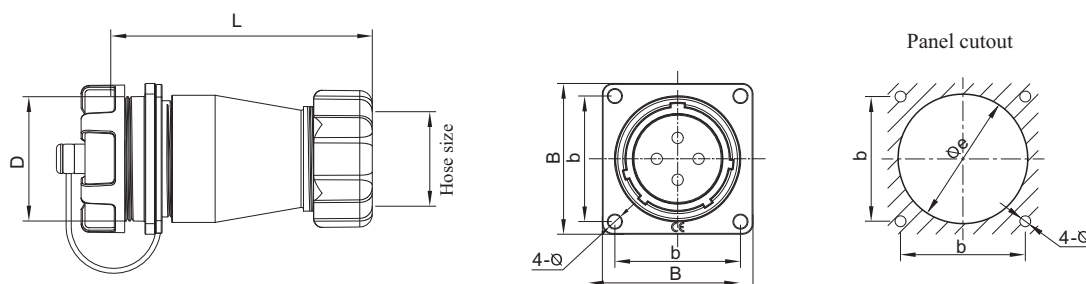
● In-line receptacle with cable clamping plates and square flange :ZYF



Dimension(mm)	WS16	WS20	WS24	WS28	WS32	WS40	WS48	WS55
D	M18 1	M22 1	M26 1	M30 1	M35 1.5	M44 1.5	M52 1.5	M59 1.5
L	50.5	60.5	63.5	69	86	95	102	117.5
Ød max	10.4	13.5	13.5	17	19	25	I:24, II:32	32
b	20	22	26	30	32	40	48	52
B	26	29	32	36	42	50	58	64
e	18.5	23	26.5	31	35	43	51	58.2
Ø	3.2	3.2	3.2	3.2	3.5	4.5	4.5	4.5

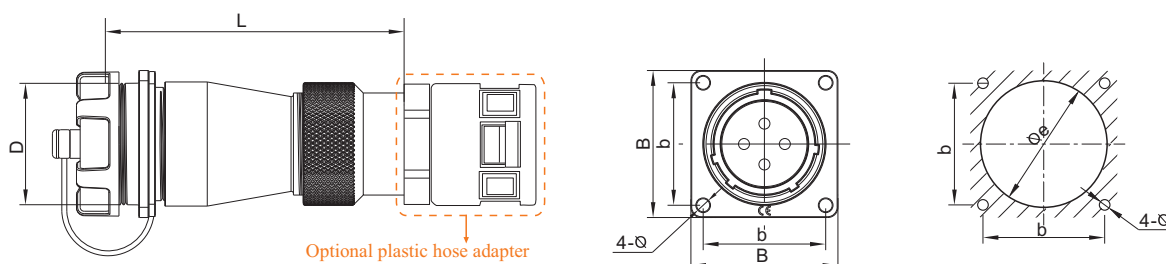


● In-line receptacle for metal-hose and square flange : ZPF



Dimension(mm)	WS16	WS20	WS24	WS28	WS32	WS40	WS48	WS55
D	M18 1	M26 1	M26 1	M30 1	M35 1.5	M44 1.5	M52 1.5	M59 1.5
L	50	60.5	60.5	64.5	80	87	97	113
Hose size	1/4"	3/8"	3/8"	1/2"	3/4"	1"	I:1", II:1 1/4"	1 1/4"
b	20	22	26	30	32	40	48	52
B	26	29	32	36	42	50	58	64
e	18.5	23	26.5	31	35	43	51	58.2
Ø	3.2	3.2	3.2	3.2	3.5	4.5	4.5	4.5

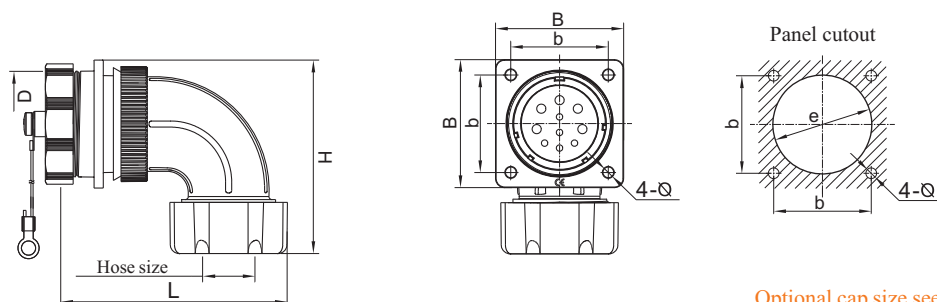
● In-line receptacle for plastic-hose and square flange: ZDF



Dimension(mm)	WS16	WS20	WS24	WS28	WS32	WS40	WS48	WS55
D	M18X1	M22X1	M26X1	M30X1	M35X1.5	M44X1.5	M52X1.5	M59X1.5
L	55.5	64.5	69	75.5	89.5	96.5	105	119.5
Adapter size	PG7	PG11	PG11	PG16	PG21	PG29	I:PG29 II:PG36	PG36
Model of plastic hose adapter	WQG-PG7(B)	WQG-PG11(B)	WQG-PG11(B)	WQG-PG16(B)	WQG-PG21(B)	WQG-PG29(B)	I:WQG-PG29(B) II:WQG-PG36(B)	WQG-PG36(B)
Hose size	AD10	AD15.8	AD15.8	AD21.2	AD28.5	AD34.5	I:AD34.5 II:AD42.5	AD42.5
b	20	22	26	30	32	40	48	52
B	26	29	32	36	42	50	58	64
e	18.5	23	26.5	31	35	43	51	58.2
Ø	3.2	3.2	3.2	3.2	3.5	4.5	4.5	4.5



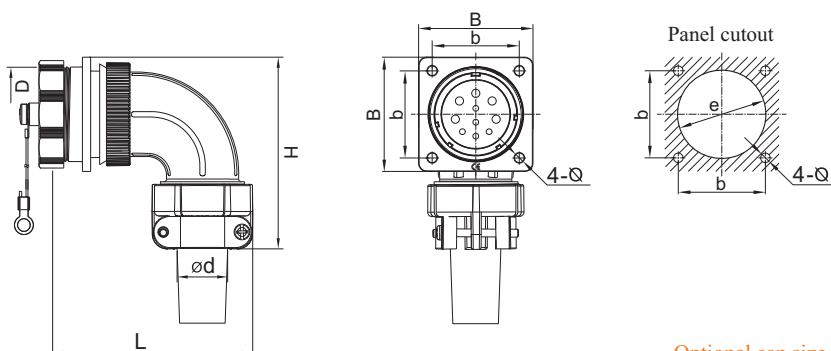
● In-line receptacle with angled back shell for metal-hose and square flange: ZR



Optional cap size see P20

Dimension(mm)	WS20	WS24	WS28	WS32	WS40	WS48	WS55
D	M22 1	M26 1	M30 1	M35 1.5	M44 1.5	M52 1.5	M59 1.5
L	61	60.5	64.5	83.5	90.5	97	114.5
H	48	51.5	52	63.5	74.5	85	98
Hose size	3/8"	3/8"	1/2"	3/4"	1"	1"	1 1/4"
b	22	26	30	32	40	48	52
B	29	32	36	42	50	58	64
e	26.6	28.5	33	37.5	47	55.5	62.2
Ø	3.2	3.2	3.2	3.5	4.5	4.5	4.5

● In-line receptacle with angled back shell and cable clamping plates and square flange: ZS

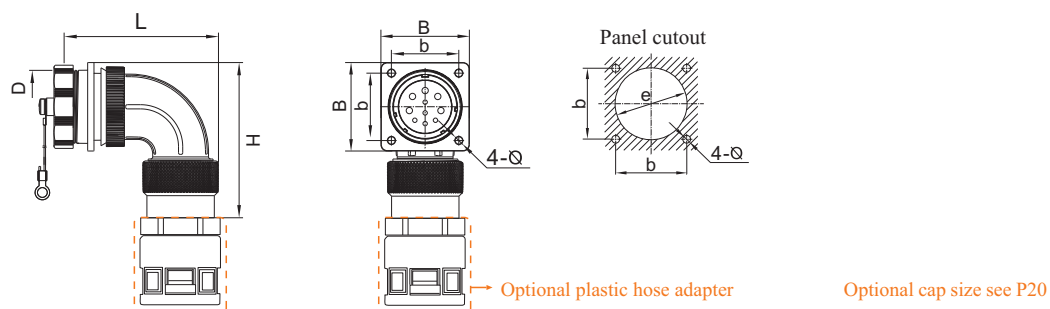


Optional cap size see P20

Dimension(mm)	WS20	WS24	WS28	WS32	WS40	WS48	WS55
D	M22 1	M26 1	M30 1	M35 1.5	M44 1.5	M52 1.5	M59 1.5
L	60.5	60.5	64.5	82	89	95.5	114
H	56.5	57	63.5	72	83.5	94.5	112.5
Ød max	13.5	13	17	19	23	23	32
b	22	26	30	32	40	48	52
B	29	32	36	42	50	58	64
e	26.6	28.5	33	37.5	47	55.5	62.2
Ø	3.2	3.2	3.2	3.5	4.5	4.5	4.5



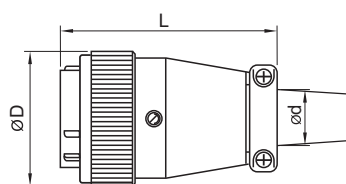
- In-line receptacle with angled back shell for plastic-hose and square flange:ZC



Dimension(mm)	WS20	WS24	WS28	WS32	WS40	WS48	WS55
D	M22 1	M26 1	M30 1	M35 1.5	M44 1.5	M52 1.5	M59 1.5
L	60	61	63	82	88.5	95	112
H	58	60	65	75.5	83	95.5	104
Model of plastic hose adapter	WQG-PG11(B)	WQG-PG11(B)	WQG-PG16(B)	WQG-PG21(B)	WQG-PG29(B)	WQG-PG29(B)	WQG-PG36(B)
Hose size	AD15.8	AD15.8	AD21.2	AD28.5	AD34.5	AD34.5	AD42.5
b	22	26	30	32	40	48	52
B	29	32	36	42	50	58	64
e	26.6	28.5	33	37.5	47	55.5	62.2
Ø	3.2	3.2	3.2	3.5	4.5	4.5	4.5

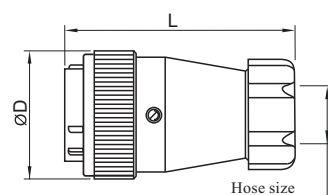


● Plug with PVC sleeve:TQ



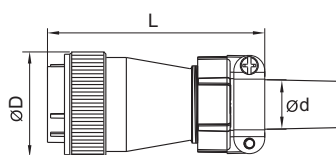
Dimension(mm)	WS16	WS20	WS24	WS28	WS32	WS40	WS48	WS55
ØD	21.5	26	30	34	39.5	49.5	57	64.5
L	44	49	53	55	69	76	85	97
Ød max	10.5	13	13.5	17.5	21.5	26	26	32

● Plug for metal-hose:TP



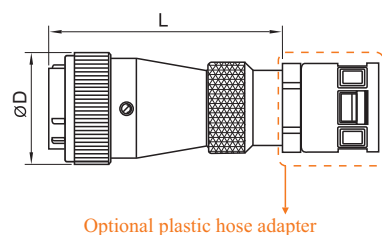
Dimension(mm)	WS16	WS20	WS24	WS28	WS32	WS40	WS48	WS55
ØD	21.5	26	30	34	39.5	49.5	57	64.5
L	48.5	57	61	64	81	86	96.5	112
Hose size	1/4"	3/8"	3/8"	1/2"	3/4"	1"	I: 1" II: 1 1/4"	1 1/4"

● Plug with cable clamping plates: TY



Dimension(mm)	WS16	WS20	WS24	WS28	WS32	WS40	WS48	WS55
ØD	21.5	26	30	34	39.5	49.5	57	64.5
L	53.5	60	64.5	71.5	85.5	93.5	103	121
Ød max	10.4	13.5	13.5	17	19	25	I: 24 II: 32	32

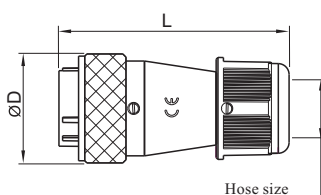
● Plug for plastic-hose:TD



Dimension(mm)	WS16	WS20	WS24	WS28	WS32	WS40	WS48	WS55
ØD	21.5	26	30	34.5	39.5	49.5	57	64.5
L	56	64.5	68.5	73	88.5	95.5	105	119
Adapter size	PG7	PG11	PG11	PG16	PG21	PG29	I: PG29 II: PG36	PG36
model of plastic hose adapter	WQG-PG7(B)	WQG-PG11(B)	WQG-PG11(B)	WQG-PG16(B)	WQG-PG21(B)	WQG-PG29(B)	I: WQG-PG29(B) II: WQG-PG36(B)	WQG-PG36(B)
Hose size	AD10	AD15.8	AD15.8	AD21.2	AD28.5	AD34.5	I: AD34.5 II: AD42.5	AD42.5

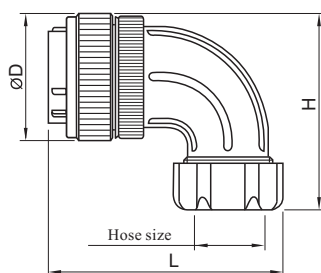


● Plug for PA-hose: TH



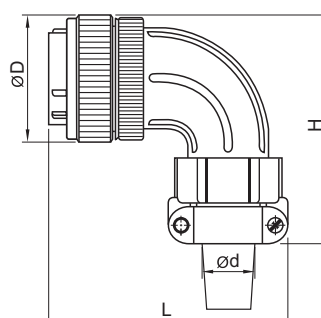
Dimension(mm)	WS16	WS20	WS24	WS28
ØD	22	26.2	30	34
L	52	63.5	66.5	69.5
Hose size	AD10	AD15.8	AD15.8	AD21.2

● Plug with angled back shell for metal-hose: TR



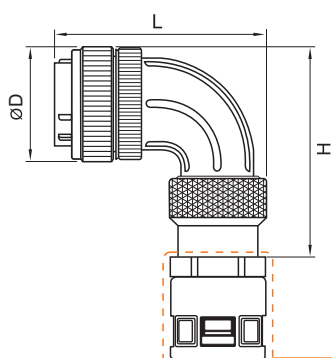
Dimension(mm)	WS20	WS24	WS28	WS32	WS40	WS48	WS55
ØD	27.5	31	35	39	49	57	64.5
H	50	51	54.5	63	73	89	97.5
L	60	60	64	82	87.5	94	115
Hose size	3/8"	3/8"	1/2"	3/4"	1"	1"	1 1/4"

● Plug with angled back shell with cable clamping plates: TS



Dimension(mm)	WS20	WS24	WS28	WS32	WS40	WS48	WS55
ØD	27.5	31	35	39	49.5	57	65
H	53.5	56	61	67.5	78	91	99.5
L	60	60	64	81	88	95	106
Ød max	13.5	13.5	16.8	19	23	23	32

● Plug with right angle back shell for plastic-hose: TC

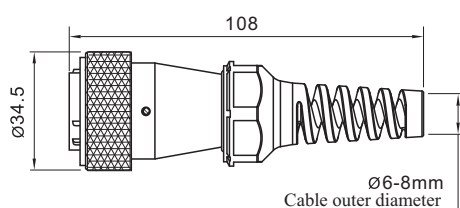


Dimension(mm)	WS20	WS24	WS28	WS32	WS40	WS48	WS55
ØD	27.5	31	35	39	49.5	57	64.5
H	57	62	65	71.5	82	96	104
L	59.5	60	63	81	88	94	112
Adapter size	PG11	PG11	PG16	PG21	PG29	PG29	PG36
model of plastic hose adapter	WQG-PG11(B)	WQG-PG11(B)	WQG-PG16(B)	WQG-PG21(B)	WQG-PG29(B)	WQG-PG29(B)	WQG-PG36(B)
Hose size	AD15.8	AD15.8	AD21.2	AD28.5	AD34.5	AD34.5	AD42.5

Optional plastic hose adapter

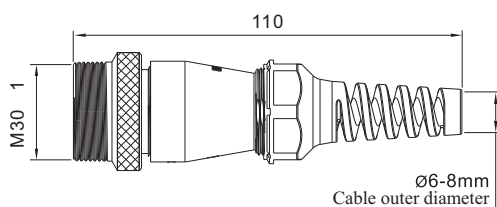


● Plug with strain relief: TX



★ It can be produced 28 models, other models are customizable

● In-line receptacle with anti-bending sleeve B: ZXB



★ It can be produced 28 models, other models are customizable

Solder contact spec

★ Crimp contact spec see P22

★ Screw contact spec see P23

WS28	2	3	4	7	8	8B	9	10	10B	12	16	17	20	24	26	35
Male contact face view																
Rated current (A)	50	50	25	25	25	60, 5	25, 5	25	10	10	10	10	5	5	5	5
Contact diameter(mm)	Ø3.5X2	Ø3.5X3	Ø2.5X4	Ø2.5X7	Ø2.5X8	Ø5X2 Ø1X6	Ø2.5X4 Ø1X5	Ø2.5X10	Ø1.5X10	Ø1.5X12	Ø1.5X16	Ø1.5X17	Ø1X20	Ø1X24	Ø1X26	Ø1X35
Rated voltage (AC.V)	500	500	500	500	500	500 400	500	500	500	500	500	500	400	400	400	400
Test voltage(AC.V) 1 min	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1200	1200	1200	1200
Contact resistance(mΩ)	0.5	0.5	1	1	1	0.5, 5	1, 5	1	2.5	2.5	2.5	2.5	5	5	5	5
Termination	solder / screw	solder / screw	solder / screw	solder / screw	solder / screw	solder	solder	solder / screw	solder	solder	solder	solder	solder	solder	solder	solder
Wire size(mm ² /AWG)	≤10/7	≤10/7	≤4/12	≤4/12	≤4/12	≤16/5 ≤0.75/18	≤4/12 ≤0.75/18	≤4/12	≤1.5/16	≤1.5/16	≤1.5/16	≤1.5/16	≤0.75/18	≤0.75/18	≤0.75/18	≤0.75/18
(mm ² /AWG)	Min: 0.5/20 Max: 6/10	Min: 0.5/20 Max: 6/10	Min: 0.5/20 Max: 1.5/15	Min: 0.5/20 Max: 1.5/15	Min: 0.5/20 Max: 1.5/15	/	/	Min: 0.5/20 Max: 1.5/15	/	/	/	/	/	/	/	/
Wire size for screw termination																

