



## DEUTSCH H91 Series Filter Connectors

### MIL-DTL-38999 SERIES I



MIL-DTL-38999 Series I connectors are subminiature, environmental-class connectors with high and medium-density insert arrangements. They are used where a quick-disconnect coupling system is required for blind mating or other problem areas. The bayonet coupling requires 1/3 turn to mate fully. Available with crimp contacts, PC tails, solder cups and headers, they feature various plating options available and five keying options.

#### SPECIFICATIONS

##### MATING COMPATIBILITY

- MIL-DTL 38999 Series I connectors
- DEUTSCH DJT Series connectors
- DEUTSCH 999-1 and HDJ Series connectors

##### RELIABLE

- Positive three-point bayonet coupling
- 100% scoop proof
- RFI shell-to-shell continuity

##### VERSATILE

- Wide range of connector shell configurations
- Configurable filter topologies

##### DESIGNED FOR HARSH ENVIRONMENTS

- Vibration and shock
- Temperature extremes
- High humidity
- Altitude
- Salt spray

##### Environmental

- **Temperature Range:** -55°C to 125°C
- **Physical Shock:** Typical to EIA-364-27 test condition C
- **Vibration:** Typical to EIA-364-28
- **Fungus Resistance:** Based on MIL-STD-810
- **Fluid Immersion:** Typically tested to EIA-364-10
- **Salt Spray:** Typically based on EIA/ECA-364-26
- **Humidity:** Typically EIA-364-31 test method IV
- **Durability:** 1500 cycles for Classes J and M and 500 cycles for all other connectors as per 38999 spec

##### Electrical

- **Grounded Line Resistance (Typ.):** 15 mΩ
- **Insulation Resistance (Typ.):** >5 GΩ
- **Dielectric Withstand (Typ.):** <5 μA
- **DWV:** up to 2000 VDC
- **Working Voltage:** up to 2000 VDC
- **Typical Test Specifications Used:**  
MIL-STD-810: Test Method Standard  
MIL-STD-202: Electrical & Electronic Component Parts  
RTCA DO-160: Test Procedures for Airborne Equipment  
EIA-364: Electrical Connector & Socket Test Procedures

##### Filtering

- **Capacitance Range:** 20 pF to 4 μF
- **Capacitance Tolerance:** Typically 20%
- **Unfiltered Line Cap (Typ.):** 15 pF
- **Filtering Topologies:** L, C, LC, CL, Pi, T, Double T

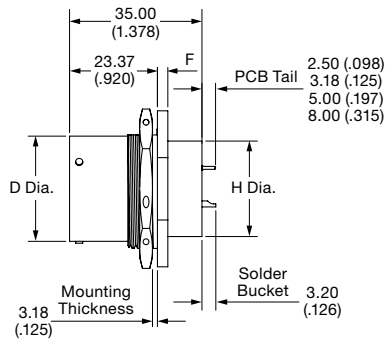
Transient protection available as per RTCA Publication DO 160 (see page 56).



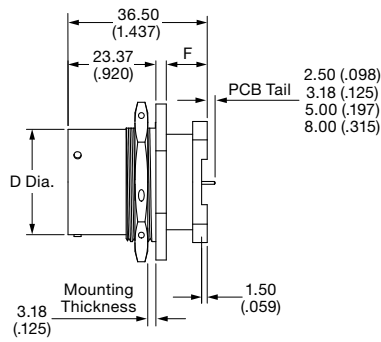
# DEUTSCH H91 Series Filter Connectors

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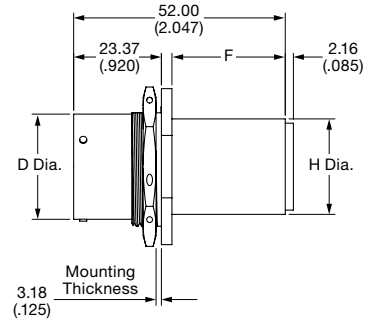
### Jam Nut Receptacle Connectors



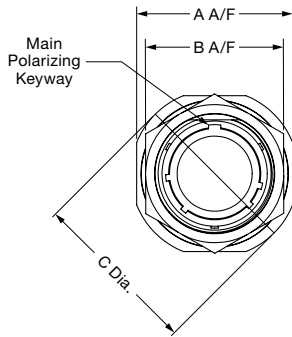
Single Flange



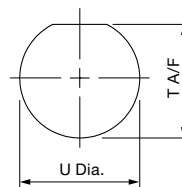
Double Flange



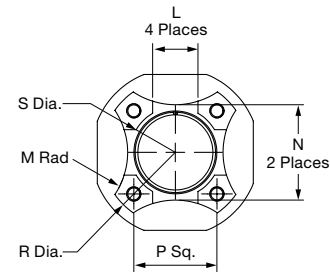
Single Flange, Crimp Contacts



Front View



Recommended Panel Cutout



Double Flange Footprint

Shell Size	A A/F	B A/F	C Dia.	D Dia.	F	H Dia.	L	M Rad	N	P Sq.	R Dia.	S Dia.	Mounting Dims	
													T Dia.	U Dia. Max.
9	27.38 (1.078)	22.64 (0.891)	30.59 (1.204)	14.48 (0.570)		15.67 (0.616)	8.00 (0.315)	9.00 (0.354)	15.50 (0.610)	14.00 (0.551)	27.06 (1.065)	14.34 (0.565)	16.99 (0.669)	17.70 (0.697)
11	32.16 (1.266)	25.83 (1.017)	35.34 (1.391)	17.73 (0.698)		15.67 (0.616)	8.00 (0.315)	9.00 (0.354)	15.50 (0.610)	14.00 (0.551)	27.06 (1.065)	14.34 (0.565)	19.53 (0.769)	20.88 (0.822)
13	35.34 (1.391)	30.61 (1.205)	38.51 (1.516)	21.54 (0.848)	3.05 (0.120)	18.85 (0.742)	8.00 (0.315)	12.00 (0.472)	18.65 (0.734)	17.00 (0.669)	32.06 (1.262)	17.42 (0.686)	24.26 (0.955)	25.58 (1.007)
15	38.51 (1.516)	33.75 (1.329)	41.69 (1.641)	24.71 (0.973)		22.22 (0.874)	12.00 (0.472)	18.00 (0.709)	22.00 (0.866)	19.00 (0.748)	35.06 (1.380)	20.72 (0.816)	27.53 (1.084)	28.80 (1.134)
17	41.69 (1.641)	36.95 (1.455)	44.86 (1.766)	27.89 (1.098)		25.45 (1.001)	12.00 (0.472)	20.00 (0.787)	25.25 (0.994)	22.00 (0.866)	39.06 (1.538)	23.89 (0.941)	30.68 (1.208)	31.98 (1.259)
19	46.43 (1.828)	40.10 (1.579)	49.64 (1.954)	30.61 (1.205)		28.57 (1.125)	16.00 (0.630)	22.00 (0.866)	28.40 (1.118)	25.00 (0.984)	42.06 (1.656)	26.43 (1.041)	33.86 (1.333)	35.15 (1.383)
21	49.64 (1.954)	43.31 (1.705)	52.78 (2.078)	33.78 (1.330)		31.75 (1.250)	16.00 (0.630)	22.00 (0.866)	31.55 (1.242)	27.00 (1.063)	45.06 (1.774)	29.58 (1.165)	37.06 (1.459)	38.28 (1.507)
23	52.78 (2.078)	46.45 (1.829)	55.99 (2.204)	36.96 (1.455)	3.84 (0.151)	34.72 (1.367)	16.00 (0.630)	22.00 (0.866)	34.50 (1.358)	29.00 (1.142)	48.06 (1.892)	32.76 (1.290)	40.01 (1.575)	41.50 (1.634)
25	55.99 (2.204)	51.23 (2.017)	59.13 (2.328)	40.13 (1.580)		37.50 (1.476)	16.00 (0.630)	24.00 (0.945)	37.30 (1.469)	31.00 (1.221)	51.06 (2.010)	35.83 (1.411)	43.41 (1.709)	44.68 (1.759)

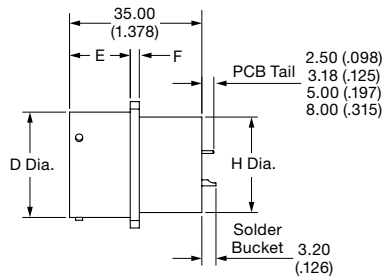
See page 29 for insert arrangements and back cover for configuration sheet.



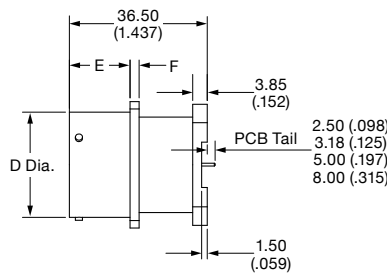
# DEUTSCH H91 Series Filter Connectors

## MIL-DTL-38999 SERIES I

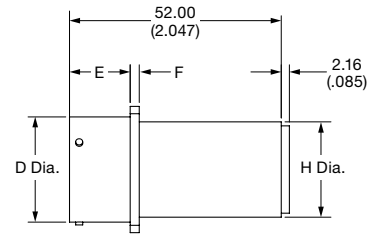
### Square Flange Receptacle Connectors



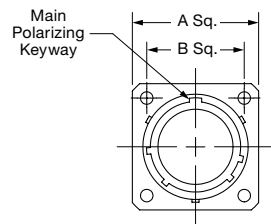
Single Flange



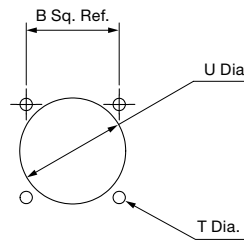
Double Flange



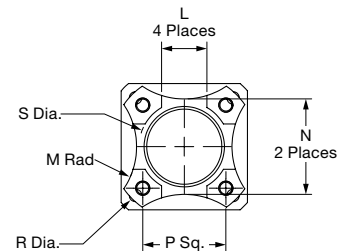
Single Flange, Crimp Contacts



Front View



Square Flange Mounting



Double Flange Footprint

Shell Size	A Sq.	B Sq.	C Dia.	E	F	H Dia.	L Rad	M	N Sq.	P Dia.	R Dia.	Mounting Holes	
												T Dia. Max	U Dia.
9	24.10 (0.949)	18.26 (0.719)	14.43 (0.568)			15.47 (0.609)	9.00 (0.354)	15.50 (0.488)	14.00 (0.551)	27.00 (1.063)	14.39 (0.567)		20.15 (0.793)
11	26.49 (1.043)	20.62 (0.812)	17.68 (0.696)			15.47 (0.609)	9.00 (0.354)	15.50 (0.488)	14.00 (0.551)	27.00 (1.063)	14.39 (0.567)		23.35 (0.919)
13	28.88 (1.137)	23.01 (0.906)	21.49 (0.846)	20.75 (0.817)	2.39 (0.094)	18.65 (0.734)	12.00 (0.472)	18.65 (0.734)	17.00 (0.669)	32.00 (1.260)	17.47 (0.688)		26.52 (1.044)
15	31.26 (1.231)	24.61 (0.969)	24.67 (0.971)			22.02 (0.867)	18.00 (0.709)	22.00 (0.866)	19.00 (0.748)	35.00 (1.378)	20.77 (0.818)		29.72 (1.170)
17	33.63 (1.324)	26.97 (1.062)	27.84 (1.096)			25.25 (0.994)	20.00 (0.787)	25.25 (0.994)	22.00 (0.866)	39.00 (1.535)	23.94 (0.943)	3.76 (0.148)	32.87 (1.294)
19	36.83 (1.450)	29.36 (1.156)	30.56 (1.203)			28.37 (1.117)	22.00 (0.866)	28.40 (1.118)	25.00 (0.984)	42.00 (1.654)	26.48 (1.043)		31.67 (1.247)
21	39.98 (1.574)	31.75 (1.250)	33.73 (1.328)			31.55 (1.242)	22.00 (0.866)	31.55 (1.242)	27.00 (1.063)	45.00 (1.772)	29.63 (1.167)		34.64 (1.364)
23	43.18 (1.700)	34.93 (1.375)	36.91 (1.453)	19.99 (0.787)	3.15 (0.124)	34.52 (1.359)	22.00 (0.866)	34.50 (1.358)	29.00 (1.142)	48.00 (1.890)	32.81 (1.292)		39.22 (1.544)
25	46.22 (1.820)	38.10 (1.500)	40.08 (1.578)			37.30 (1.467)	24.00 (0.945)	37.30 (1.469)	31.00 (1.221)	51.00 (2.008)	35.88 (1.413)		42.40 (1.669)

See page 29 for insert arrangements and back cover for configuration sheet.

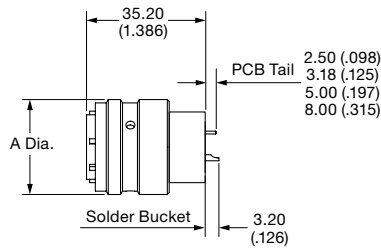


# DEUTSCH H91 Series Filter Connectors

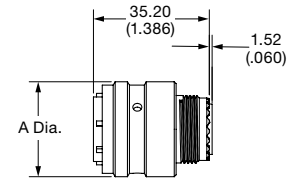
## MIL-DTL-38999 SERIES I

### Plug Connectors

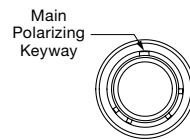
Shell Size	A Dia.
9	23.82 (0.938)
11	26.19 (1.031)
13	28.57 (1.125)
15	30.96 (1.219)
17	33.32 (1.312)
19	36.52 (1.438)
21	39.67 (1.562)
23	42.87 (1.688)
25	46.02 (1.812)



PCB/Solder Bucket Contacts



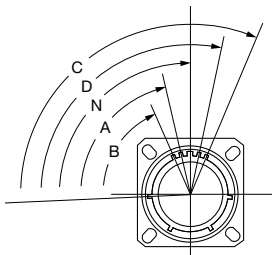
Crimp Contacts



Front View

### Keying Options

(Viewed from Mating Face of the Receptacle Connector)



Shell Size	Key Position				
	N	A	B	C	D
9	95	77	—	—	113
11	95	81	67	123	109
13	95	75	63	127	115
15	95	74	61	129	116
17	95	77	65	125	113
19	95	77	65	125	113
21	95	77	65	125	113
23	95	80	69	121	110
25	95	80	69	121	110

See page 29 for insert arrangements and back cover for configuration sheet.



## Insert Arrangements

- **Filter Connector Series:** H91, H92, H93, H94, HDJ
- **Industry Specification:** MIL-DTL-38999
- **Insert Arrangement Specification:** MIL-STD-1560
- **Notes:** H91, H92, H93, H94 connectors use odd numbers for shell sizes  
 HDJ and AS connectors use even numbers for shell sizes  
 Shaded rows are TE-specific configurations not covered in MIL-STD-1560

Shell Size	Arrangement	Contact Size and Type													
		0	4	8 Twin	8 Coax	8 Power	12 Twin	12 Coax	10	12	16	20	22	23	24
9 (8)	09-98 (08-98)	—	—	—	—	—	—	—	—	—	—	3	—	—	—
	09-35 (08-35)	—	—	—	—	—	—	—	—	—	—	—	6	—	—
	09-07 (08-07)	—	—	—	—	—	—	—	—	—	—	—	—	7	—
	09-23 (08-23)	—	—	—	—	—	—	—	—	—	—	—	—	—	9
	09-11 (08-11)	—	—	—	—	—	—	—	—	—	—	—	—	—	11
11 (10)	11-02 (10-02)	—	—	—	—	—	—	—	—	—	2	—	—	—	—
	11-04 (10-04)	—	—	—	—	—	—	—	—	—	—	4	—	—	—
	11-05 (10-05)	—	—	—	—	—	—	—	—	—	—	—	5	—	—
	11-98 (10-98)	—	—	—	—	—	—	—	—	—	—	—	6	—	—
	11-99 (10-99)	—	—	—	—	—	—	—	—	—	—	—	7	—	—
	11-35 (10-35)	—	—	—	—	—	—	—	—	—	—	—	—	13	—
	11-23 (10-23)	—	—	—	—	—	—	—	—	—	—	—	—	—	19
11-23 (10-23)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	23
13 (12)	13-04 (12-04)	—	—	—	—	—	—	—	—	—	4	—	—	—	—
	13-08 (12-08)	—	—	—	—	—	—	—	—	—	—	8	—	—	—
	13-98 (21-98)	—	—	—	—	—	—	—	—	—	—	10	—	—	—
	13-35 (12-35)	—	—	—	—	—	—	—	—	—	—	—	22	—	—
	13-23 (12-23)	—	—	—	—	—	—	—	—	—	—	—	—	32	—
	13-41 (12-41)	—	—	—	—	—	—	—	—	—	—	—	—	—	41
15 (14)	15-05 (14-08)	—	—	—	—	—	—	—	—	—	5	—	—	—	—
	15-97 (14-97)	—	—	—	—	—	—	—	—	—	4	8	—	—	—
	15-15 (14-15)	—	—	—	—	—	—	—	—	—	1	14	—	—	—
	15-18 (14-18)	—	—	—	—	—	—	—	—	—	—	18	—	—	—
	15-19 (14-18)	—	—	—	—	—	—	—	—	—	—	19	—	—	—
	15-26 (14-26)	—	—	—	—	—	—	—	—	—	2	—	24	—	—
	15-35 (14-35)	—	—	—	—	—	—	—	—	—	—	—	37	—	—
	15-23 (14-23)	—	—	—	—	—	—	—	—	—	—	—	—	—	55
	15-64 (14-64)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
17 (16)	17-22 (16-22)	—	—	2	—	—	—	—	—	—	2	—	—	—	—
	17-06 (16-06)	—	—	—	—	—	—	—	—	—	6	—	—	—	—
	17-08 (16-08)	—	—	—	—	—	—	—	—	—	—	8	—	—	—
	17-11 (16-11)	—	—	2	1	—	—	—	—	—	—	8	—	—	—
	17-19 (16-19)	—	—	—	—	—	—	—	—	—	—	4	11	4	—
	17-20 (16-20)	—	—	—	—	—	—	—	—	—	4	—	—	16	—
	17-99 (16-99)	—	—	—	—	—	—	—	—	—	—	2	21	—	—
	17-24 (16-24)	—	—	—	—	2	—	—	—	—	—	—	—	22	—
	17-26 (16-26)	—	—	—	—	—	—	—	—	—	—	—	26	—	—
	17-03 [17-02] (16-03)	—	—	—	—	—	—	—	—	—	—	—	—	38	—
	17-35 (16-35)	—	—	—	—	—	—	—	—	—	—	—	—	55	—
	17-23 (16-23)	—	—	—	—	—	—	—	—	—	—	—	—	—	73



## Insert Arrangements

Shell Size	Arrangement	Contact Size and Type													
		0	4	8 Twin	8 Coax	8 Power	12 Twin	12 Coax	10	12	16	20	22	23	24
19 (18)	19-11 (18-11)	—	—	—	—	—	—	—	—	—	11	—	—	—	—
	19-19 [19-18] 18-18	—	—	4	—	—	—	—	—	—	—	—	14	—	—
	19-28 (18-28)	—	—	—	—	—	—	—	—	—	2	26	—	—	—
	19-32 (18-32)	—	—	—	—	—	—	—	—	—	—	32	—	—	—
	19-35 (18-35)	—	—	—	—	—	—	—	—	—	—	—	—	66	—
	19-23 (18-23)	—	—	—	—	—	—	—	—	—	—	—	—	—	88
	19-118 (18-118)	—	—	—	—	—	—	—	—	—	—	—	—	—	118
21 (20)	21-76 [21-75] (20-76)	—	—	4	—	—	—	—	—	—	—	—	—	—	—
	21-48 (20-48)	—	—	—	—	4	—	—	—	—	—	—	—	—	—
	21-11 (20-11)	—	—	—	—	—	—	—	11	—	—	—	—	—	—
	21-16 (20-16)	—	—	—	—	—	—	—	—	—	16	—	—	—	—
	21-20 (20-20)	—	—	2	—	—	—	—	—	—	—	18	—	—	—
	21-39 (20-39)	—	—	—	—	—	—	—	—	—	2	37	—	—	—
	21-41 (20-41)	—	—	—	—	—	—	—	—	—	—	41	—	—	—
21-35 (20-35)	—	—	—	—	—	—	—	—	—	—	—	79	—	—	
	21-23 (20-23)	—	—	—	—	—	—	—	—	—	—	—	—	121	
23 (22)	23-100 (22-100)	1	—	—	—	—	—	—	—	—	—	—	—	—	—
	23-24320	—	2	—	—	—	—	—	—	—	—	—	—	—	—
	23-24320 (22-24320)	—	—	—	—	—	—	—	—	—	—	3	—	—	—
	23-68 (22-68)	—	—	—	—	6	—	—	—	—	—	—	—	—	—
	23-06 (22-06)	—	—	6	—	—	—	—	—	—	—	—	—	—	—
	23-21 (22-21)	—	—	—	—	—	—	—	—	—	21	—	—	—	—
	23-54 (22-54)	—	—	—	—	—	—	—	—	4	9	—	40	—	—
	23-53 (22-53)	—	—	—	—	—	—	—	—	—	—	53	—	—	—
	23-55 (22-55)	—	—	—	—	—	—	—	—	—	—	55	—	—	—
23-63 (22-63)	—	—	—	—	—	—	—	—	4	4	—	49	—	—	
23-35 (22-35)	—	—	—	—	—	—	—	—	—	—	—	100	—	—	
	23-23 (22-23)	—	—	—	—	—	—	—	—	—	—	—	—	151	
25 (24)	25-44420	—	4	—	—	—	—	—	—	—	—	4	—	—	—
	25-10 (25-08)	—	8	—	—	—	—	—	—	—	—	—	—	—	—
	25-11 (24-11)	—	—	—	—	—	—	—	9	—	—	2	—	—	—
	25-24 (24-24)	—	—	—	—	—	—	—	—	12	12	—	—	—	—
	25-21 [25-20] 24-21	—	—	3	—	—	—	—	4	—	—	13	10	—	—
	25-19 (24-19)	—	—	—	—	—	—	—	—	19	—	—	—	—	—
	25-29 (24-29)	—	—	—	—	—	—	—	—	—	—	29	—	—	—
	25-37 (24-37)	—	—	—	—	—	—	—	—	—	—	37	—	—	—
	25-17 (24-17)	—	—	6	—	—	—	—	—	—	—	—	36	—	—
	25-43 (24-43)	—	—	—	—	—	—	—	—	—	—	20	23	—	—
	25-47 [25-46] (24-47)	—	—	—	2	—	—	—	—	—	4	40	—	—	—
	25-91 [25-90] (24-91)	—	—	2	—	—	—	—	—	—	4	40	—	—	—
	25-04 (24-04)	—	—	—	—	—	—	—	—	—	—	8	48	—	—
	25-35 (24-35)	—	—	—	—	—	—	—	—	—	—	—	128	—	—
	25-61 (24-61)	—	—	—	—	—	—	—	—	—	—	—	61	—	—
	25-09 [25-07] (24-09)	—	—	2	—	—	—	—	—	—	—	—	—	97	—
	25-23 (24-23)	—	—	—	—	—	—	—	—	—	—	—	—	187	