

FFP D1/68H S1 B TY**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**OMNIMATE® - Board-to-Board connectors**

Flexible engineering of compact devices

The use of future-proof contact systems, as well as the optimisation of manufacturing processes, are increasingly important in the development of efficient industrial devices, especially in the field of Industry 4.0. OMNIMATE® board-to-board connectors feature a 1.27 mm pitch and offer maximum flexibility due to different designs.

- **Flexible device design** - Industrial suitable density combined with high flexible connection combinations (Mezzanine, Mother-to-Daughter, Extender-card, Cable-to-Board)
- **Automation-Ready** - Developed for automatic assembly with high precise pin coplanarity and SMT-fixation
- **Reliable contact** - Up to 500 mating cycles due to industry suitable gold-surface (PdNi-Au)
- **Process-Ready** - High performance LCP material for reflow soldering
- **Scalability** - Different heights with high contact overlapping ensure various solutions from 12 – 80 poles.
- **Robust miniaturisation** - simple and safe connection even possible under unfavorable mating conditions – e.g. inclination or offset.

General ordering data

Version	PCB plug-in connector, female plug, Pitch in mm (P): 1.27 mm, Number of poles: 68, Tray (manual assembly)
Order No.	2747590000
Type	FFP D1/68H S1 B TY
GTIN (EAN)	4050118896169
Qty.	75 pc(s).
Product data	IEC: / 1.9 A UL: 150 V / 1 A / AWG 30 sol - AWG 30 sol
Packaging	Tray (manual assembly)

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Technical data

Dimensions and weights

Depth	5.6 mm	Depth (inches)	0.22 inch
Height	14.05 mm	Height (inches)	0.553 inch
Width	50.96 mm	Width (inches)	2.006 inch
Net weight	4.8 g		

System Parameters

Product family	OMNIMATE Signal - Board-to-Board	Type of connection	Insulation displacement connection (IDC)
Wire connection method	Insulation displacement connection (IDC)	Pitch in mm (P)	1.27 mm
Pitch in inches (P)	0.05 "	Conductor outlet direction	90°/270°
Number of poles	68	Number of rows	1
Pin series quantity	2	Protection degree	IP20
Volume resistance	<25 mΩ	Plugging cycles	500
Plugging force/pole, max.	0.6 N	Pulling force/pole, max.	0.6 N

Material data

Insulating material	LCP	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	IIIa
Insulation strength	$\geq 10^{10} \Omega$	Moisture Level (MSL)	1
UL 94 flammability rating	V-0	Contact base material	Copper alloy
Contact material	Cu-alloy	Contact surface	Ni/Au
Layer structure of plug contact	$\geq 2 \mu\text{m Ni} / \geq 0.4 \mu\text{m PdNi} / \geq 0.05 \mu\text{m Au}$	Storage temperature, min.	-40 °C
Storage temperature, max.	70 °C	Operating temperature, min.	-55 °C
Operating temperature, max.	125 °C		

Conductors suitable for connection

Wire connection cross section AWG, min.	AWG 30/1, 30/7	Wire connection cross section AWG, max.	AWG 30/1, 30/7
Outer diameter of insulation, min.	0.55 mm	Outer diameter of insulation, max.	0.75 mm

Rated data acc. to IEC

Rated current, min. number of poles (Tu=20°C)	1.9 A	Rated current, max. number of poles (Tu=20°C)	2.3 A
Rated current, min. number of poles (Tu=40°C)	2.5 A	Clearance, min.	0.4 mm
Creepage distance, min.	0.4 mm		

Rated data acc. to UL 1977

Reference to approval values	Specifications are maximum values, details - see approval certificate.	Rated voltage (UL 1977) (obsolete)	150 V
Rated current (UL 1977) (obsolete)	1 A	AWG-conductor, min. (UL 1977)	30 sol
AWG-conductor, max. (UL 1977)	30 sol		

Packing

Packaging	Tray (manual assembly)	VPE length	190 mm
VPE width	122 mm	VPE height	79 mm

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Technical data

Classifications

ETIM 6.0	EC002638	ETIM 7.0	EC002638
ETIM 8.0	EC002638	ETIM 9.0	EC002638
ECLASS 9.0	27-44-03-09	ECLASS 9.1	27-44-03-09
ECLASS 10.0	27-44-03-09	ECLASS 11.0	27-46-02-02
ECLASS 12.0	27-46-02-02	ECLASS 13.0	27-46-02-02

Important note

IPC conformity

Conformity: The products are developed, manufactured and delivered according international recognized standards and norms and comply with the assured properties in the data sheet resp. fulfill decorative properties in accordance with IPC-A-610 "Class 2". Further claims on the products can be evaluated on request.

Approvals

Approvals



ROHS	Conform
UL File Number Search	UL Website
Certificate No. (cURus)	E92202

Downloads

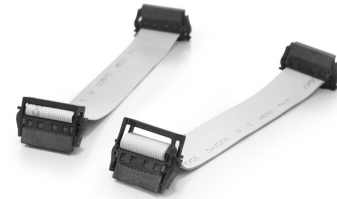
Engineering Data	CAD data – STEP
Catalogues	Catalogues in PDF-format

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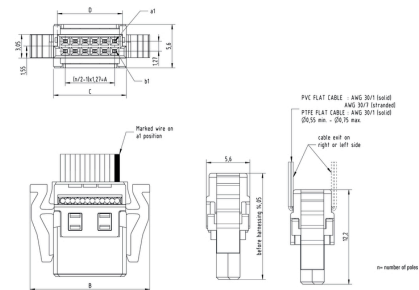
Drawings



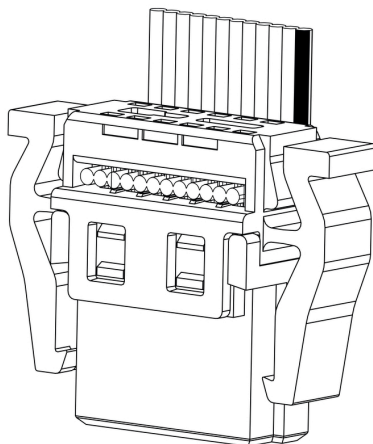
With optional strain relief

Dimensional drawing

Type	Order no.	No. of poles	A	B	C	D	E
FFP D1/24H S1 B TY	2747620000	12	6,35	15,4	9,37	8,37	15
FFP D1/36H S1 B TY	2747630000	18	8,89	17,94	11,91	10,91	15
FFP D1/48H S1 B TY	2747640000	24	11,43	20,48	14,45	13,45	15
FFP D1/60H S1 B TY	2747650000	30	13,97	23,02	16,99	15,99	15
FFP D1/72H S1 B TY	2747660000	36	16,51	25,57	19,54	18,54	15
FFP D1/84H S1 B TY	2747670000	42	19,05	28,11	22,07	21,07	15
FFP D1/96H S1 B TY	2747680000	48	21,59	30,66	24,62	23,62	15
FFP D1/108H S1 B TY	2747690000	54	24,13	33,20	27,16	26,16	15
FFP D1/120H S1 B TY	2747700000	60	26,67	35,75	29,71	28,71	15
FFP D1/132H S1 B TY	2747710000	66	29,21	38,29	32,25	31,25	15
FFP D1/144H S1 B TY	2747720000	72	31,75	40,84	34,80	33,80	15
FFP D1/156H S1 B TY	2747730000	78	34,29	43,38	37,34	36,34	15
FFP D1/168H S1 B TY	2747740000	84	36,83	45,93	39,89	38,89	15
FFP D1/180H S1 B TY	2747750000	90	39,37	48,47	42,43	41,43	15
FFP D1/192H S1 B TY	2747760000	96	41,91	51,02	44,98	43,98	15
FFP D1/204H S1 B TY	2747770000	102	44,45	53,56	47,53	46,53	15



Detailed drawing



FFP D1/68H S1 B TY

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Accessories

FC/FFP - Strain relief (Accessory)

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General ordering data

Type	FC/FFP ZE/68 B BX	Version	Product data	Packaging
Order No.	2853160000	PCB plug-in connector, Accessories, Pitch in mm (P): 1.27 mm,	UL:	Box
GTIN (EAN)	4064675476030	Number of poles: 68, Box		
Qty.	50 pc(s).			

FFP D1/68H S1 B TY

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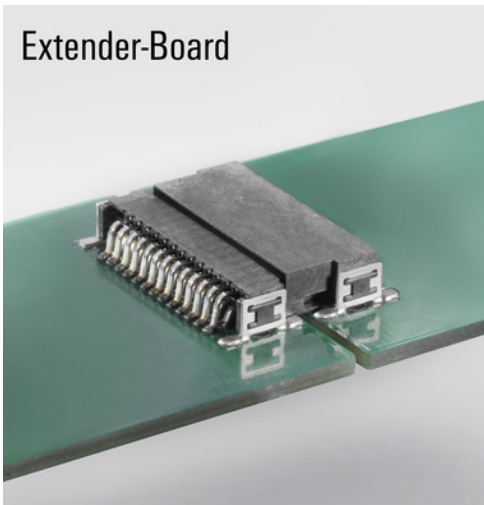
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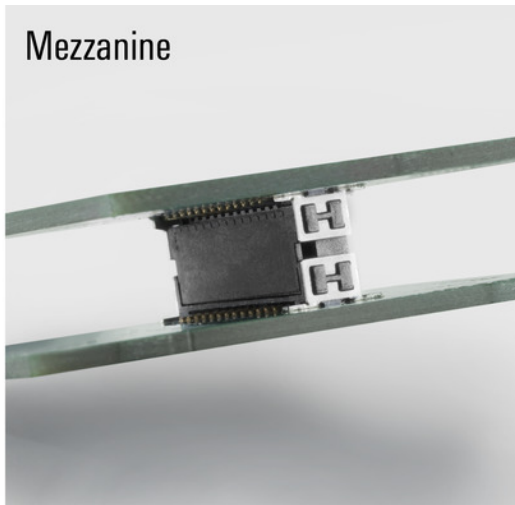
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Drawings

Extender-Board



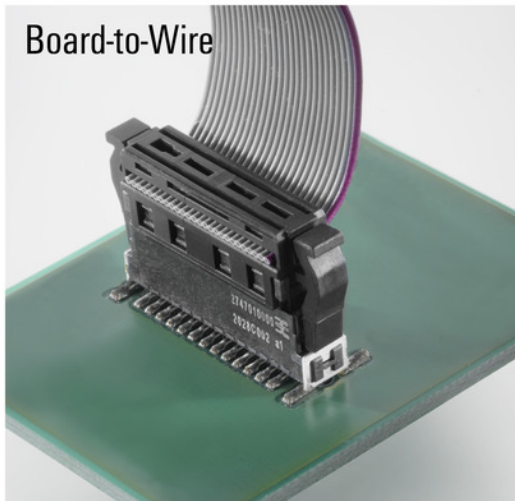
Mezzanine



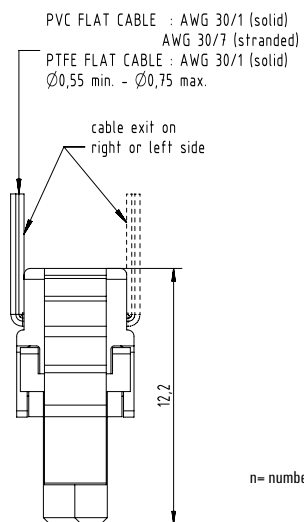
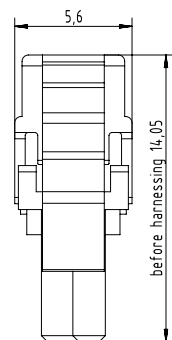
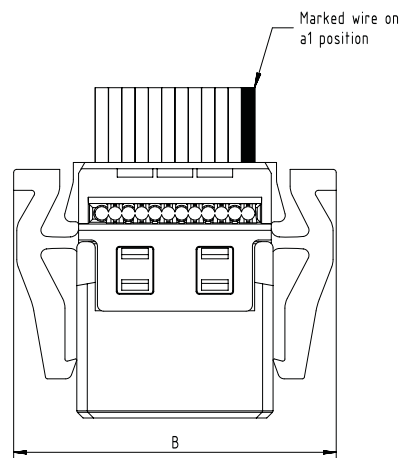
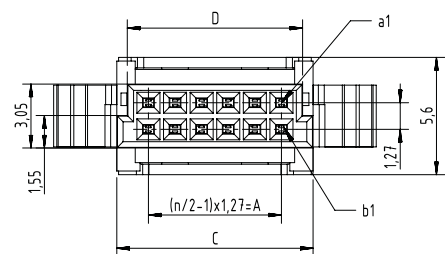
Mother-to-Daughter



Board-to-Wire

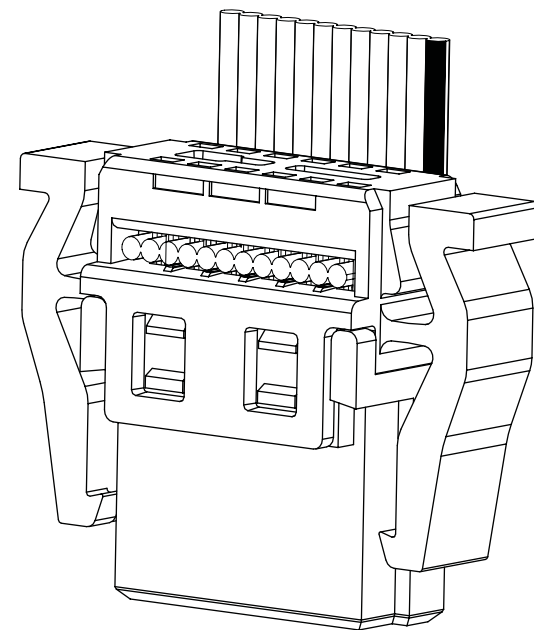


FFP D1/..H S1 B RL



n= number of poles

Type	Order no.	No. of poles	A	B	C	D	E
FFP D1/12H S1 B TY	2747520000	12	6,35	15,4	9,37	8,37	15
FFP D1/16H S1 B TY	2747530000	16	8,89	17,94	11,91	10,91	15
FFP D1/20H S1 B TY	2747540000	20	11,43	20,48	14,45	13,45	15
FFP D1/26H S1 B TY	2747550000	26	15,24	24,29	18,26	17,26	15
FFP D1/32H S1 B TY	2747560000	32	19,05	28,1	22,07	21,07	15
FFP D1/40H S1 B TY	2747570000	40	24,13	33,18	27,15	26,15	15
FFP D1/50H S1 B TY	2747580000	50	30,48	39,53	33,5	32,5	15
FFP D1/68H S1 B TY	2747590000	68	41,91	50,96	44,93	43,93	16,2
FFP D1/80H S1 B TY	2747600000	80	49,53	58,58	55,88	51,55	16,2



Male vertical - FMH1 | FMH3

Application - dimensions

	14 mm				
	13 mm				
	12 mm				
	11 mm				
	10 mm				
	9 mm				
	8 mm				
X	stacking heights	male 1,75mm female 6,25mm	male 3,25mm female 6,25mm	male 1,75mm female 9,05mm	male 3,25mm female 9,05mm
Y	PCB distance	8mm - 9,5mm	9,5mm - 11mm	10,8mm - 12,3mm	12,3mm - 13,8mm
S	Type	FMH1.. FFH6..	FMH3.. FFH6..	FMH1.. FFH9..	FMH3.. FFH9..



*S max. = S min. + 1,15 wiping length with additional contact overlap security



X	Y	S min.	*S max.	P min.	O
3,25	9,05	12,3	13,8	-	-
1,75	9,05	10,8	12,3	-	-
3,25	6,25	9,5	11	-	-
1,75	6,25	8	9,5	-	-
3,25	-	-	-	10,25	14,08
1,75	-	-	-	8,75	12,58

Mating conditions



Tape - dimensions

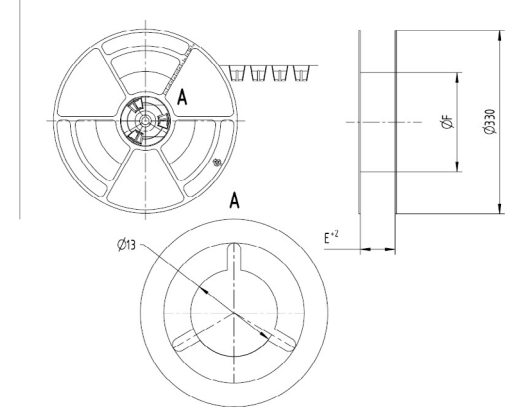


Tape dimensions	A	F	I	K
Pole 12	24,0	11,5 ± 0,1	-	2 ± 0,1
Poles 14 to 20	32,0	14,2 ± 0,1	28,4	2 ± 0,1
Poles 22 to 40	44,0	20,2 ± 0,15	40,2	2 ± 0,15
Poles 42 to 56	56,0	26,2 ± 0,15	52,4	2 ± 0,15
Poles 58 to 80	72,0	34,2 ± 0,3	68,4	2 ± 0,2

① No double sprocket holes for 12 pole numbers (tape size 24)



Reel - dimensions



Reel dimensions	E	F
Pole 12	24,4	178mm for stacking height 1,75mm & 3,25mm
Poles 14 to 20	32,4	
Poles 22 to 40	44,4	
Poles 42 to 56	56,4	
Poles 58 to 80	72,4	

Female angled - FFH

Application - dimensions



X	P min.	0
3,25	10,25	14,08
1,75	8,75	12,48

Tape - dimensions



Tape dimensions	A	F	I	K
Poles 12	24,0 ± 0,3/-0,1	11,5 ± 0,1	-	2 ± 0,1
Poles 14 to 20	32,0 ± 0,3	14,2 ± 0,1	28,4	2 ± 0,1
Poles 22 to 40	44,0 ± 0,3	20,2 ± 0,15	40,2	2 ± 0,15
Poles 42 to 56	56,0 ± 0,3	26,2 ± 0,15	52,4	2 ± 0,15
Poles 58 to 80	72,0 ± 0,3	34,2 ± 0,3	68,4	2 ± 0,2

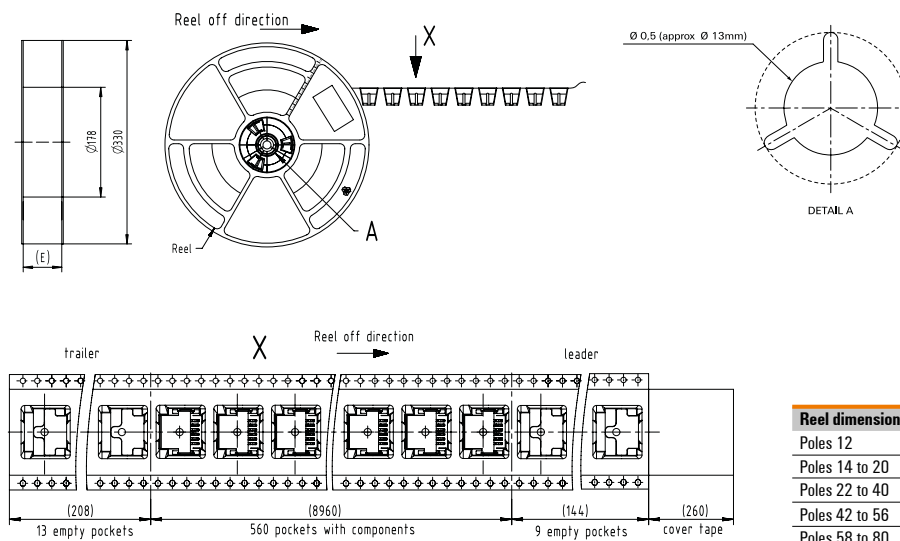
① No double sprocket holes for 12 pole numbers (tape size 24)



Mating conditions



Reel - dimensions



Reel dimensions	E
Poles 12	24,4
Poles 14 to 20	32,4
Poles 22 to 40	44,4
Poles 42 to 56	56,4
Poles 58 to 80	72,4

Female vertical - FFH6 | FFH9

Application - dimensions

	14 mm				
	13 mm				
	12 mm				
	11 mm				
	10 mm				
	9 mm				
	8 mm				
X	stacking	male 1,75mm	male 3,25mm	male 1,75mm	male 3,25mm
Y	heights	female 6,25mm	female 6,25mm	female 9,05mm	female 9,05mm
S	PCB distance	8mm - 9,5mm	9,5mm - 11mm	10,8mm - 12,3mm	12,3mm - 13,8mm
Type		FMH1..	FMH3..	FMH1..	FMH3..
		FFH6..	FFH6..	FFH9..	FFH9..



*S max. = S min. + 1,15 wiping length with additional contact overlap security



X	Y	S min.	*S max.	P min.	O
3,25	9,05	12,3	13,8	-	-
1,75	9,05	10,8	12,3	-	-
3,25	6,25	9,5	11	-	-
1,75	6,25	8	9,5	-	-
-	9,05	-	-	10,5	14,33
-	6,25	-	-	7,7	11,53

Mating conditions

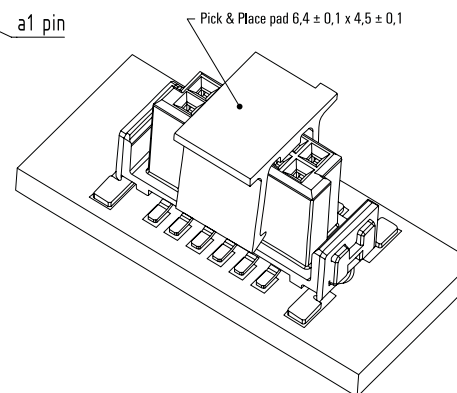


Tape - dimensions

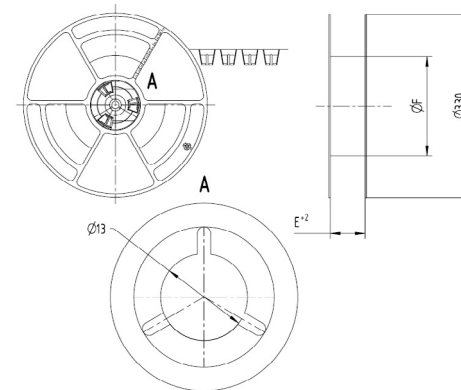


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Poles 14 to 20	32,0	14,2 ± 0,1	28,4	2 ± 0,1
Poles 22 to 40	44,0	20,2 ± 0,15	40,2	2 ± 0,15
Poles 42 to 56	56,0	26,2 ± 0,15	52,4	2 ± 0,15
Poles 58 to 80	72,0	34,2 ± 0,3	68,4	2 ± 0,2

① No double sprocket holes for 12 pole numbers (tape size 24)



Reel - dimensions



Reel dimensions	E	F
Pole 12	24,4	
Poles 14 to 20	32,4	
Poles 22 to 40	44,4	178mm for stacking height
Poles 42 to 56	56,4	1,75mm & 3,25mm
Poles 58 to 80	72,4	

Female IDC plug - FFP

Packaging Information



Pin count	Number of trays	Connector s per tray	Connector s per package
12	2	50	100
12	3	40	120
20	3	35	105
32	4	25	100
40	5	20	100
50	5	15	75
68	5	15	75
80	5	10	50