

FD6A-12 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ1438
- Plug with electromagnetic separation mechanism, mechanical pole pulling separation mechanism and hand wheel locking device
- Hybrid power and general low frequency contacts
- Soldering termination
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: $-55^{\circ}\text{C}\sim 125^{\circ}\text{C}$

[Mechanical performances]

——Random vibration: $0.3\text{G}^2/\text{Hz}$, acceleration rms 20G ;

——Sinusoidal vibration: acceleration 196m/s^2

——Shock: peak acceleration 735m/s^2

——Acceleration: 490m/s^2

——Durability: 500 cycles;

——Mechanical separation force: $39.2\text{N}\sim 98\text{N}$;

[Electrical performances]

——rated current and contact resistance

Contact size (mm)	Rated current (A)	Contact resistance (mΩ)	Contact No.
Φ1	5	10	8
Φ10	200	5	4

——withstanding voltage

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1500
Damp heat	500
High altitude (1KPa)	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC RMS)

——Insulation resistance

Operation environment	Normal temp. (MΩ)	Elevated and low temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥ 1500	≥ 500	≥ 20
Between magnetic parts and shell	≥ 100	≥ 50	≥ 10

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.

——Electricity separation time: not more than 0.1s

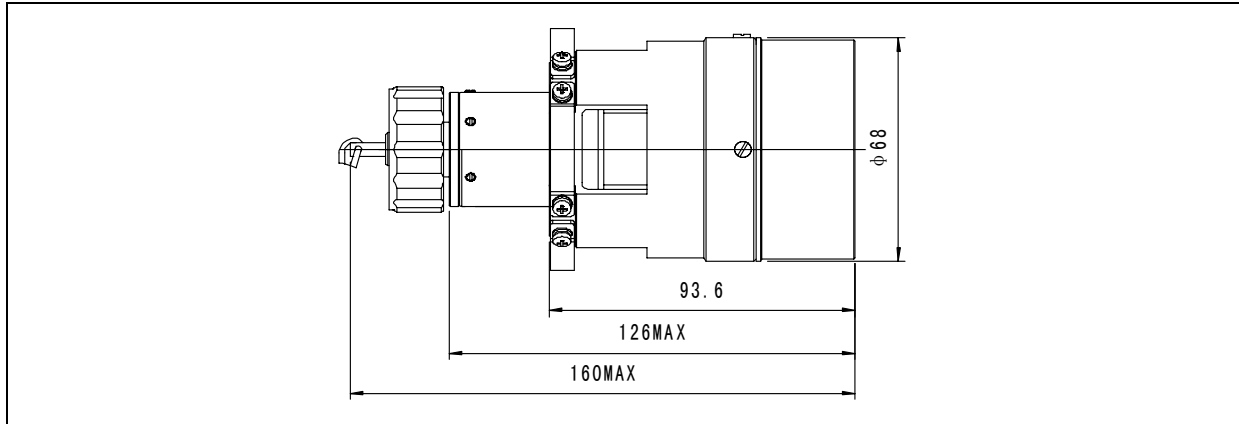
Ordering P/N

FD6A-12TJ: breakaway connector, 12 pairs of contact couplers, plug with pins.

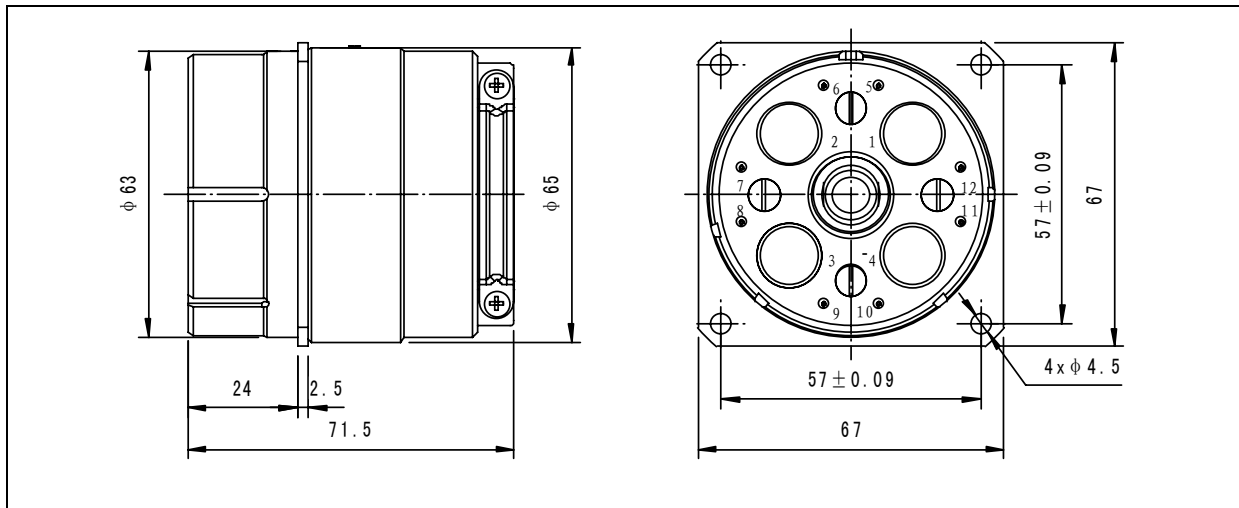
FD6A-12ZK: breakaway connector, 12 pairs of contact couplers, receptacle with

Outline dimensions

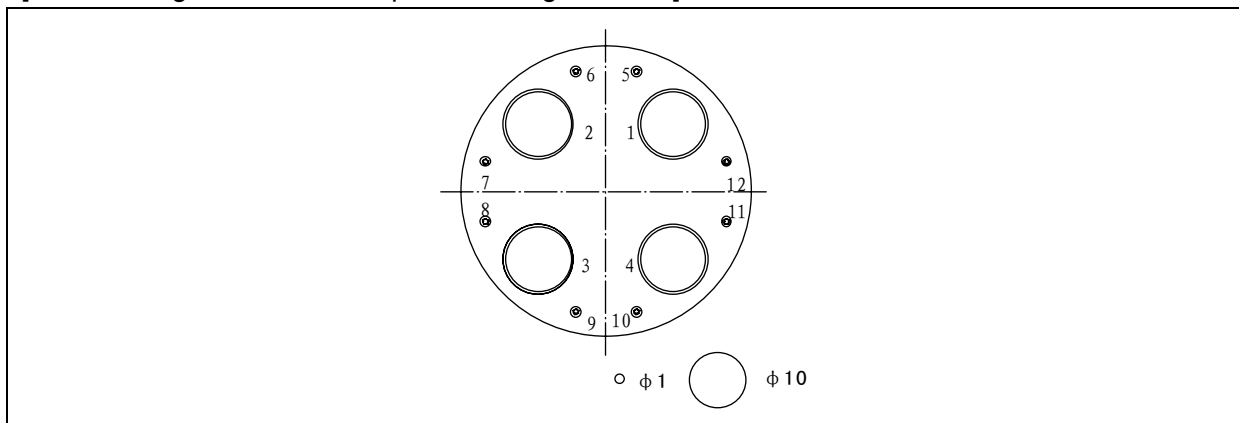
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Contact size	Contact No.	Socket type
$\phi 1$	8	Hyperboloid socket
$\phi 10$	4	Crown ribbon socket

Plug and receptacle coupling method: hand wheel coupling

FD31A-15 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ1338
- Plug and receptacle with separation steel rope
- contact couplers are all low frequency contact couplers
- All soldered with wires
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55℃~125℃

[Mechanical performances]

——Vibration: 10~50Hz, amplitude 2mm; 50~2000Hz, acceleration 98m/s²;

——Shock: 686m/s²;

——Acceleration: 833m/s²;

——Endurance: 500 cycles

——Mechanical separation force: 100N~200N;

[Electrical performances]

——Contact resistance and rated current for each contact coupler pair: Φ1-5A-5mΩ;

Φ1.5-10A-3mΩ

Withstanding voltage

Operation environment	Test voltage (50Hz,AC RMS) V
Normal temperature and pressure	1000
Damp heat	500
High altitude	200

Insulation resistance

Operation environment	Normal temp. (MΩ)	Elevated temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥1000	≥500	≥20

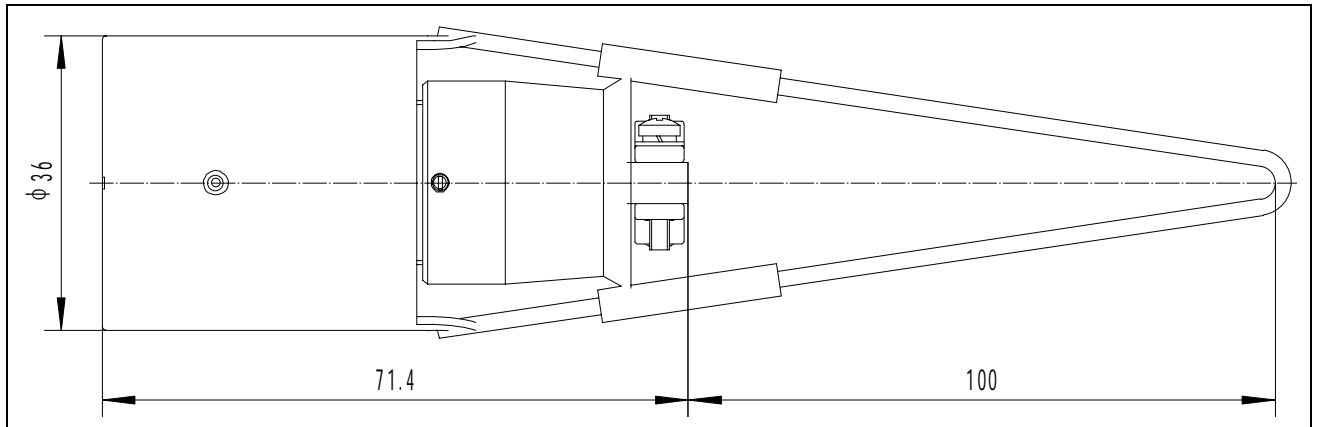
Ordering P/N

FD31A-15TJ: breakaway connector, contact couplers 15 pairs, plug with pins.

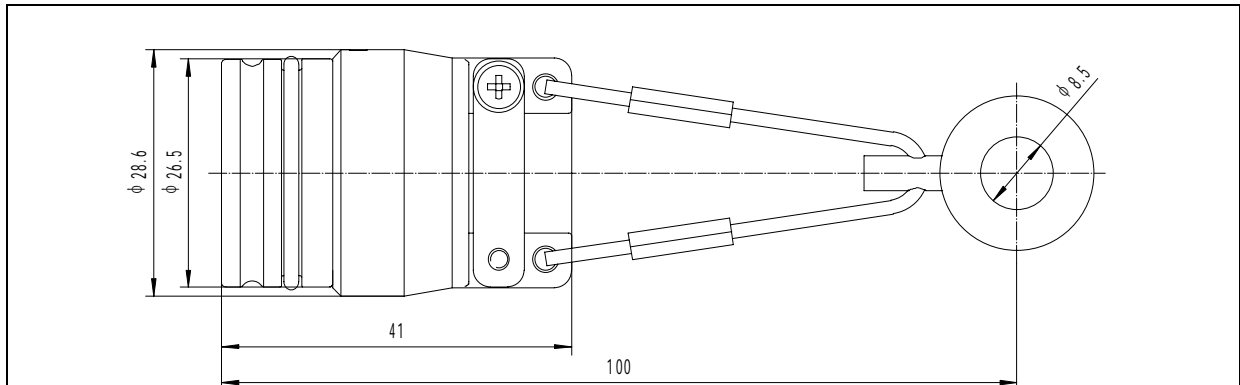
FD31A-15ZK: breakaway connector, contact couplers 15 pairs, receptacle with sockets.

Outline dimensions

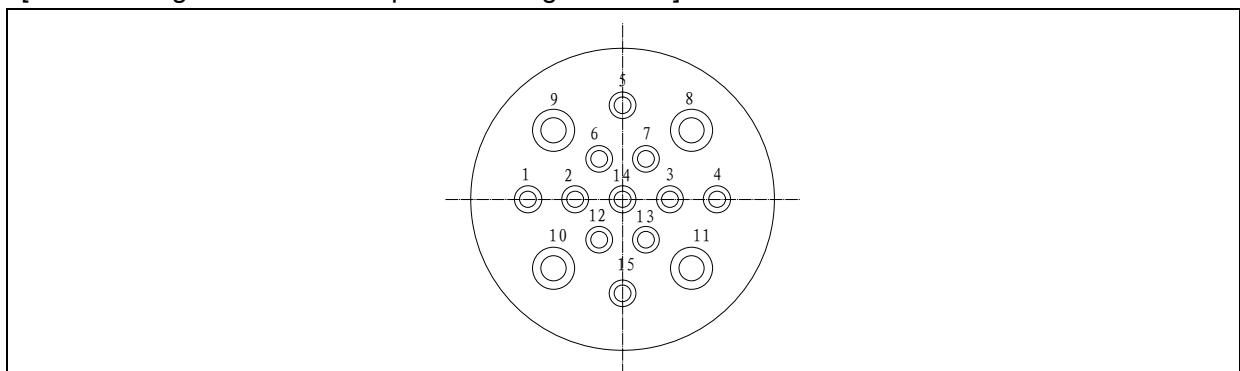
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Contact size	Contact No.	Socket type
$\phi 1$	11	Open-end socket
$\phi 1.5$	4	Open-end socket

Plug and receptacle coupling method: rotating type

FDS8-24-01 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ1273
- Plug and Receptacle keep watertight under water depth of 30m after mating
- For receptacle under water depth of 30m, each contact keeps insulative
- contact couplers are all low frequency contact couplers
- All soldered with wires
- Application: aerospace, marine fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -10℃~45℃

——watertight: after plug and receptacle mating, keep watertight under water depth of 30m; after plug and receptacle unmating, mounting endface of receptacle shall withstand the 30m water pressure for not less than 50h and short circuit within receptacle is not allowed. Insulation resistance not less than 2MΩ

[Mechanical performances]

——Random vibration: 10~1000Hz, power spectrum density is 0.04G²/Hz; 1000Hz~2000Hz, power spectrum density is counted per -6dB/oct of decrease and RMS Acceleration of 7.72g.

——Sine vibration: sine scan is logarithm scan, 150m/s²;

——Shock: 50g, duration 5ms;

——Acceleration: 490m/s²

——Endurance: 500 cycles

——Mechanical separation force: 50N~100N; angle between pulling direction and axis is 15°;

[Electrical performances]

——Contact resistance and Rated current for each contact coupler pair: 16#-13A-8mΩ, 20#-7.5A-15mΩ

——Withstanding voltage

Operation environment	Test voltage (50Hz, AC RMS) V
Normal temperature and pressure	1000
Damp heat	500
Elevated temperature	200

——Insulation resistance

Operation environment	Normal temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥1000	≥20

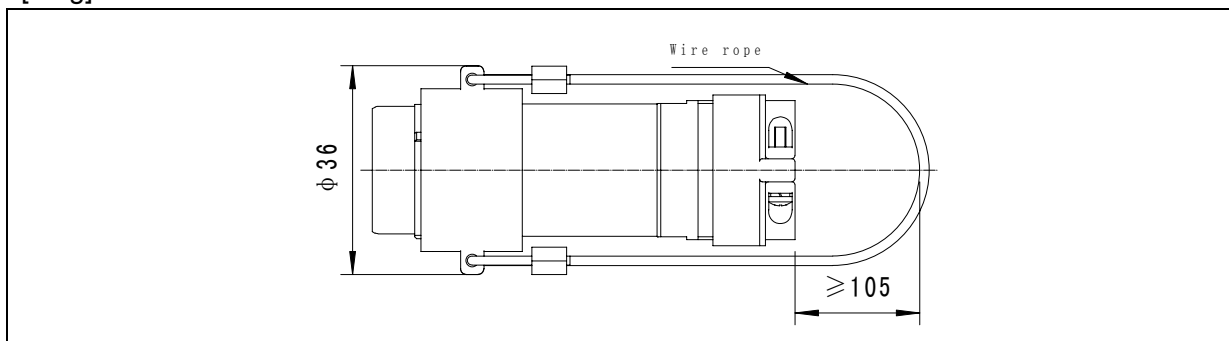
Ordering P/N

FDS8-24TK-01: breakaway connector, contact couplers 24 pairs, plug with sockets.

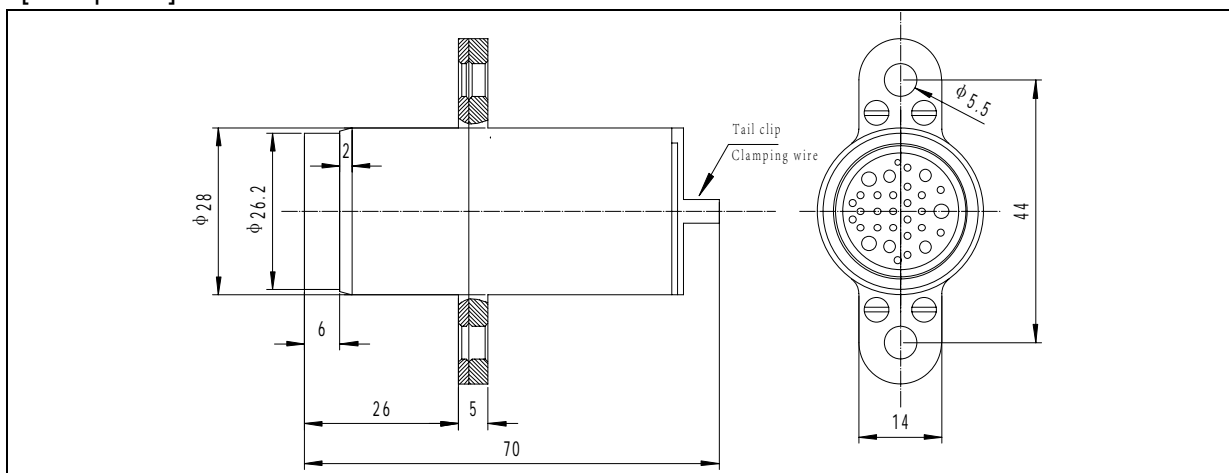
FDS8-24ZJ-01: breakaway connector, contact couplers 24 pairs, receptacle with pins.

Outline dimensions

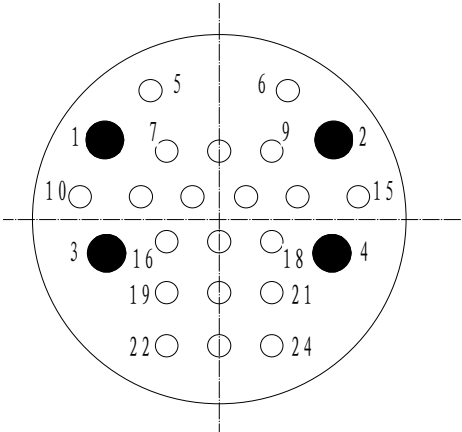
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]

		
Contact size	Contact No.	Socket type
20#	20	Blade spring socket
16#	4	Blade spring socket

Plug and receptacle coupling method: straight type

FD1-37 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ275
- Plug with electromagnetic separation mechanism and machnical pole pulling separation mechanism
- Receptacle with anti 850°C flame burning function
- For receptacle interface, each contact keeps insulative in raindrop
- contact couplers are all low frequency contact couplers
- All soldered with wires
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55°C~125°C

[Mechanical performances]

——Random vibration: 0.3G²/Hz, acceleration rms 20G

——Sinusoidal vibration: acceleration 150m/s²

——Shock: peak acceleration 735m/s²

——Acceleration: 250m/s²

——Endurance: 500 cycles;

——Mechanical separation force: 28N~88N;

[Electrical performances]

——Contact resistance and rated current for each contact coupler pair: Φ1-5A-10mΩ

——Withstanding voltage

Operation environment	Test voltage (50Hz,AC RMS) V
Normal temperature and pressure	1000
Damp heat	500
High altitude (1KPa)	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC rms)

——Insulation resistance

Operation environment	Normal temp. (MΩ)	Elevated temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥1000	≥500	≥20
Between magnetic parts and shell	≥100	≥50	≥10

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.

——Electricity separation time: not more than 0.1s

Product features of each P/N

P/N	Product features
FD1-37ZK	The receptacle has the ability of withstanding 850°C flame burning. After mating with FD1-37TJ, contact resistance shall not be more than 10 mΩ.
FD1S-37ZK	The receptacle interface has anti raindrop and anti short circuit function. That is, receptacle interface keeps insulative with contact couplers in rain. After mating with FD1-37TJ, contact resistance shall not be more than 15 mΩ.

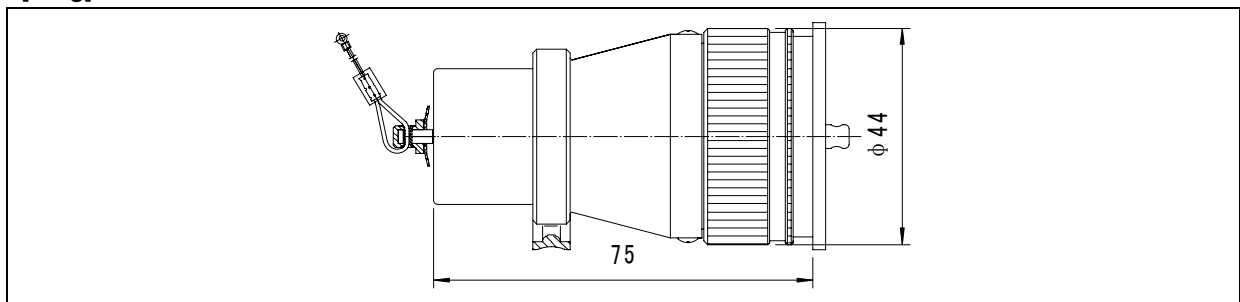
Ordering P/N

FD1-37TJ: breakaway connector, contact couplers 37 pairs, plug with pins.

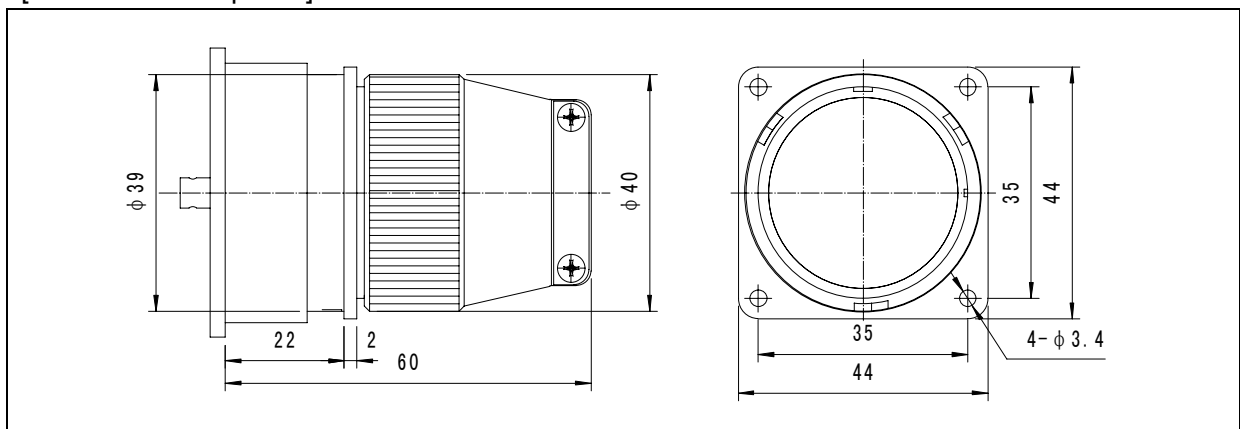
FD1-37ZK: breakaway connector, contact couplers 37 pairs, receptacle with sockets.

Outline dimensions

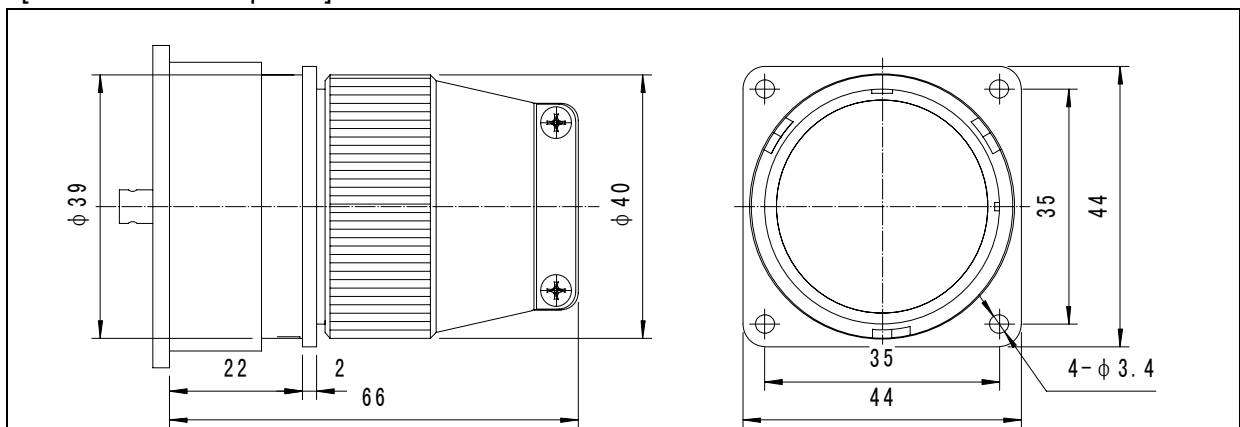
[Plug]



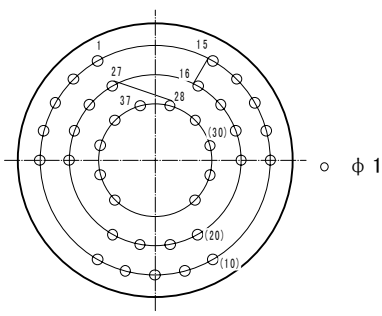
[FD1-37ZK Receptacle]



[FD1S-37ZK Receptacle]



[Insert arrangement from receptacle mating interface]

		
Contact size	Contact No.	Socket type
φ1	37	Hyperboloid socket

Plug and receptacle coupling method: straight and revolving types

FD6W-38 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ1119
- Plug with electromagnetic separation mechanism and machnical pole pulling separation mechanism
- Receptacle with anti 850°C flame burning function
- Plug and receptacle with anti raindrop function after mating
- Power and low frequency signal hybrid
- Wires are soldered
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55°C~+125°C

——High altitude: 1×10^{-3} Pa

[Mechanical performances]

——Sine vibration: 196 m/s^2

——Random vibration: power spectrum density $0.6 \text{ G}^2/\text{Hz}$

——Shock: 1200 m/s^2

——Acceleration: 490 m/s^2

——High altitude: 1×10^{-3} Pa

——Flame retardant: receptacle withstand 850°C flame heat rediation for 90s

——Endurance: 500 cycles

[Electrical performances]

——Contact resistance and rated current: Φ1-5A-10mΩ; Φ2-20A-5mΩ

——Withstanding voltage:

Operation environment	Test voltage (50Hz, AC RMS) V
Normal temperature and pressure	1000
Damp heat	250
High altitude	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC

rms)

——Insulation resistance:

Operation environment	Normal temp. (MΩ)	Elevated temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥1000	≥500	≥20
Between magnetic parts and shell	≥100	≥50	≥10

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.;

——Electricity separation time: not more than 0.1s

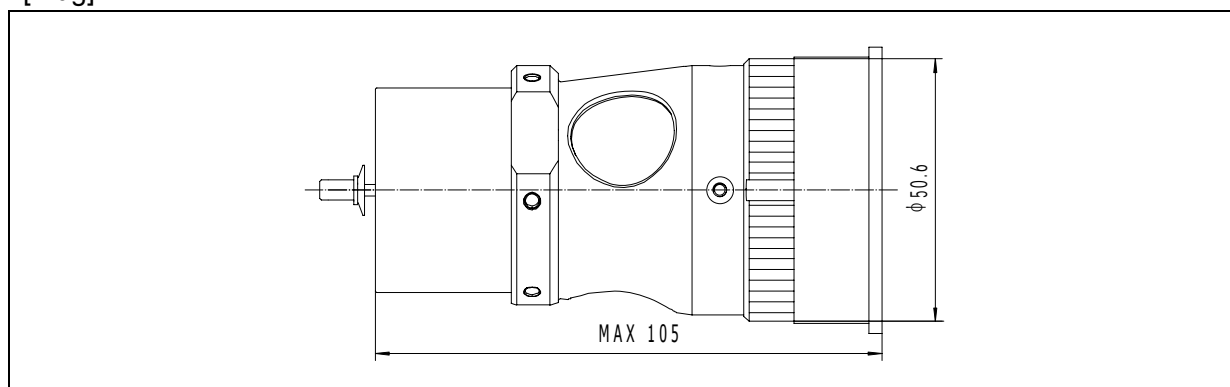
Ordering P/N

FD6W-38TJ: breakaway connector, anti raindrop, contact couplers 38 pairs, plug with pins.

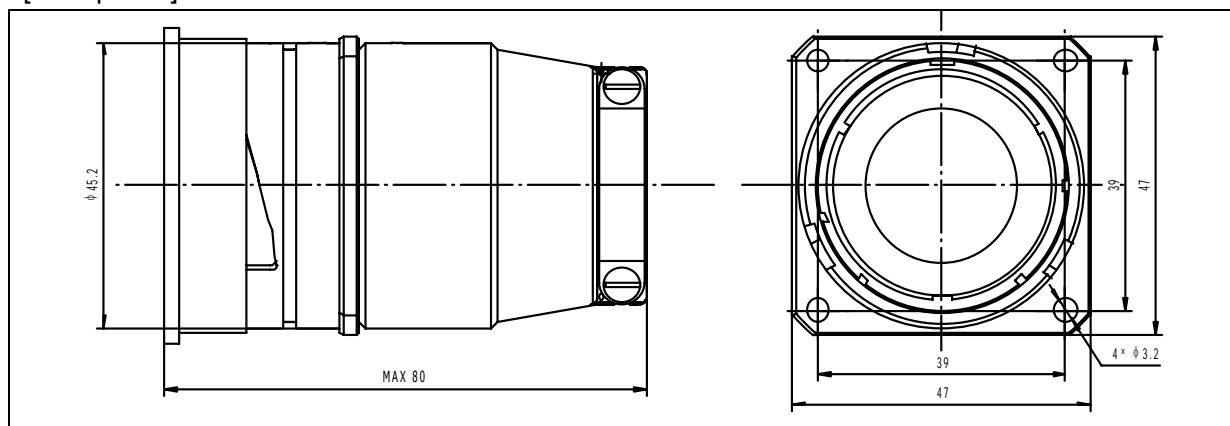
FD6W-38ZK: breakaway connector, anti raindrop, anti flame, contact couplers 38 pairs, receptacle with sockets.

Outline dimensions

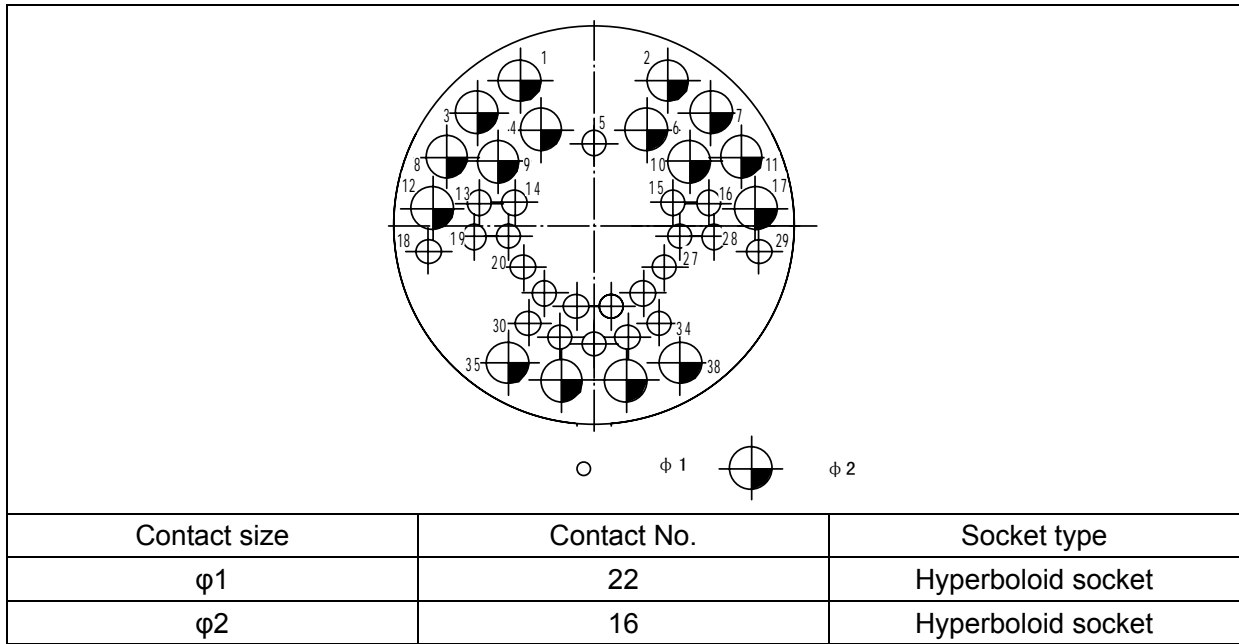
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Plug and receptacle coupling method: straight and revolving types.

FD6A-42 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ275
- Plug with electromagnetic separation mechanism and machnical pole pulling separation mechanism
- Receptacle with anti 850°C flame burning function
- 1553B data bus and low frequency contacts hybrid
- Connection with wires: 1553B data bus by crimping and others by soldering
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55°C~125°C

[Mechanical performances]

——Random vibration: $0.3G^2/Hz$, acceleration rms 20G

——Sinusoidal vibration: acceleration $150m/s^2$

——Shock: peak acceleration $735m/s^2$

——Acceleration: $250m/s^2$

——Endurance: 500 cycles

[Electrical performances]

——Contact resistance and rated current for each contact coupler pair: $\Phi 1-5A-10m\Omega$

——Withstanding voltage:

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	500
High altitude (1KPa)	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC rms)

——Insulation resistance:

Operation environment	Normal temp. (M Ω)	Elevated temp. (M Ω)	After damp heat test (M Ω)
Between contacts and between contact and shell	≥ 1000	≥ 500	≥ 20
Between magnetic parts and shell	≥ 100	≥ 50	≥ 10

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.

——Electricity separation time: not more than 0.1s

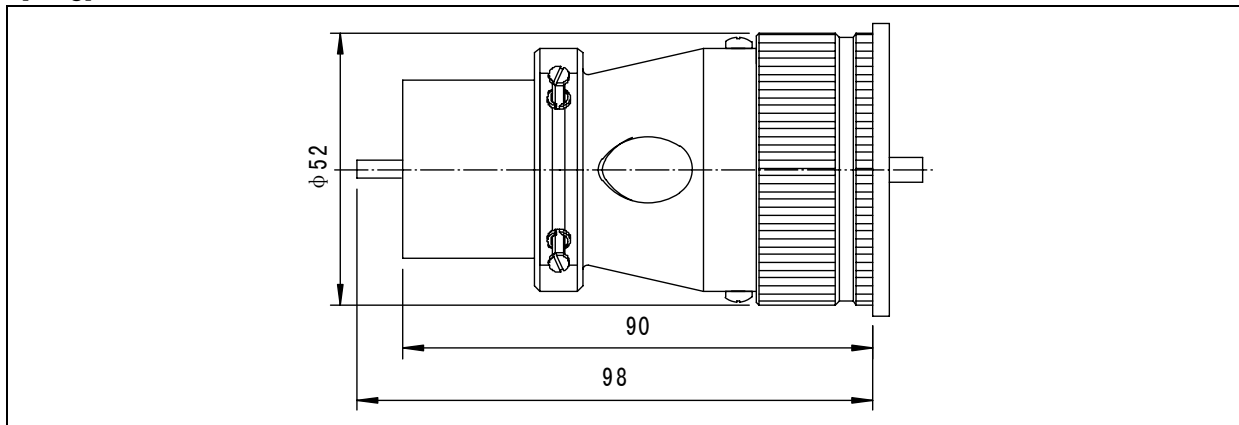
Ordering P/N

FD6A-42TK: breakaway connector, digital hybrid, contact couplers 42 pairs, plug with sockets.

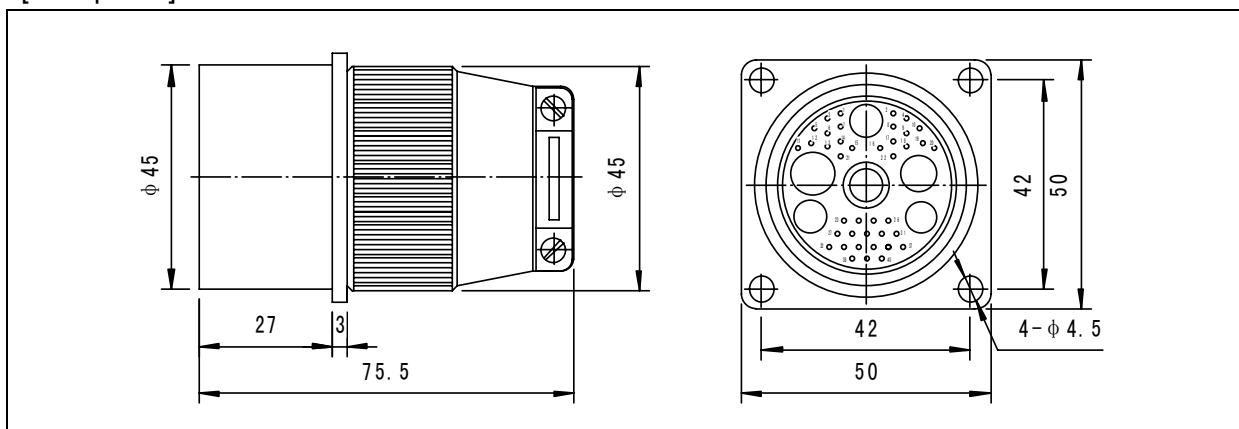
FD6A-42ZJ: breakaway connector, digital hybrid, contact couplers 42 pairs, receptacle with pins.

Outline dimensions

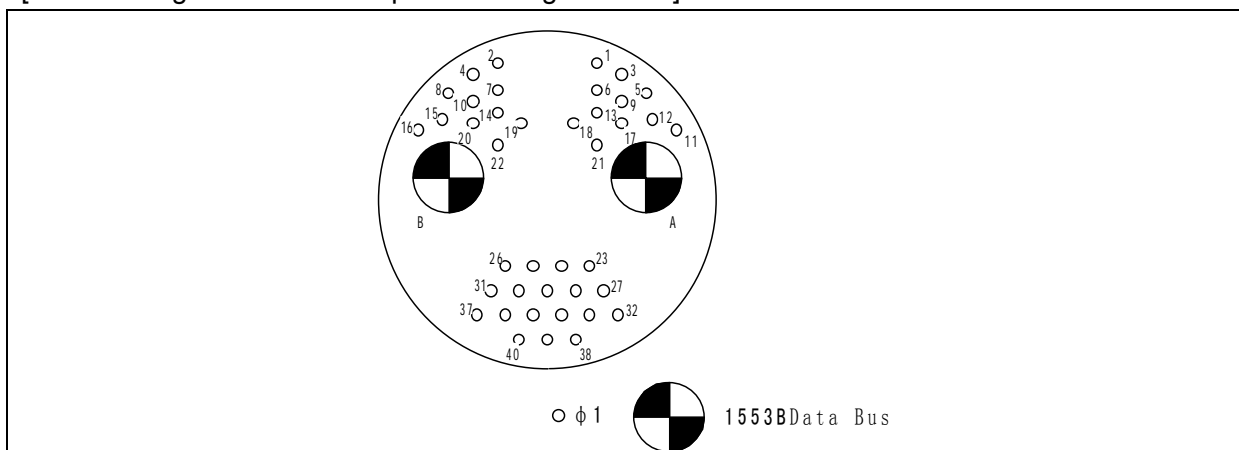
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Contact size	Contact No.	Socket type
$\phi 1$	40	Hyperboloid socket
1553B data bus	2	Bus

Plug and receptacle coupling method: straight and revolving types.

FD6-42 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ1492
- Plug with mechanical pole pulling separation mechanism and axial receding stop mechanism
- Big obliquity separation function after plug and receptacle mating
- Plug and receptacle with anti raindrop function after mating
- Anti raindrop function is achieved after receptacle mating with metallic dust cap
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

—operation temperature: $-55^{\circ}\text{C}\sim+125^{\circ}\text{C}$

[Mechanical performances]

—Sine vibration: 10Hz~2000Hz, acceleration 150m/s^2

—Random vibration: $0.3\text{G}^2/\text{Hz}$

—Shock: 735m/s^2

—Acceleration: 250 m/s^2

—Endurance: 500 cycles

[Electrical performances]

—Contact resistance and rated current: $\Phi 1\text{-}5\text{A-}5\text{m}\Omega$

—Withstanding voltage

Operation environment	Test voltage (50Hz, AC RMS) V
Normal temperature and pressure	1000
Damp heat	250
High altitude (1.1KPa)	200

—Insulation resistance

Operation environment	Normal temp. (M Ω)	Elevated temp. (M Ω)	After damp heat test (M Ω)
Between contacts and between contact and shell	≥ 1000	≥ 50	≥ 50

—Mechanical separation force: plug and receptacle need 50N~88N axial separation force (pulling rope and separation force direction is 0°); ensure the angle within 50° (including 50°) during slanting pulling and separation to separate plug and receptacle and separation force shall not be more than 1000N; when steel wire rope and plug separation direction is 180° , plug and receptacle are unlocked.

Ordering P/N

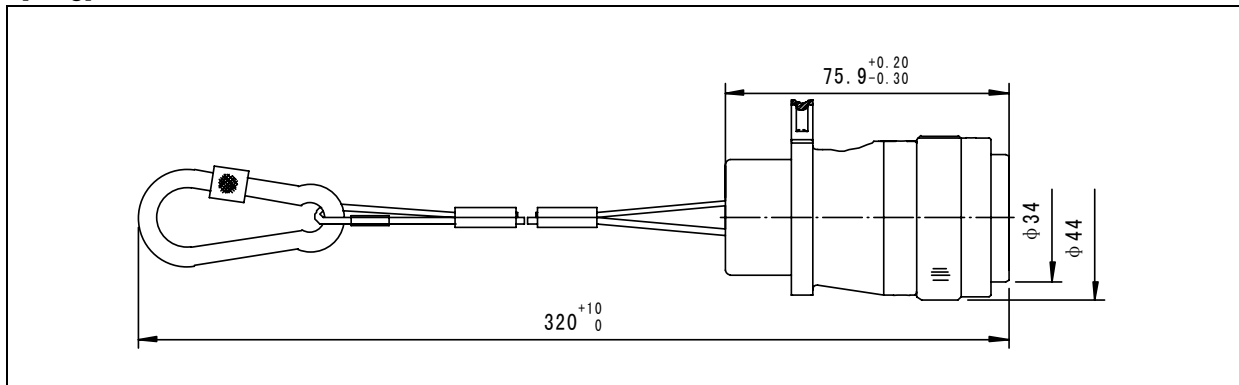
FD6-42TJ: breakaway donconnector, contact couplers 42 pairs, plug with pins.

FD6-42ZK: breakaway connector, contact couplers 42 pairs, receptacle with sockets.

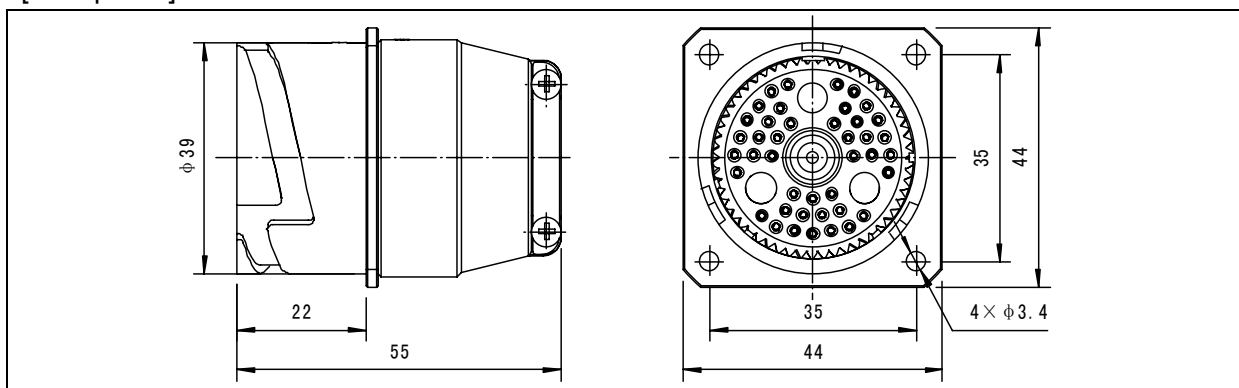
FD6-42FJ: metallic cap for receptacle.

Outline dimensions

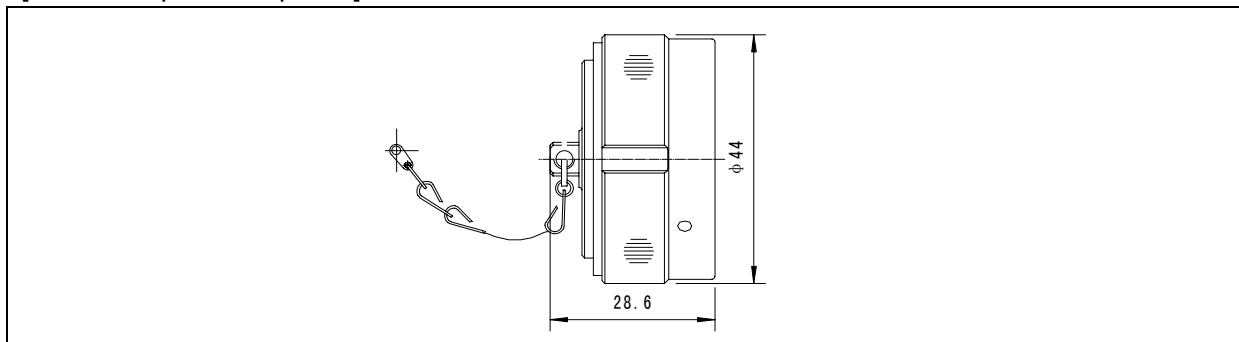
[Plug]



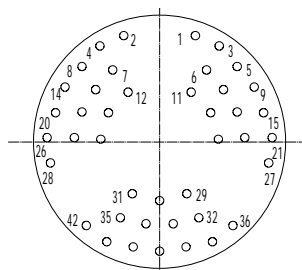
[Receptacle]



[Metallic cap for receptacle]



[Insert arrangement from receptacle mating interface]

		
Contact size	Contact No.	Socket type
$\phi 1$	42	Hyperboloid socket

Plug and receptacle coupling method: straight and revolving types.

FD15-42 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ1230
- Plug with hand wheel locking device and mechanical pole pulling separation mechanism
- contact couplers are high and low frequencies hybrid
- Connect all the wires by crimping
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55℃~125℃

[Mechanical performances]

——Random vibration: $0.3G^2/Hz$

——Shock: acceleration $700m/s^2$

——Endurance: 500 cycles

[Electrical performances]

——Contact resistance and Rated current:

Contact size	Contact resistance (Ω)	Rated current (A)
20#	≤ 0.005	7.5
16#	≤ 0.0025	13
12#	≤ 0.0015	20
10#	≤ 0.001	40

——Withstanding voltage: 1000V (rms), 50Hz, one minute.

——Insulation resistance

Operation environment	Insulation resistance ($M\Omega$)
Normal temperature	≥ 3000
After moisture test	≥ 20
Elevated temperature	≥ 500

——Mechanical separation force: 50N~250N

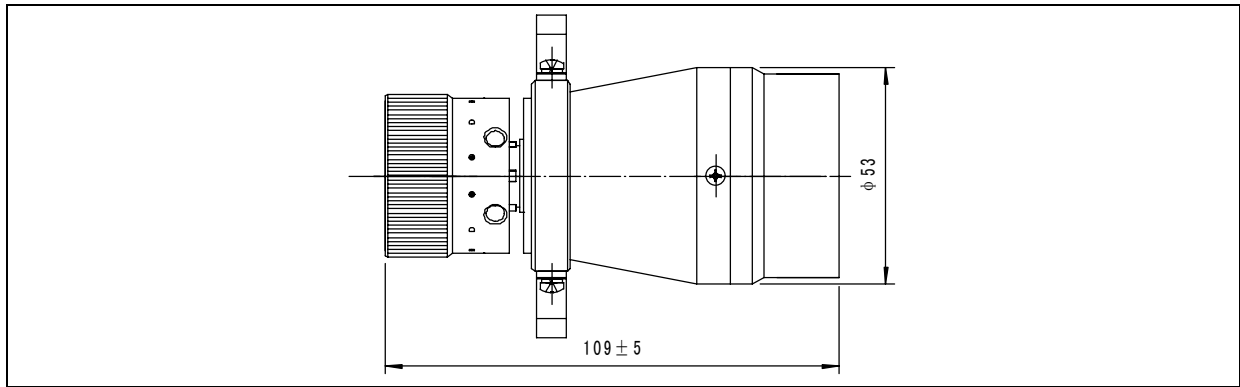
Ordering P/N

FD15-42TJ: breakaway connector, hand wheel structure, contact couplers 42 pairs, plug with pins.

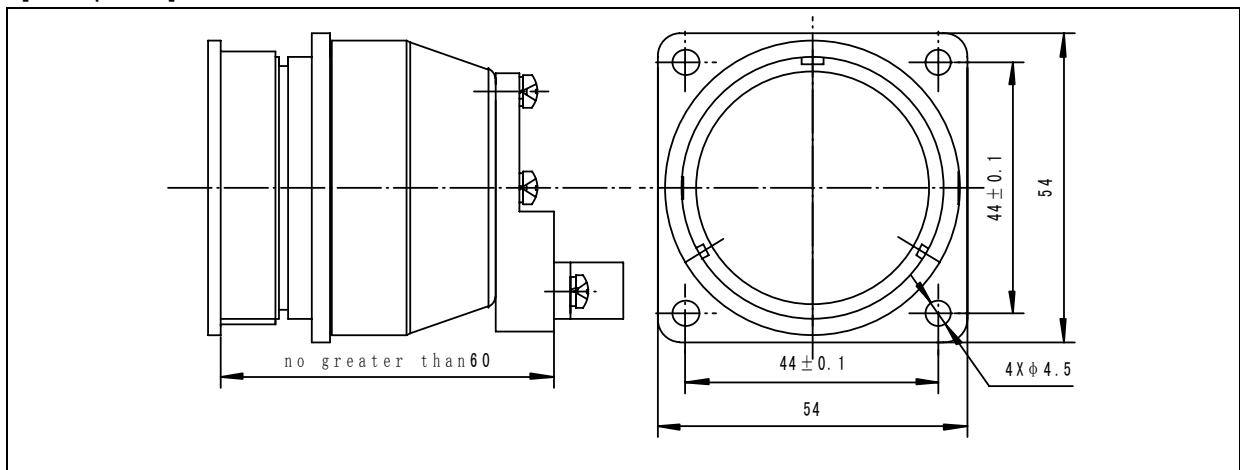
FD15-42ZK: breakaway connector, contact couplers 42 pairs, receptacle with sockets.

Outline dimensions

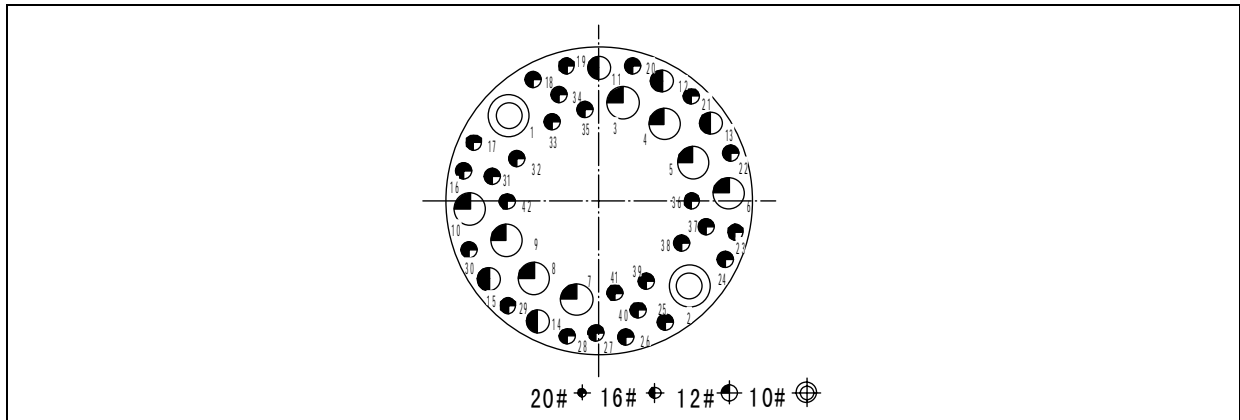
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Contact size	Contact No.	Socket type
20#	27	Blade spring socket
16#	5	Blade spring socket
12#	4 power contacts	Blade spring socket
	4 high frequency contacts	
10#	2	Blade spring socket

Plug and receptacle coupling method: hand wheel coupling

FD6A-43 Breakaway Connectors

Product brief introduction

- Compliant with: Q/21EJ275
- Plug with electromagnetic separation mechanism and machnical pole pulling separation mechanism
- Receptacle with anti 850°C flame burning function
- 1553B data bus and CAN bus and low frequency contacts hybrid
- Connection with wires: 1553B data bus by crimping and others by soldering
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55°C~125°C

[Mechanical performances]

——Random vibration: $0.3G^2/Hz$, acceleration rms 20G

——Sinusoidal vibration: acceleration $150m/s^2$

——Shock: peak acceleration $735m/s^2$

——Acceleration: $250m/s^2$

——Endurance: 500 cycles

[Electrical performances]

——Contact resistance and rated current for each contact coupler pair: $\Phi 1-5A-0m\Omega$

——Withstanding voltage:

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	500
High altitude (1KPa)	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC rms)

——Insulation resistance:

Operation environment	Normal temp. (M Ω)	Elevated temp. (M Ω)	After damp heat test (M Ω)
Between contacts and between contact and shell	≥ 1000	≥ 500	≥ 20
Between magnetic parts and shell	≥ 100	≥ 50	≥ 10

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.

——Electricity separation time: not more than 0.1s

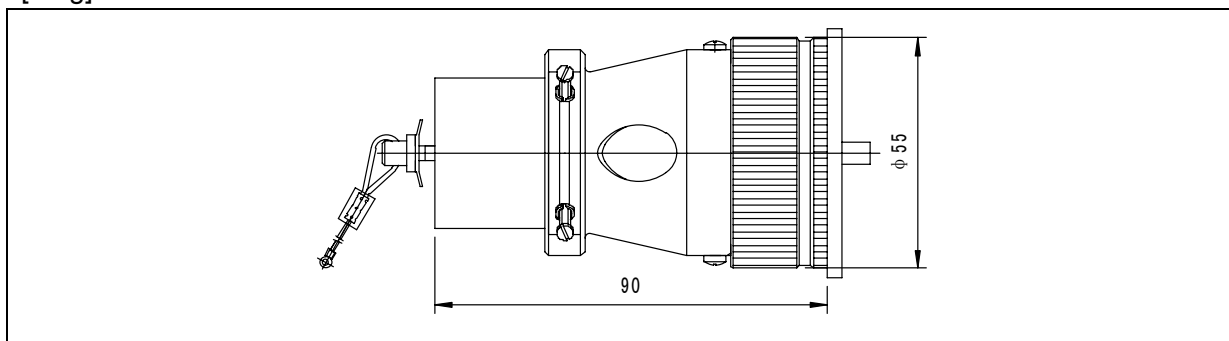
Ordering P/N

FD6A-43TK: breakaway connector, digital hybrid, contact couplers 43 pairs, plug with sockets.

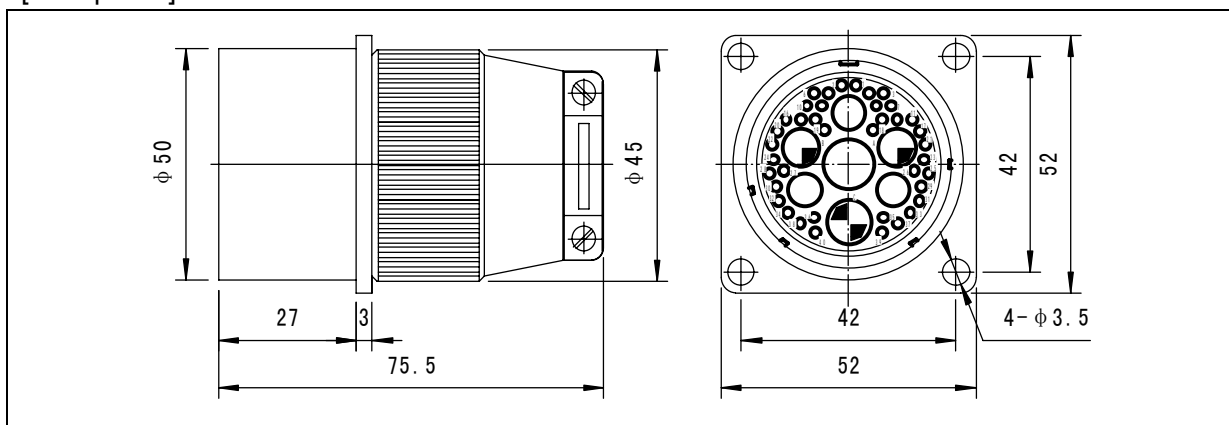
FD6A-43ZJ: breakaway connector, digital hybrid, contact couplers 43 pairs, receptacle with pins.

Outline dimensions

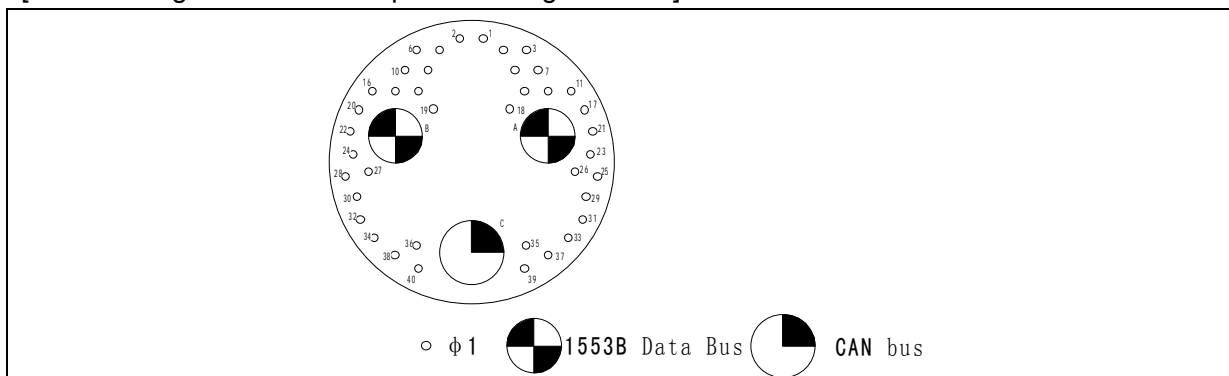
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Contact size	Contact No.	Socket type
$\phi 1$	40	Hyperboloid socket
1553B data bus	2	Bus
CAN bus	1	Bus

Plug and receptacle coupling method: straight and revolving types.

FD6A-45 Breakaway Connectors

Product brief introduction

- Compliant with: Q/21EJ1119
- Plug with electromagnetic separation mechanism and machnical pole pulling separation mechanism
- Receptacle with anti 850°C flame burning function
- Plug and receptacle with anti raindrop function after mating
- data bus and low frequency contact couplers hybrid
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -40°C~125°C

[Mechanical performances]

——Sine vibration: 196m/s²

——Random vibration: max power spectrum density 0.6G²/Hz

——Shock: 1200m/s²

——Acceleration: 490m/s²

——High altitude: 1x10⁻³Pa

——Flame retardant: receptacle interface can withstand 850°C for 90s for each contact. Insulation resistance not less than 20MΩ

——Endurance: 1000 cycles

[Electrical performances]

——Contact resistance and Rated current: Φ1-5A-10mΩ

——Withstanding voltage

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	250
High altitude	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC rms)

——Insulation resistance

Operation environment	Normal temp. (MΩ)	Elevated temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥1000	≥500	≥20
Between magnetic parts and shell	≥100	≥50	≥10

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.

——Electricity separation time: not more than 0.1s

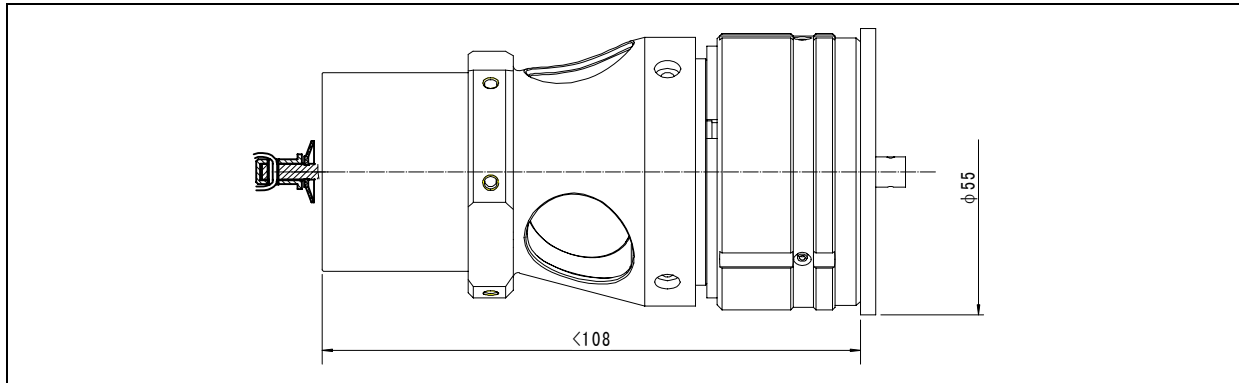
Ordering P/N

FD6A-45TJ: breakaway connector, digital hybrid, contact couplers 45 pairs, plug with pins.

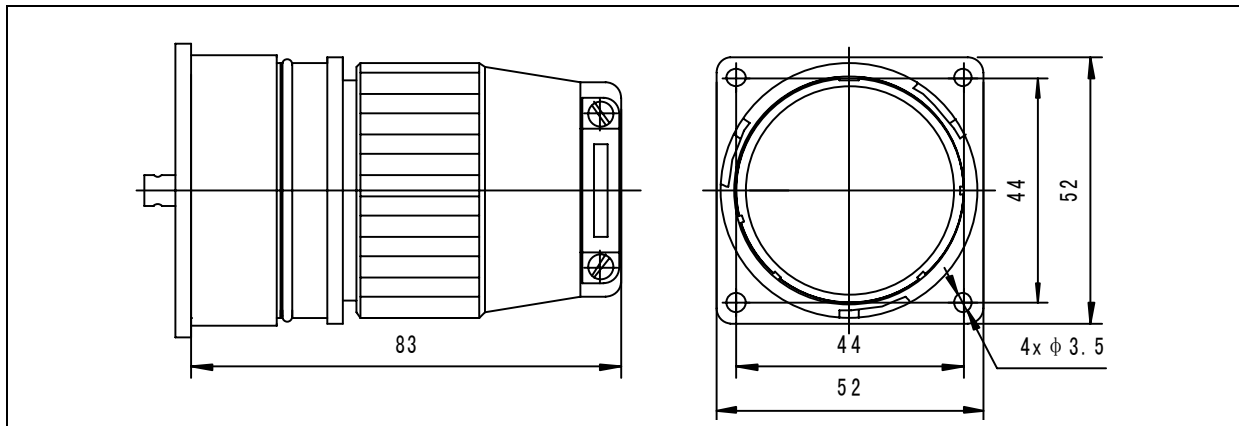
FD6A-45ZK: breakaway connector, digital hybrid, contact couplers 45 pairs, receptacle with sockets.

Outline dimensions

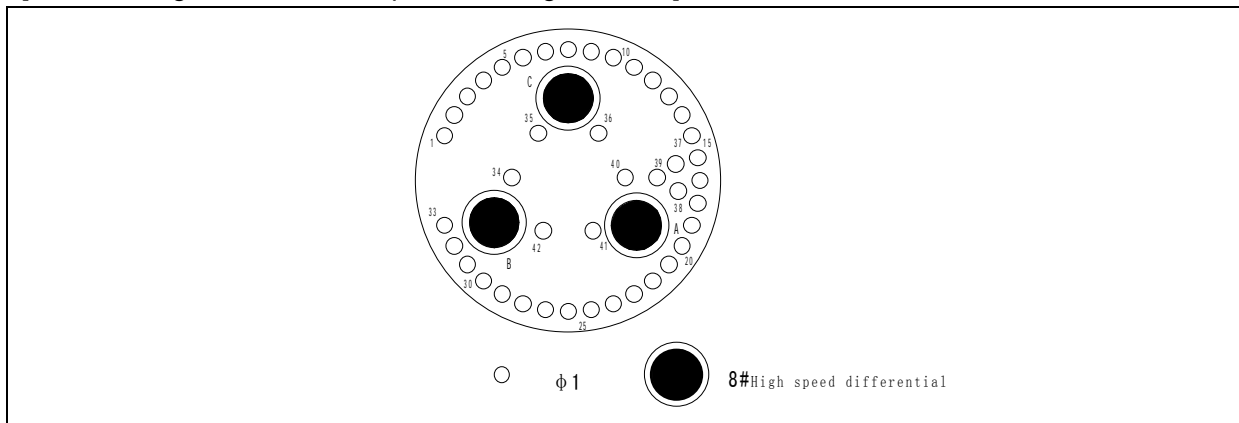
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Contact size	Contact No.	Socket type
$\phi 1$	42	Hyperboloid socket
8# high speed differential	3	Bus

Plug and receptacle coupling method: straight and revolving types

FD6A-46 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ275
- Plug with electromagnetic separation mechanism and machnical pole pulling separation mechanism
- Receptacle with anti 850°C flame burning function
- 1553B data bus and low frequency contacts hybrid
- Connection with wires: 1553B data bus by crimping and others by soldering
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55°C~125°C

[Mechanical performances]

——Random vibration: $0.3G^2/Hz$, acceleration rms 20G

——Sinusoidal vibration: acceleration $150m/s^2$

——Shock: peak acceleration $735m/s^2$

——Acceleration: $250m/s^2$

——Endurance: 500 cycles

——breakaway applicability: applicable for 8m/s and $1500m/s^2$ acceleration pulling environment;

[Electrical performances]

——Contact resistance and Rated current for each contact coupler pair: $\Phi 1-5A-10m\Omega$

——Withstanding voltage

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	500
High altitude (1KPa)	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC rms)

——Insulation resistance

Operation environment	Normal temp. (M Ω)	Elevated temp. (M Ω)	After damp heat test (M Ω)
Between contacts and between contact and shell	≥ 1000	≥ 500	≥ 20
Between magnetic parts and shell	≥ 100	≥ 50	≥ 10

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at both ends of the electromagnetic part is in the table below.

——Electricity separation time: not more than 0.1s

[Product features of each P/N]

P/N	Mechanical separation force	Separation voltage	Product features
FD6A-46TJ	28N~88N	23V~31V, duration not more than 5s	With two types of separation: electromagnetic and mechanical ways
FD6A-46TJ-03	28N~88N	23V~31V, duration not more than 5s	With two types of separation: electromagnetic and mechanical ways and applicable for various steel wire rope configuration which is the difference with FD6A-46TJ
FD6A-46TJ-05	60N~100N	—	Compared with FD6A-46TJ, only with mechanical separation and applicable for 8m/s and 1500m/s ² pulling force.
FD6A-46TJ-06	40N~88N	25V~31V, duration not more than 3s	With two types of separation: electromagnetic and mechanical ways and different separation force

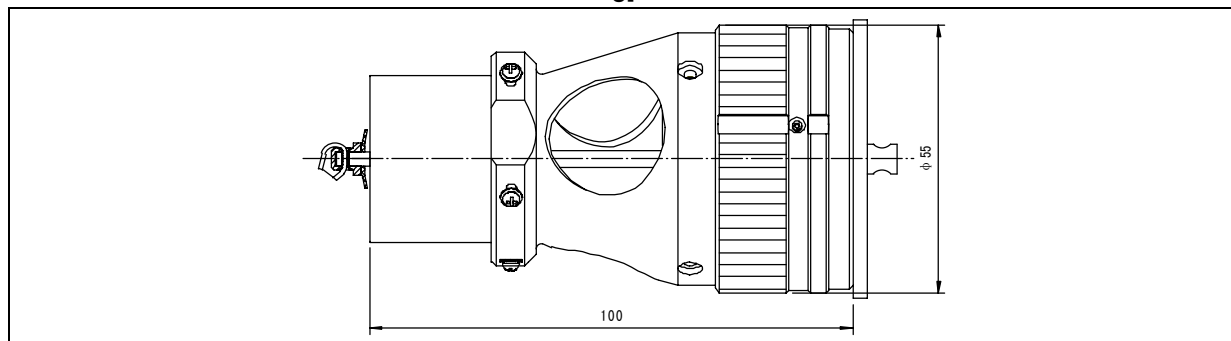
Ordering P/N

FD6A-46TJ: breakaway connector, digital hybrid, contact couplers 46 pairs, plug with pins.

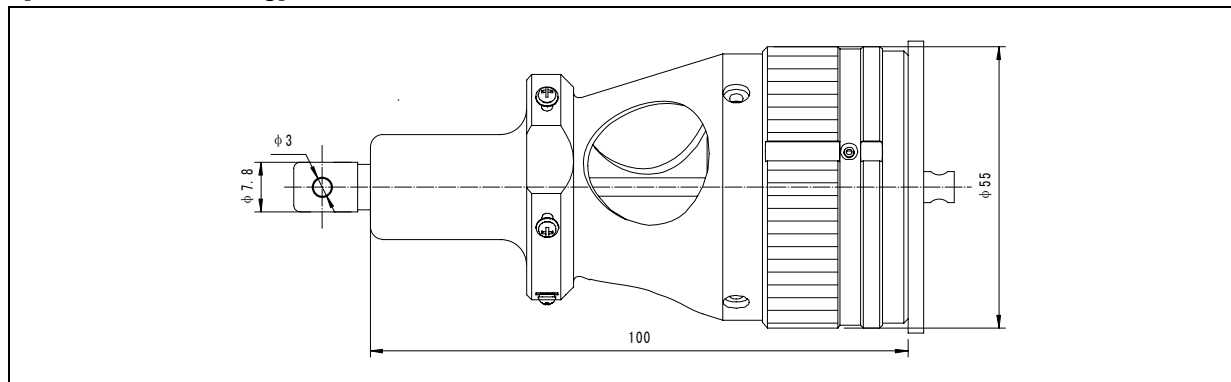
FD6A-46ZK: breakaway connector, digital hybrid, contact couplers 46 pairs, receptacle with sockets.

Outline dimensions

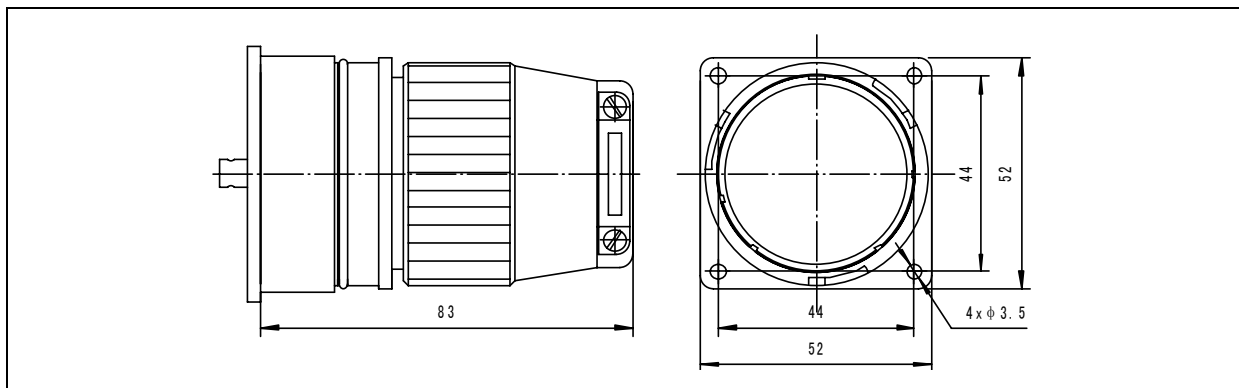
FD6A-46TJ, FD6A-46TJ-03, FD6A-46TJ-06 Plug]



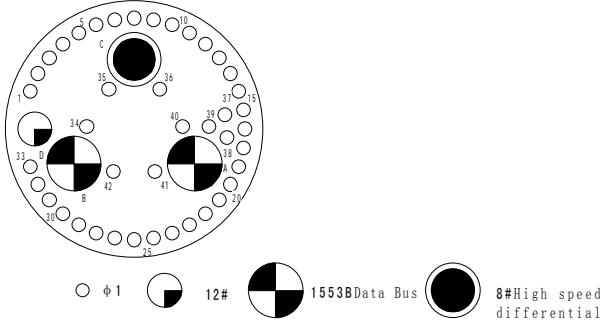
[FD6A-46TJ-05 Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]

		
Contact size	Contact No.	Socket type
φ1	42	Hyperboloid socket
12#	1	Coaxial socket
1553B data bus	2	Bus
8# high speed differential	1	Bus

Plug and receptacle coupling method: straight and revolving types

FD6-51 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ275
- Plug with electromagnetic separation mechanism and machnical pole pulling separation mechanism
- Receptacle with anti 850°C flame burning function
- contact couplers are all low frequency contact couplers
- All soldered with wires
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55°C~125°C

[Mechanical performances]

——Random vibration: $0.3G^2/Hz$, acceleration rms 20G

——Sinusoidal vibration: acceleration $150m/s^2$

——Shock: peak acceleration $735m/s^2$

——Acceleration: $250m/s^2$

——Endurance: 500 cycles

——Mechanical separation force: 28N~88N

[Electrical performances]

——Contact resistance and Rated current for each contact coupler pair: $\Phi 1-5A-10m\Omega$

——Withstanding voltage:

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	500
High altitude (1KPa)	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC rms)

——Insulation resistance:

Operation environment	Normal temp. (M Ω)	Elevated temp. (M Ω)	After damp heat test (M Ω)
Between contacts and between contact and shell	≥ 1000	≥ 500	≥ 20
Between magnetic parts and shell	≥ 100	≥ 50	≥ 10

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.

——Electricity separation time: not more than 0.1s

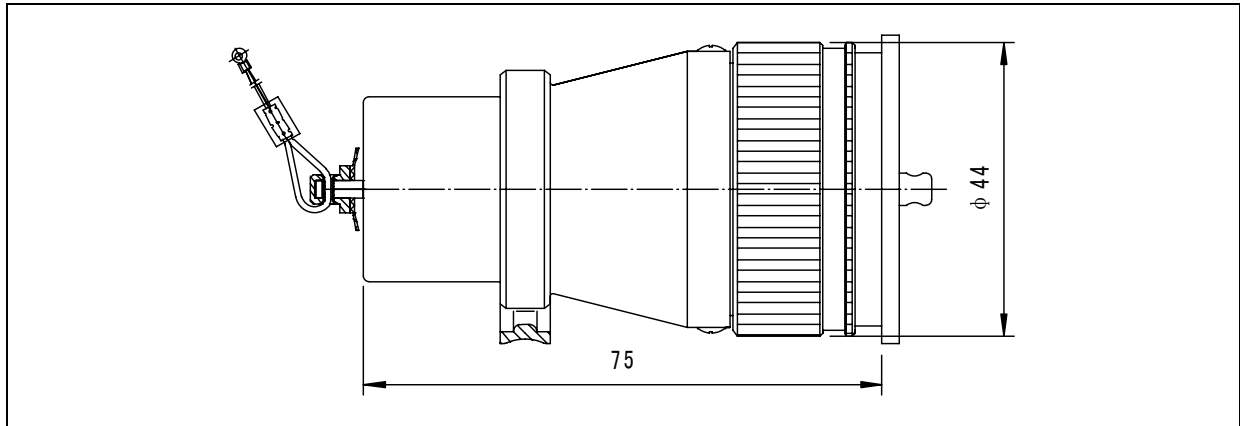
Ordering P/N

FD6-51TJ: breakaway connector, contact couplers 51 pairs, plug with pins.

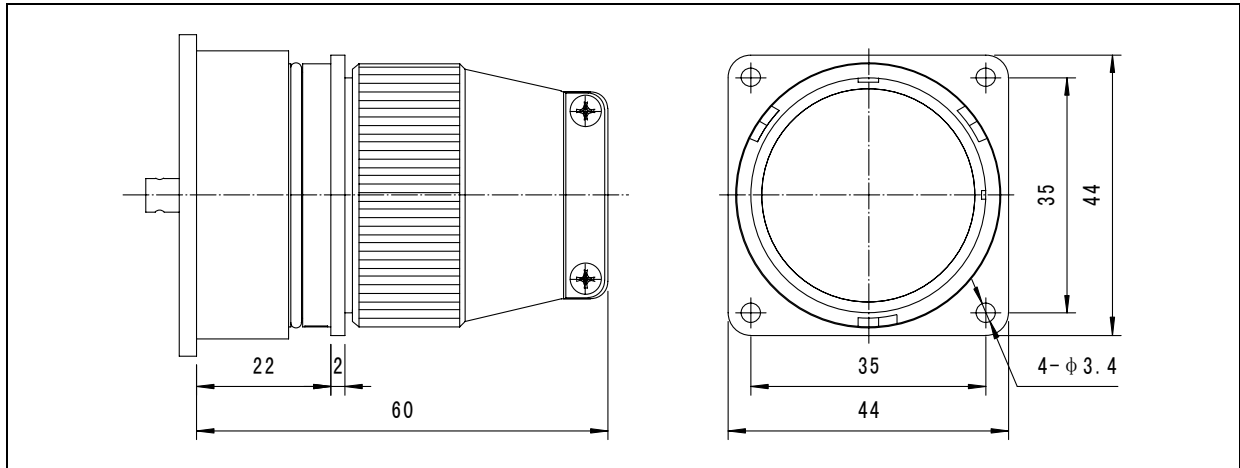
FD6-51ZK: breakaway connector, contact couplers 51 pairs, receptacle with sockets.

Outline dimensions

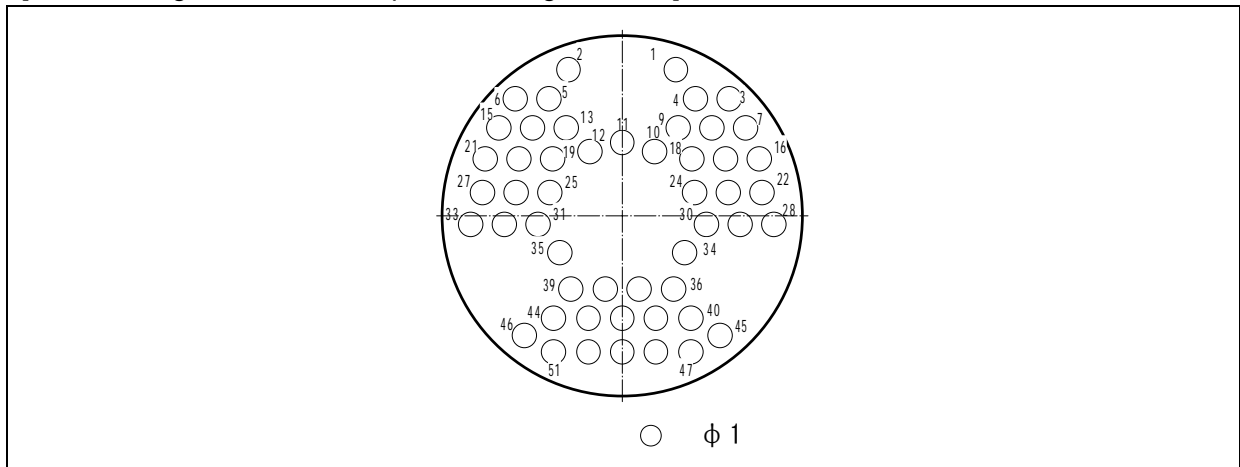
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Contact size	Contact No.	Socket type
φ1	51	Hyperboloid socket

Plug and receptacle coupling method: straight and revolving types

FD6-56 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ1099
- Plug with mechanical pole pulling separation mechanism
- Plug and receptacle with anti raindrop function after mating
- Plug and receptacle connect wires by crimping
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

- operation temperature: -55℃~125℃
- High altitude: 11.6kPa (15250m)

[Mechanical performances]

- Vibration: 0.4G²/Hz
- Shock: 40g
- Acceleration: max. 22.5g
- Durability: 500 cycles
- Mechanical separation force: 28N~50N

[Electrical performances]

- Contact resistance and rated current: 22# -3A≤12.5mΩ, 20# -5A≤5mΩ, 16# -10A≤2.5 mΩ
- Withstanding voltage:

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	500
High altitude	150

——Insulation resistance:

Operation environment	Normal temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥1000	≥20

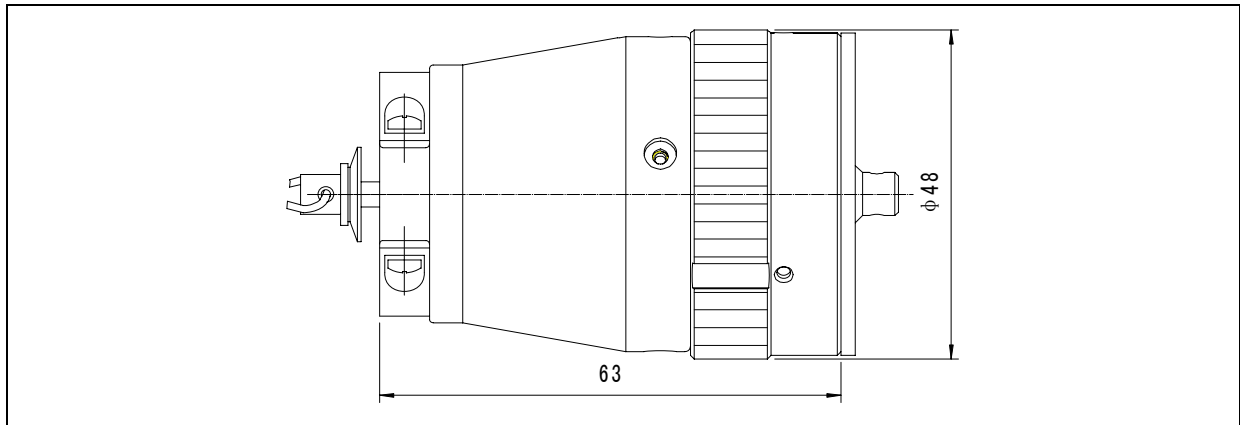
Ordering P/N

FD6-56TJY: breakaway connector, contact couplers 56 pairs, plug with pins, crimp.

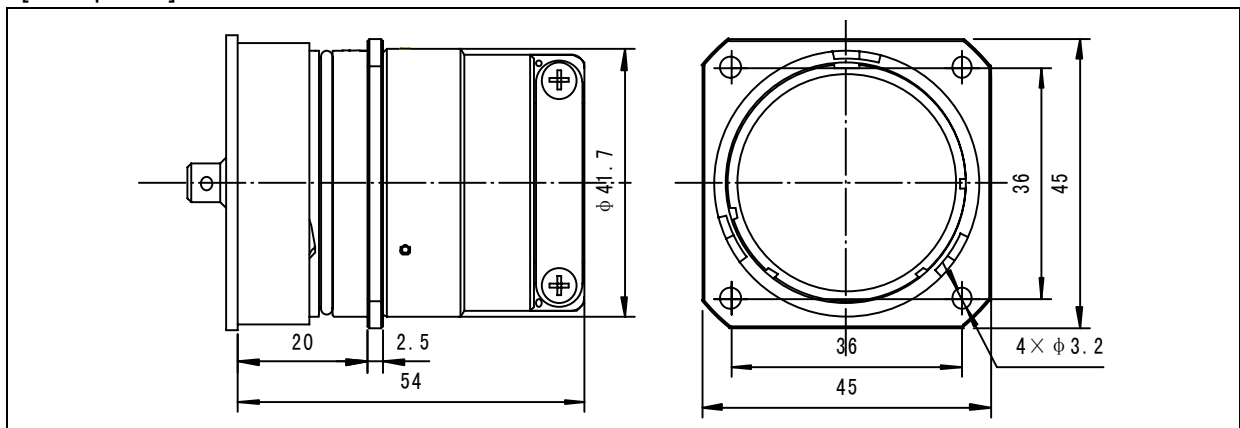
FD6-56ZKY: breakaway connector, contact couplers 56 pairs, receptacle with sockets, crimp.

Outline dimensions

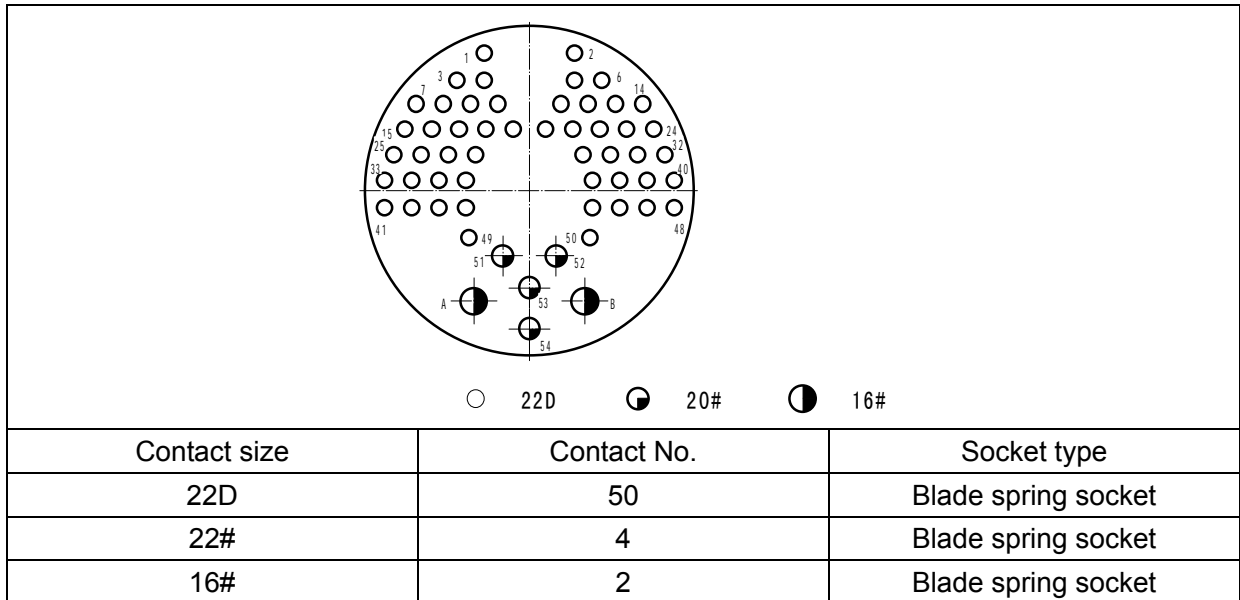
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Plug and receptacle coupling method: straight and revolving types

FD6-57 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ275
- Plug with mechanical pole pulling separation mechanism and electromagnetic separation mechanism
- Plug and Receptacle connect wires by soldering
- Plug and receptacle have 4 polarization key: (N/X/Y/Z)
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55℃~125℃

[Mechanical performances]

——Vibration: 0.3G²/Hz;

——Shock: acceleration 735m/s²;

——Acceleration: 250m/s²

——Endurance: 500 cycles

——Mechanical separation force: see the table below

[Electrical performances]

——rated current and contact resistance: 57-5A-10mΩ

——Withstanding voltage

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	500
High altitude (1KPa)	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC rms)

——Insulation resistance

Operation environment	Normal temp. (MΩ)	Elevated temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥1000	≥500	≥20
Between magnetic parts and shell	≥100	≥50	≥10

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.

——Electricity separation time: not more than 0.1s

[Product features of each P/N]

P/N	Mechanical separation force	Product features
FD6W-57TJ	28N~88N	Paint peacock blue on plug surface and without changing polarization function

FD6W-57TJ-01	28N~88N	Electroless nickel plating on plug surface and with changing polarization function
FD6W-57TJ-02	60N~100N	Compared with FD6W-57TJ, only with mechanical separation and applicable for 8m/s and 1500m/s ² pulling force, with changing polarization function
FD6-57ZK	—	Paint peacock blue on receptacle surface and without changing polarization function
FD6W-57ZK	—	Electroless nickel plating on receptacle surface and without changing polarization function
FD6-57ZY	—	Electroless nickel plating on receptacle surface and without changing polarization function. contact couplers are crimped and can work under 350℃ for 30min.
FD6-57ZK-01	—	Electroless nickel plating on receptacle surface and with changing polarization function
FD6-57ZK-02	—	Electroless nickel plating on receptacle surface and with anti raindrop function after mating with protective cap

Note: any plug part numbers above can mate with any receptacle part numbers.

Ordering P/N

FD6-57ZK-01: breakaway connector, with changing polarization, with electrical and mechanical separation functions, contact couplers 57 pairs, receptacle with sockets, electroless nickel plating on shell surface, polarization N (omitted).

Additionally, if polarization is changed to X, contact is crimped, receptacle P/N is: FD6-57ZK (X)-01

FD6W-57TJ-01: breakaway connector, with changing polarization, with electrical and mechanical separation functions, contact couplers 57 pairs, plug with pins, electroless nickel plating on shell surface, polarization N (omitted).

Additionally, if polarization is changed to X, contact is crimped, plug P/N is: AH6W-57TJ (X) -01

FD6W-57TJ: breakaway connector, with electrical and mechanical separation functions, contact couplers 57 pairs, plug with pins, paint on shell surface, contact is crimped.

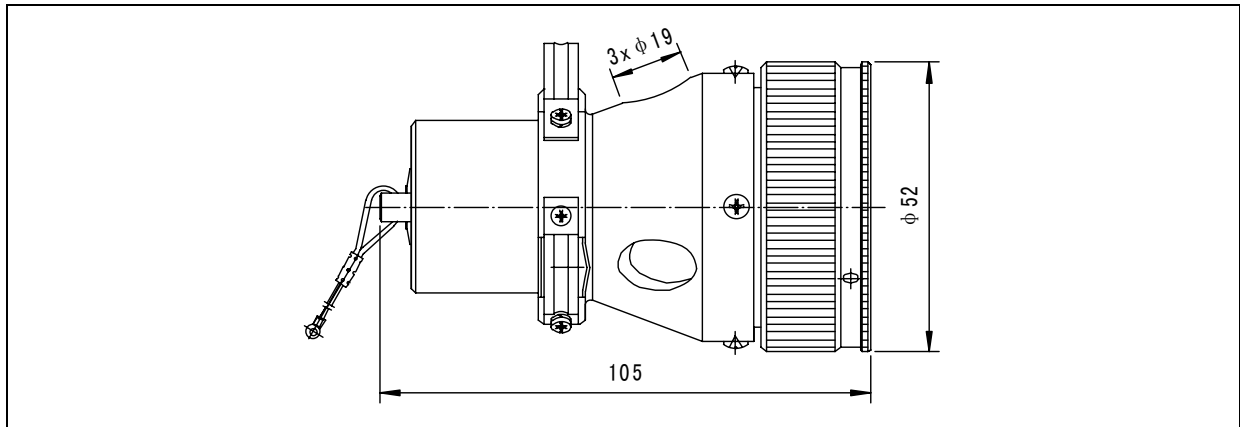
FD6-57ZK: breakaway connector, with electrical and mechanical separation functions, contact couplers 57 pairs, receptacle with sockets, paint on shell surface, contact is crimped.

FD6W-57ZK: breakaway connector, without changing polarization, with electrical and mechanical separation functions, contact couplers 57 pairs, receptacle with sockets, electroless nickel plating on shell surface, contact is crimped.

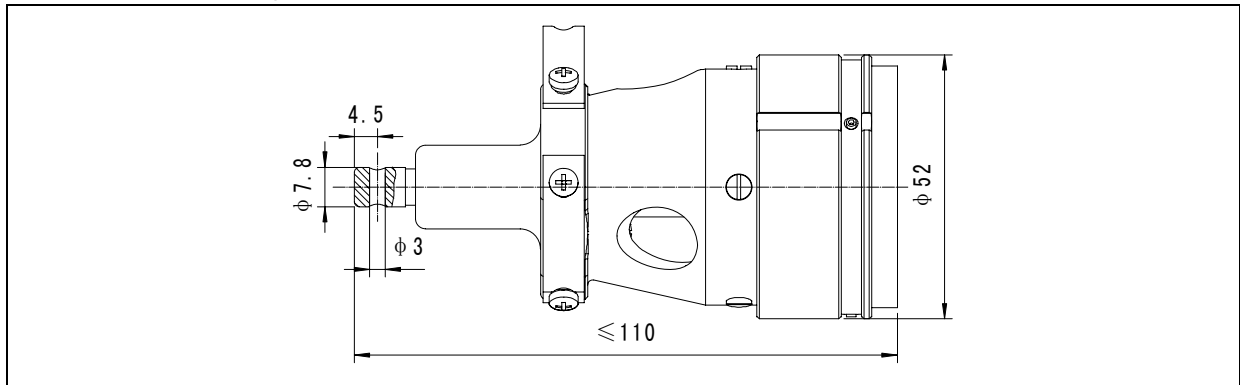
FD6-57ZY: breakaway connector, without changing polarization, with electrical and mechanical separation functions, contact couplers 57 pairs, receptacle with sockets, electroless nickel plating on shell surface, contact is crimped.

Outline dimensions

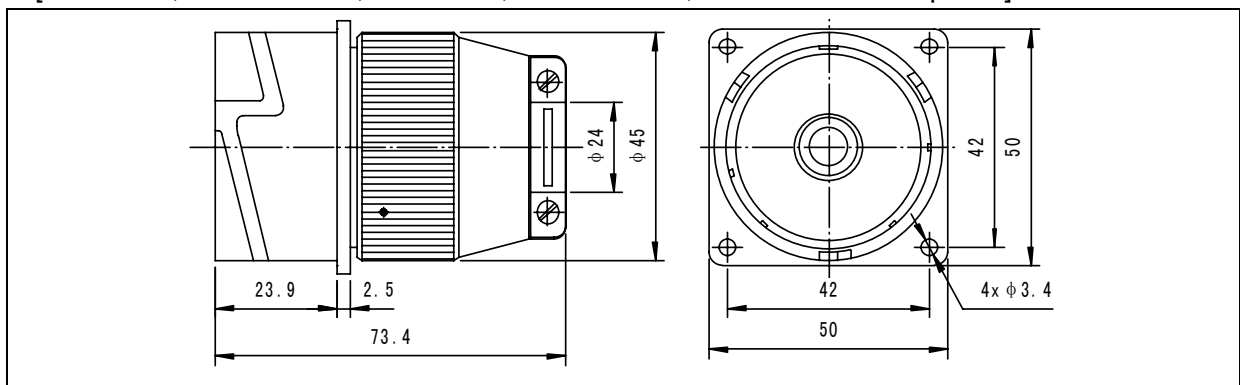
[FD6W-57TJ, FD6W-57TJ (X, Y, Z) -01 Plug]



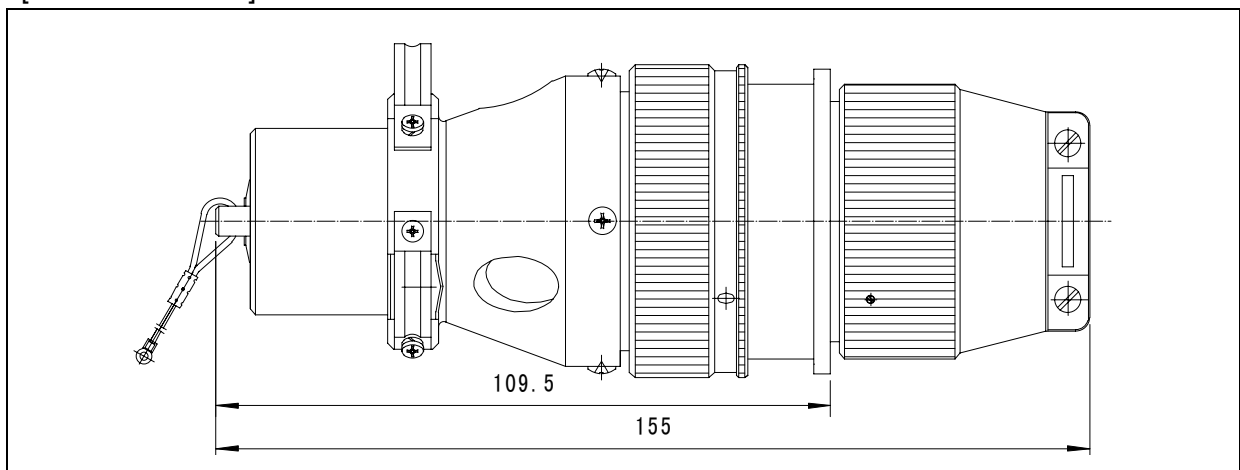
[FD6W-57TJ-02 Plug]



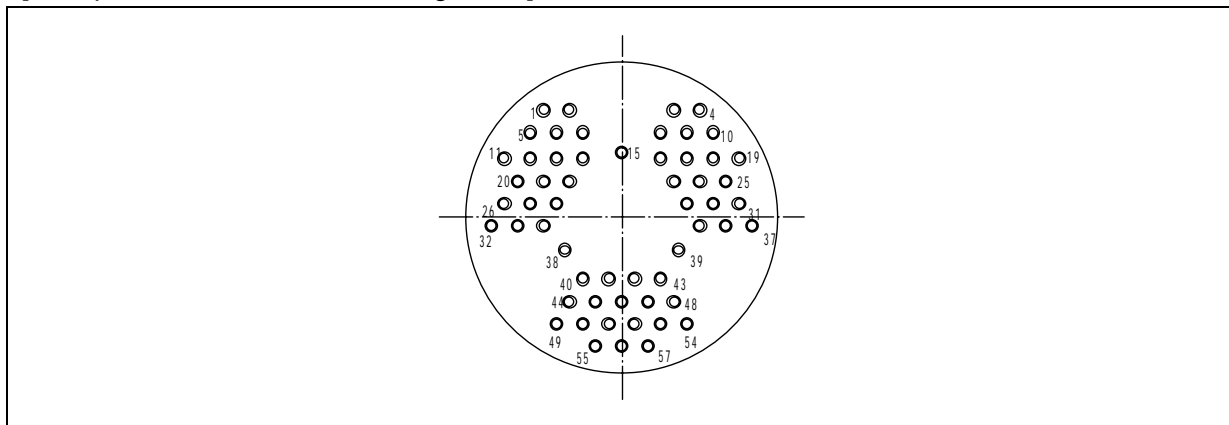
[FD6-57ZK, FD6-57ZK-01, FD6-57ZY, FD6-57ZK-02, FD6W-57ZK Receptacle]



[Connector outline]



[Receptacle interface insert arrangement]



The connector consists of 57 $\phi 1$ contact couplers.

FD6-61 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ1436
- Plug with mechanical pole pulling separation mechanism and electromagnetic separation mechanism
- Receptacle weight is only 40g
- Contacts with one air path, and passed by 30MPa pressure
- Connect with wires by: high frequency crimped and low frequency soldered
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

—operation temperature: $-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$

—air path: 40MPa

[Mechanical performances]

—Vibration: 10-2000Hz, $0.1\text{G}^2/\text{Hz}$;

—Shock: 35g

—Acceleration: 50g

—Endurance: 500 cycles

[Electrical performances]

—rated current and contact resistance: 5A, 16; 3A, 45; Contact resistance: not more than $15\text{m}\Omega$;

—Withstanding voltage:

Operation environment	Test voltage (50Hz AC rms) V	Test duration min
Normal temperature	500	1min
Damp heat condition	200	
High altitude (1kPa)	150	

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC rms)

—Insulation resistance: normal $\geq 1500\text{M}\Omega$; Elevated temperature, not less than $500\text{M}\Omega$; Damp

heat \geq 100M Ω ; Between magnetic parts and shell \geq 100M Ω ;

—Separation current: current pulse not less than 200ms;

—Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.;

—Electricity separation time: not more than 0.1s

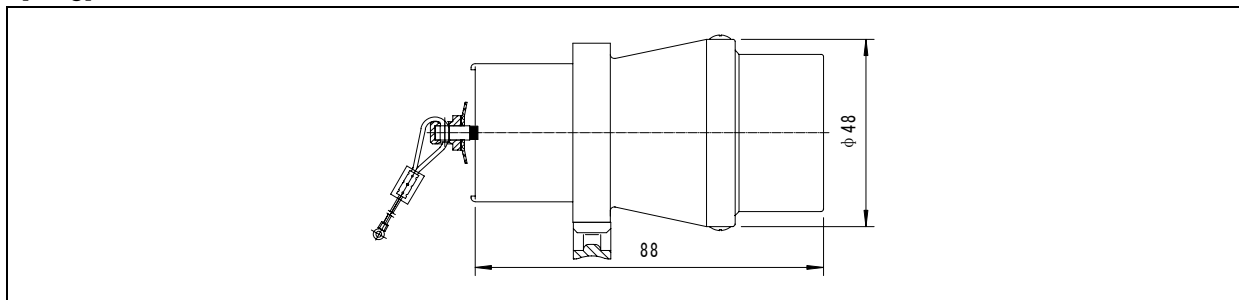
Ordering P/N

FD6-61ZK: breakaway connector, contact couplers 60 pairs, 1 pairs of air path, receptacle with sockets.

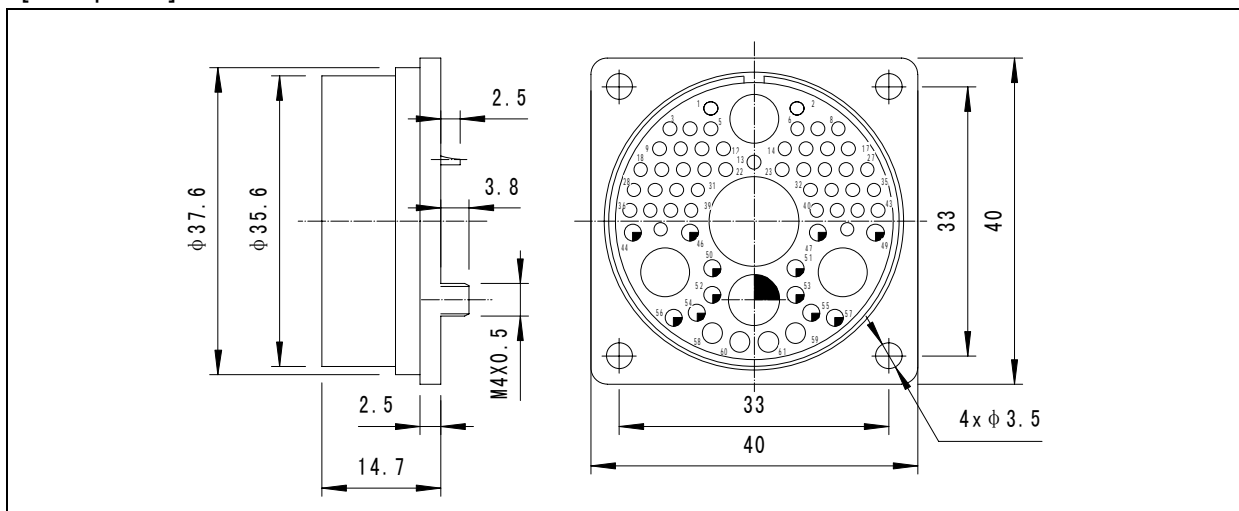
FD6-61TJ: breakaway connector, contact couplers 60 pairs, 1 pairs of air path, plug with pins.

Outline dimensions

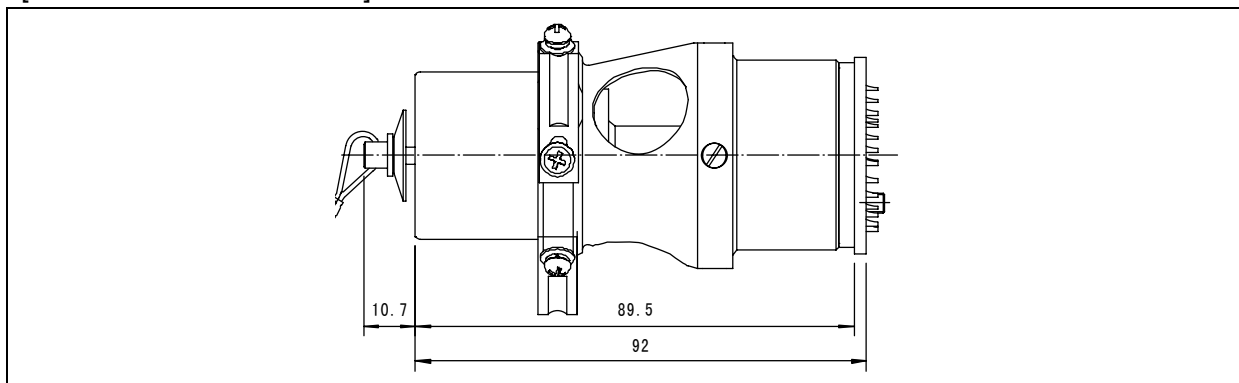
[Plug]



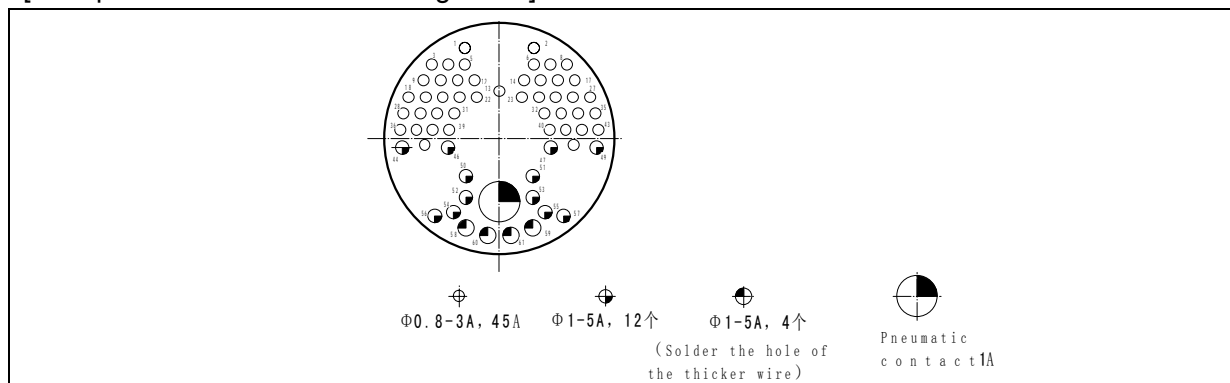
[Receptacle]



[Electrical connector outline]



[Receptacle interface insert arrangement]



FD6A-61-01/02/03 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ1436
- Plug with electromagnetic separation mechanism and mechanical pole pulling separation mechanism
- High and low frequencies hybrid
- High frequency is crimped and low frequency is soldered.
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

- operation temperature: -55℃~125℃
- High altitude: not higher than 10Pa

[Mechanical performances]

- Endurance: 500 cycles
- Random vibration 10~2000Hz, 0.1G²/Hz; 10min for each direction, 2 directions
- Shock: 100g, 6~8ms, once for 6 directions
- Acceleration : 25g, duration: 2 min, 6 directions
- Mechanical separation force: 28N~88N

[Electrical performances]

- Rated current: 5A, 16; 3A, 45; one more high frequency contact, mate with SFF-50-2-2 RF cable
- Contact resistance: all not more than 15mΩ
- Insulation resistance: under standard atmosphere not less than 1500MΩ; under elevated temperature not less than 500MΩ; Damp heat, not less than 100MΩ; Between magnetic parts and shell ≥100MΩ;
- Withstanding voltage: under standard atmosphere 500V(50Hz, AC)
- Separation current: current pulse not less than 200ms;
- Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.
- Electricity separation time: not more than 0.1s

[Product features of each P/N]

P/N	Product features
FD6A-61TJ-01	Plug with free end wires
FD6A-61TJ-02	Based on FD6A-61TJ-01, mount TNC-J4 high frequency plug at free end wires
FD6A-61ZK-01	Receptacle with free end wires
FD6A-61ZK-02	Based on FD6A-61ZK-01, add backshell (FD6A-61FJ)
FD6A-61ZK-03	Based on FD6A-61ZK-02, mount SMA-JWC3 high frequency plug at free end wires
FD6A-61FJ	Receptacle backshell

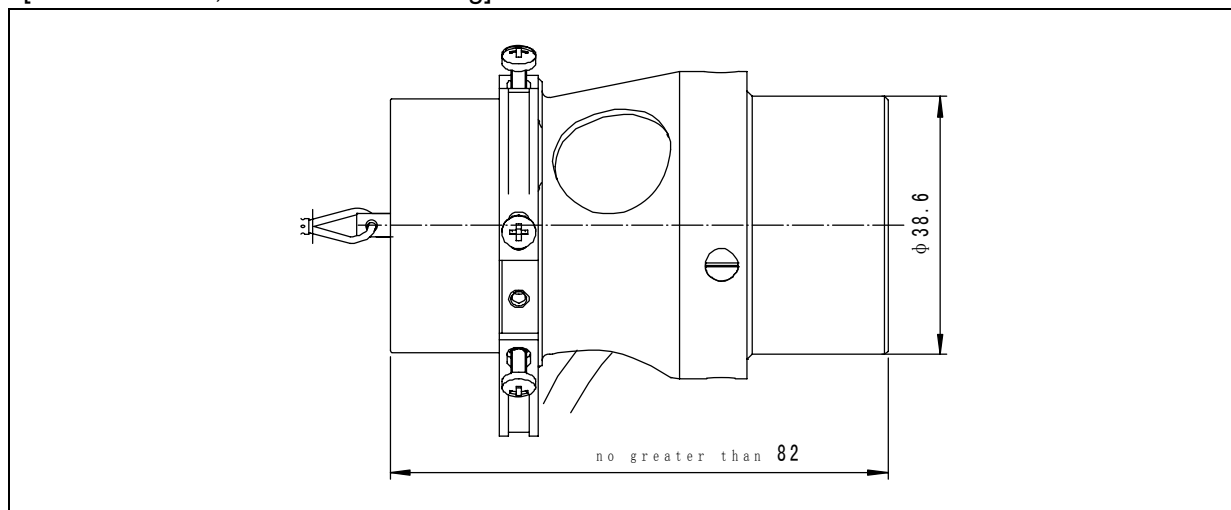
Ordering P/N

FD6A-61TJ-01: breakaway connector, contact couplers 61 pairs, plug with pins.

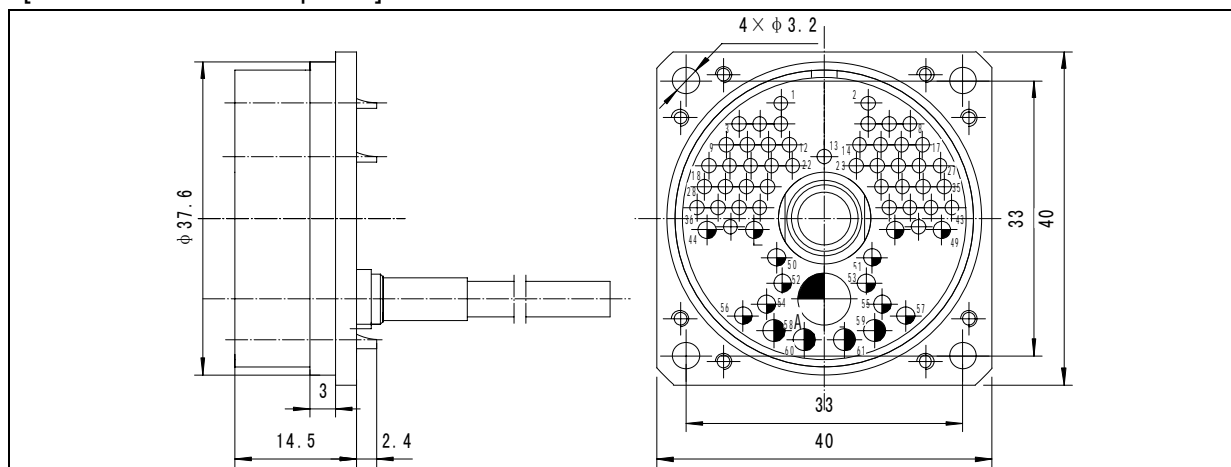
FD6A-61ZK-01: breakaway connector, contact couplers 61 pairs, receptacle with sockets.

Outline dimensions

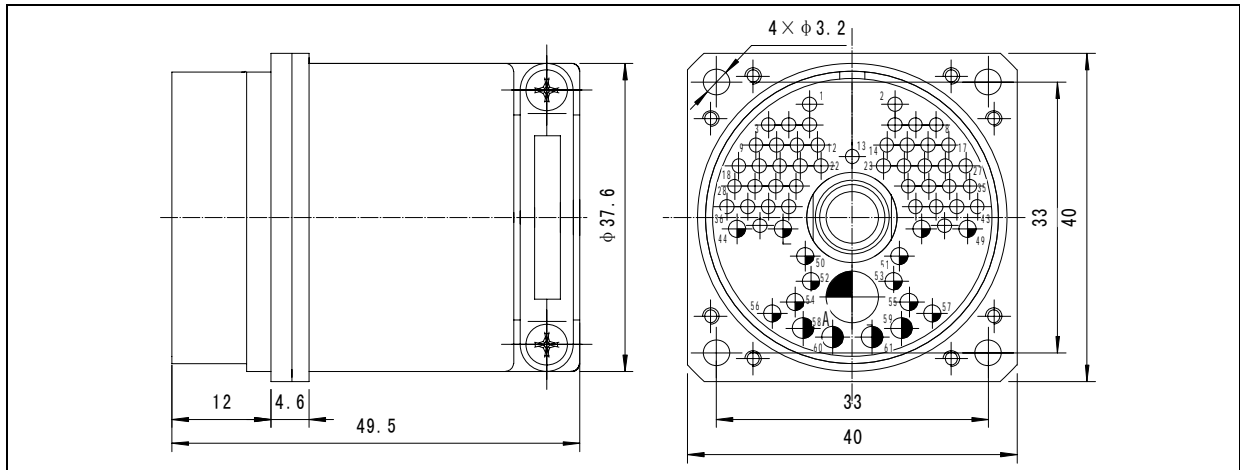
[FD6A-61TJ-01, FD6A-61TJ-02 Plug]



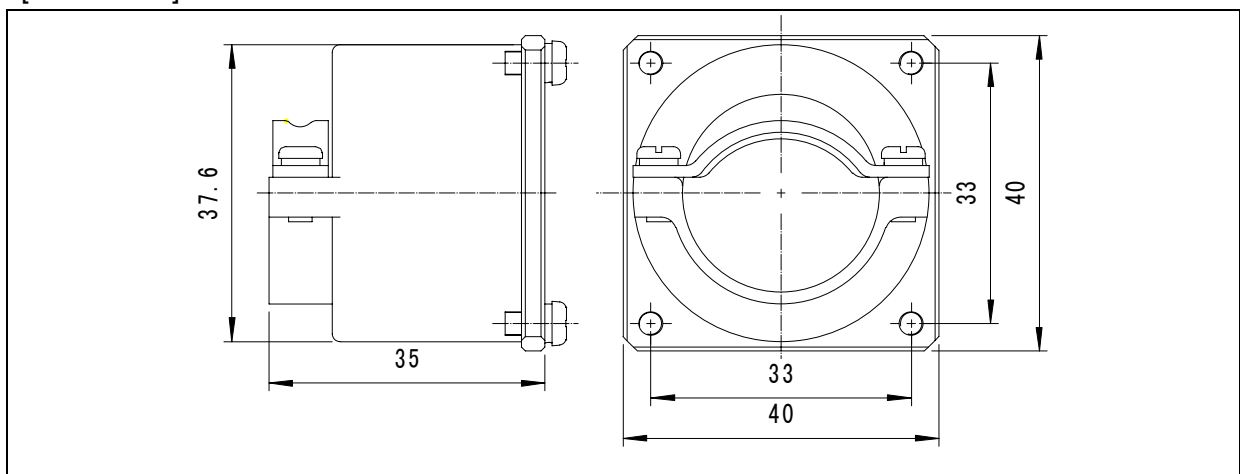
[FD6A-61ZK-01 Receptacle]



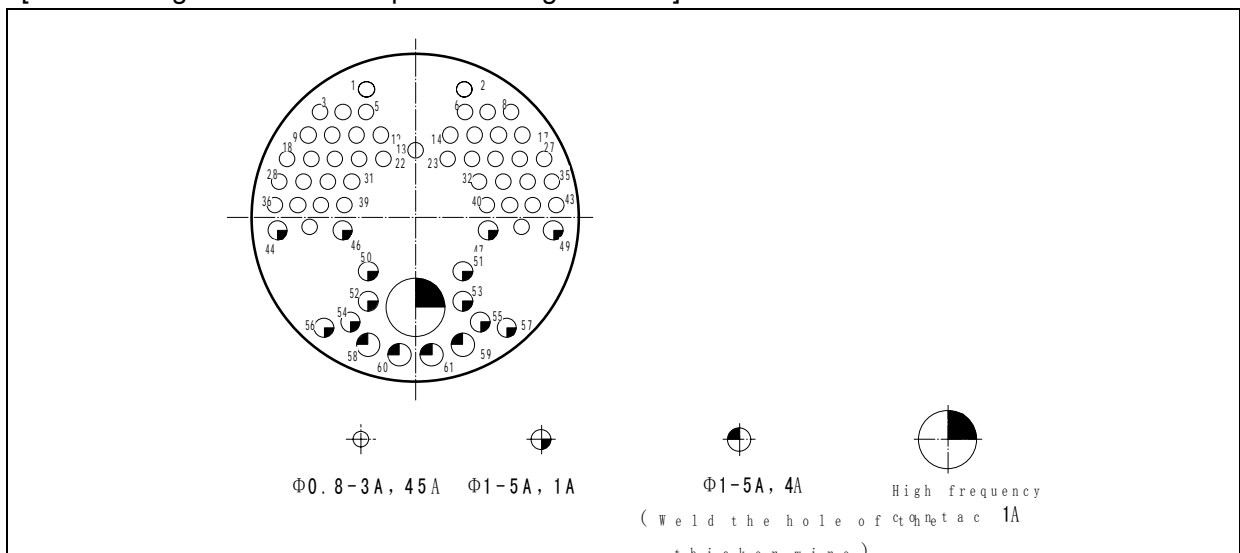
[FD6A-61ZK-02, FD6A-61ZK-03 Receptacle]



[FD6A-61FJ]



[Insert arrangement from receptacle mating interface]



FD8-64 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ1438
- Plug with electromagnetic separation mechanism, mechanical pole pulling separation mechanism and hand wheel locking device
- Fire proof function
- Plug and receptacle with anti raindrop function after mating
- Wires are soldered
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: $-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$

[Mechanical performances]

——Random vibration: $0.3\text{G}^2/\text{Hz}$, acceleration rms 20G

——Sinusoidal vibration: acceleration 196m/s^2

——Shock: peak acceleration 735m/s^2

——Acceleration: 490m/s^2

——Endurance: 500 cycles

[Electrical performances]

——Rated current and contact resistance:

Contact size (mm)	Rated current (A)	Contact No.	Contact resistance (mΩ)
Φ1	5	38	5
Φ1.5	10	16	5
Φ2.5	25	10	2

——Withstanding voltage

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1500
Thermal cycling: Elevated and low temperatures, Damp heat	500
High altitude (1KPa)	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC rms)

——Insulation resistance

Operation environment	Normal temp. (MΩ)	Elevated temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥ 1500	≥ 500	≥ 20
Between magnetic parts and shell	≥ 100	≥ 50	≥ 10

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous

electrifying duration shall not be more than 5s.;

—Electricity separation time: not more than 0.1s

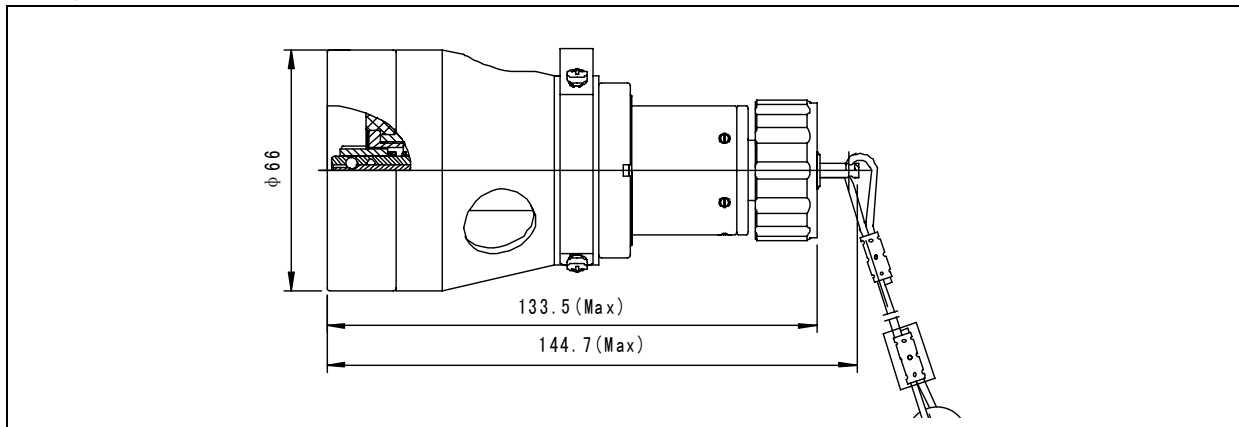
Ordering P/N

FD8-64TD: breakaway connector, contact couplers 64 pairs, plug with pins.

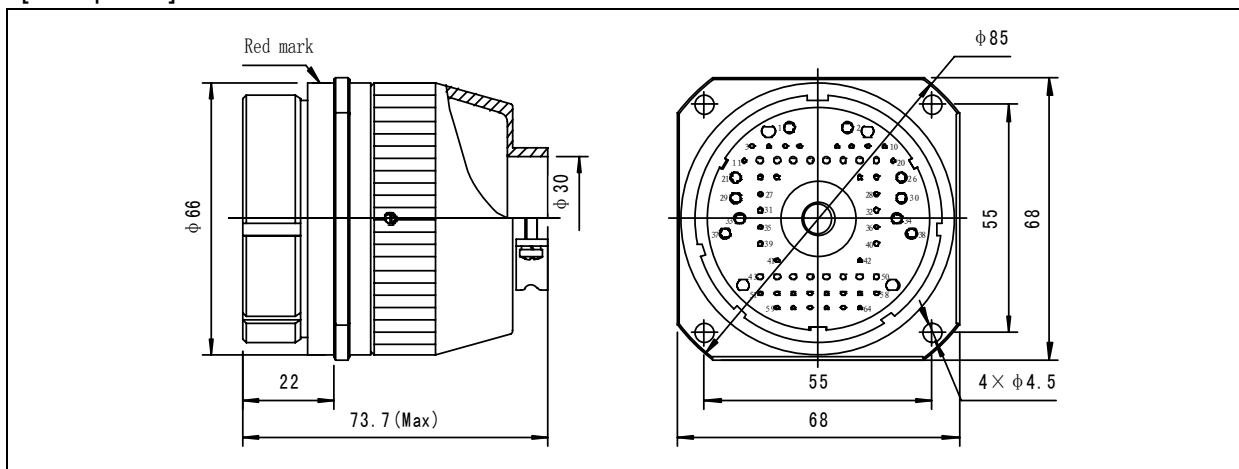
FD8-64Z: breakaway connector, contact couplers 64 pairs, receptacle with sockets.

Outline dimensions

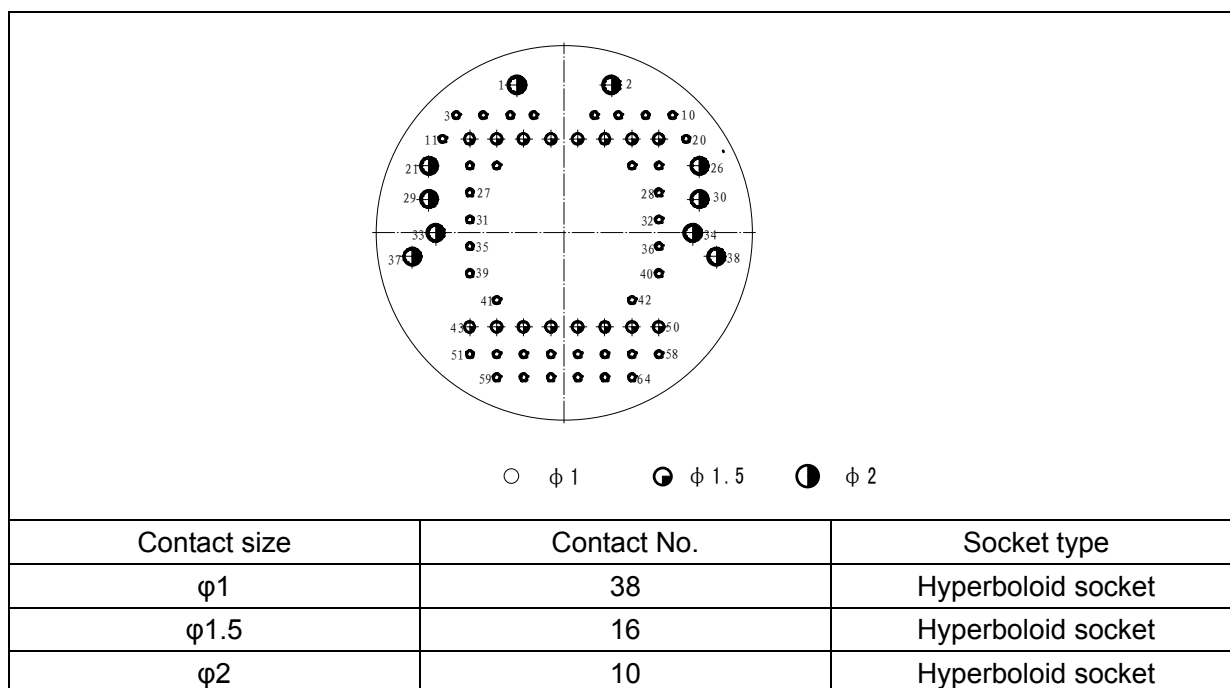
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Plug and receptacle coupling method: hand wheel coupling

FD6A-67 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ275
- Plug with electromagnetic separation mechanism and machnical pole pulling separation mechanism
- Receptacle with anti 850°C flame burning function
- 1553B data bus, CAN bus and low frequency contacts hybrid
- Connection with wires: 1553B data bus by crimping and others by soldering
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55°C~125°C

[Mechanical performances]

——Random vibration: 0.3G²/Hz, acceleration rms 20G

——Sinusoidal vibration: acceleration 150m/s²

——Shock: peak acceleration 735m/s²

——Acceleration: 250m/s²

——Endurance: 500 cycles

[Electrical performances]

——Contact resistance and rated current for each contact coupler pair: Φ1-5A-10mΩ

——Withstanding voltage

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	500
High altitude (1KPa)	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC rms)

—Insulation resistance:

Operation environment	Normal temp. (MΩ)	Elevated temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥1000	≥500	≥20
Between magnetic parts and shell	≥100	≥50	≥10

—Separation current: current pulse not less than 200ms;

—Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.

—Electricity separation time: not more than 0.1s

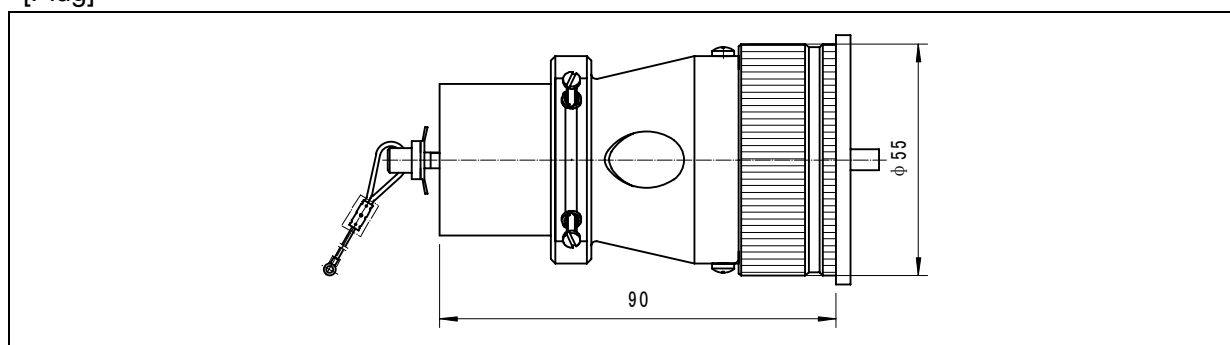
Ordering P/N

FD6A-67TK: breakaway connector, digital hybrid, contact couplers 67 pairs, plug with sockets.

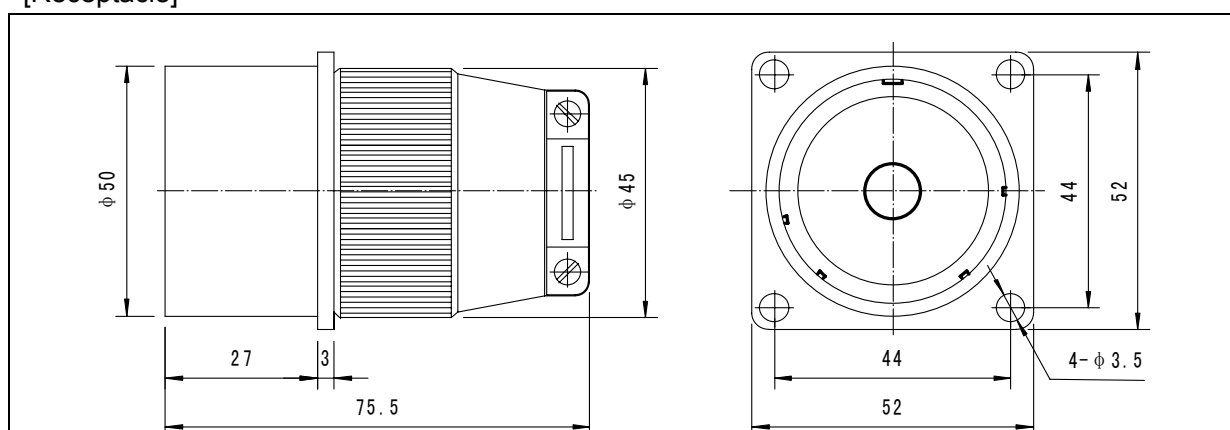
FD6A-67ZJ: breakaway connector, digital hybrid, contact couplers 67 pairs, receptacle with pins.

Outline dimensions

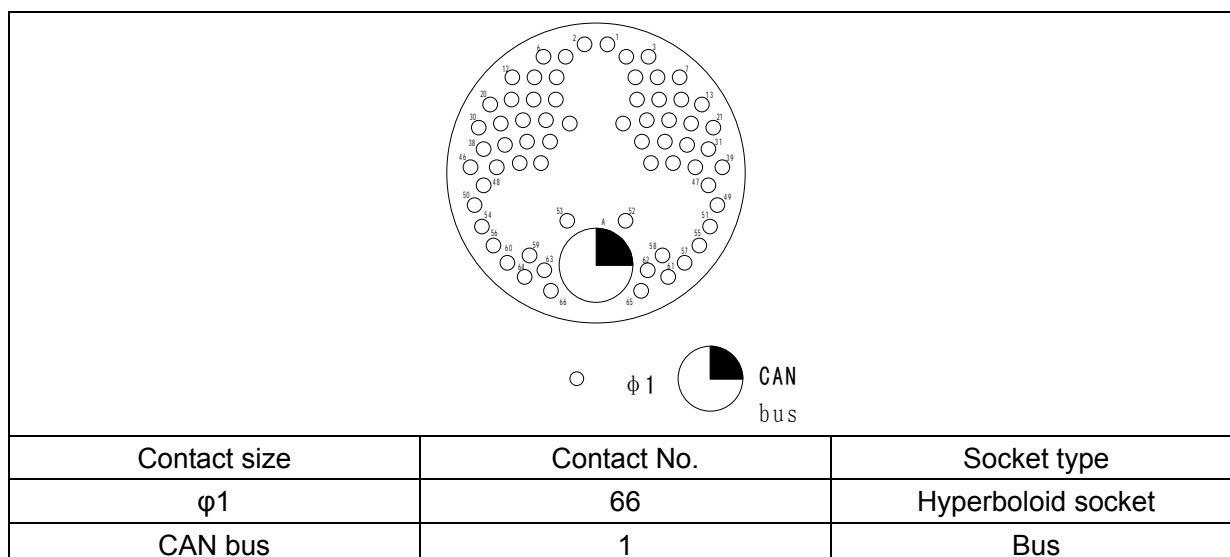
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Plug and receptacle coupling method: straight and revolving types

FD6W-78 Breakaway Connectors

Product brief introduction

- Compliant with: Q/21EJ275
- Plug with electromagnetic separation mechanism and machnical pole pulling separation mechanism
- Receptacle with anti 850°C flame burning function
- contact couplers are all low frequency contact couplers
- All soldered with wires
- Plug and receptacle have 5 polarization key: (N, W, X, Y, Z)
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55°C~125°C

[Mechanical performances]

——Random vibration: 0.3G²/Hz, acceleration rms 20G

——Sinusoidal vibration: acceleration 150m/s²

——Shock: peak acceleration 735m/s²

——Acceleration: 250m/s²

——Endurance: 500 cycles

[Electrical performances]

——Contact resistance and rated current for each contact coupler pair: Φ1-5A-10mΩ

——Withstanding voltage:

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	500
High altitude (1KPa)	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC

rms)

——Insulation resistance:

Operation environment	Normal temp. (MΩ)	Elevated temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥1000	≥500	≥50
Between magnetic parts and shell	≥100	≥50	≥10

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at both ends of the electromagnetic part is in the table below.

——Electricity separation time: not more than 0.1s

Product features of each P/N

P/N	Mechanical separation force	Separation voltage	Product features
FD6W-78TJ	28N~88N	23V~31V, duration Not more than 5s	With electromagnetic and mechanical separation mechanism
FD6W-78TJ-02	55N~80N	23V~31V, duration Not more than 5s	With electromagnetic and mechanical separation mechanism , per Q/21EJ1119
FD6W-78TJ-03	28N~88N	23V~31V, duration Not more than 5s	With electromagnetic and mechanical separation mechanism and applicable for various steel wire rope configuration which is the difference with FD6W-78TJ
FD6W-78TJ-04	28N~88N	23V~31V, duration Not more than 5s	With electromagnetic and mechanical separation mechanism, and with metallic anti raindrop protection cap (FD6W-78FJ- B) which is the difference with FD6W-78TJ
FD6W-78TJ-05	60N~100N	——	Compared with FD6W-78TJ, only with mechanical separation and applicable for 8m/s and 1500m/s ² pulling force.
FD6W-78TJ-06	40N~88N	25V~31V, duration Not more than 3s	With electromagnetic and mechanical separation mechanism and plug unlocking force is increased
FD6W-78ZK	——	——	Receptaclewith changing polarization function
FD6W-78ZKY	——	——	Contact couplers are crimped and can operate in 350℃ for 30min
FD6W-78ZK-02	——	——	Receptaclewith changing polarization function; Per Q/21EJ1119
FD6W-78ZK-04	——	——	Receptaclewith changing polarization function; mate with FD6W-78FJ-C metallic

			anti raindrop protection cap.
FD6W-78ZKY-04	—	—	Contact couplers are crimped and can operate in 350℃ for 30min; mate with FD6W-78FJ-C metallic anti raindrop protection cap.

Note: in the part numbers above, FD6W-78TJ-02 can only mate with FD6W-78ZK-02; and other part numbers are interchangeable.

Ordering P/N

FD6W-78ZK: breakaway connector, with changing polarization, with electrical and mechanical separation functions, contact couplers 78 pairs, receptacle with sockets, electroless nickel plating on shell surface, contact is crimped, polarization N which can be omitted. Additionally, if polarization is changed to X, receptacle P/N is: FD6W-78ZK (X)

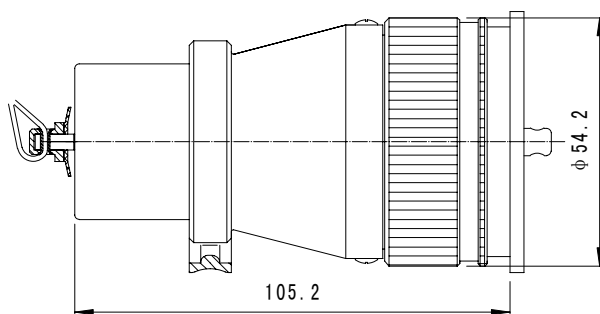
FD6W-78TJ: breakaway connector, with changing polarization, with electrical and mechanical separation functions, contact couplers 78 pairs, plug with pins, electroless nickel plating on shell surface, contact is crimped, polarization N which can be omitted. If polarization is changed to X, contact is crimped, plug P/N is: FD6W-78TJ (X)

FD6W-78ZKY: breakaway connector, without changing polarization, with electrical and mechanical separation functions, contact couplers 78 pairs, receptacle with sockets, electroless nickel plating on shell surface, crimp contact.

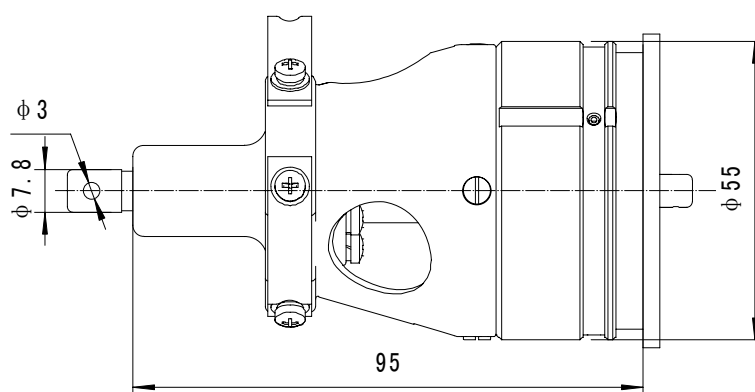
Outline dimensions

[FD6W-78TJ, FD6W-78TJ-02, FD6W-78TJ-03, FD6W-78TJ-04, FD6W-78TJ-06

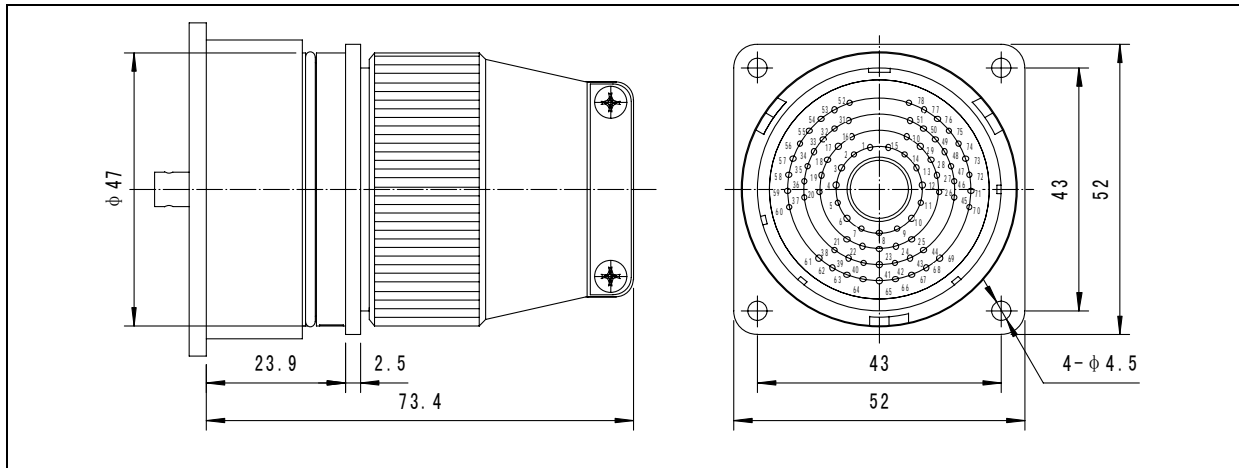
Plug]



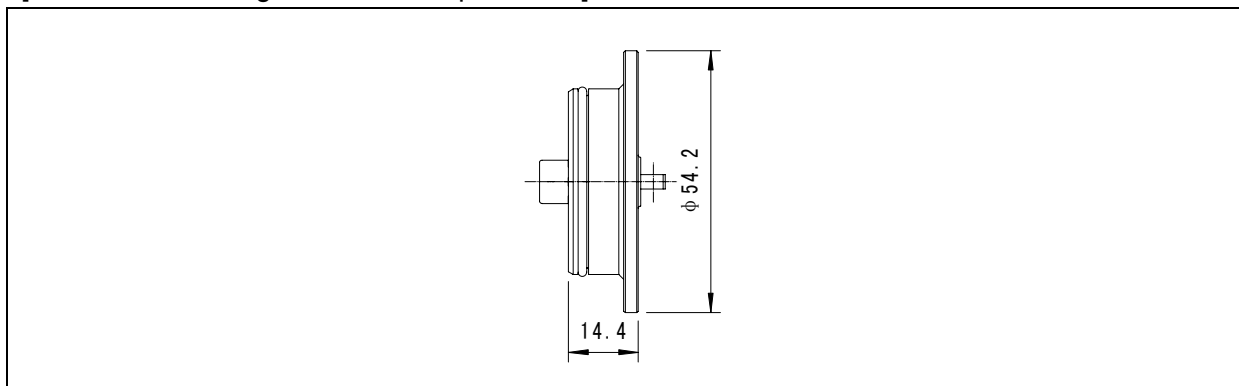
[FD6W-78TJ-05 Plug]



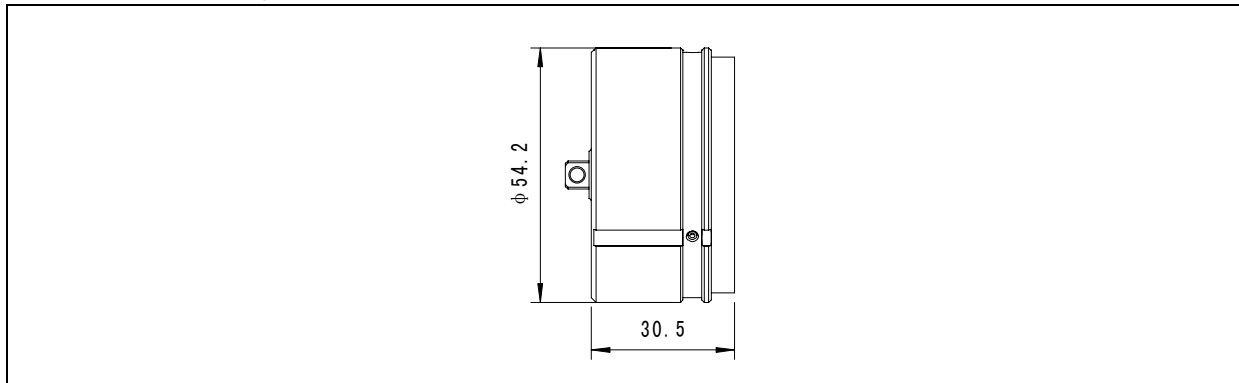
[Receptacle]



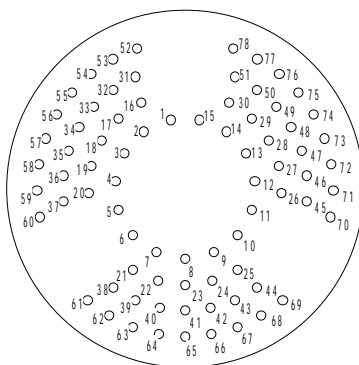
[FD6W-78FJ-B Plug metallic cover protection]



[FD6W-78FJ-C Plug metallic cover protection]



[Insert arrangement from receptacle mating interface]



○ φ 1

Contact size	Contact No.	Socket type
φ1	78	Hyperboloid socket

Plug and receptacle coupling method: straight and revolving types

AH6A-84 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ1119
- Plug with electromagnetic separation mechanism and machnical pole pulling separation mechanism
- Receptacle with anti 850°C flame burning function
- Plug and receptacle with anti raindrop function after mating
- Power and low frequency signal hybrid
- Connect with wires by: high frequency crimped and low frequency soldered
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55°C~125°C

[Mechanical performances]

——Sine vibration: 196m/s²

——Random vibration: power spectrum density 0.6G²/Hz

——Shock: 1200m/s²

——Acceleration: 490m/s²

——High altitude: 1x10⁻³Pa

——Flame retardant: receptacle withstand 850°C flame heat rediation for 90s

——Endurance: 500 cycles

[Electrical performances]

——Contact resistance and rated current: Φ1-5A-10mΩ; Φ2-20A-5mΩ

——Withstanding voltage:

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	250

High altitude	200
---------------	-----

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC RMS)

——Insulation resistance

Operation environment	Normal temp. (MΩ)	Elevated temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥1000	≥500	≥20
Between magnetic parts and shell	≥100	≥50	≥10

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.;

——Electricity separation time: not more than 0.1s

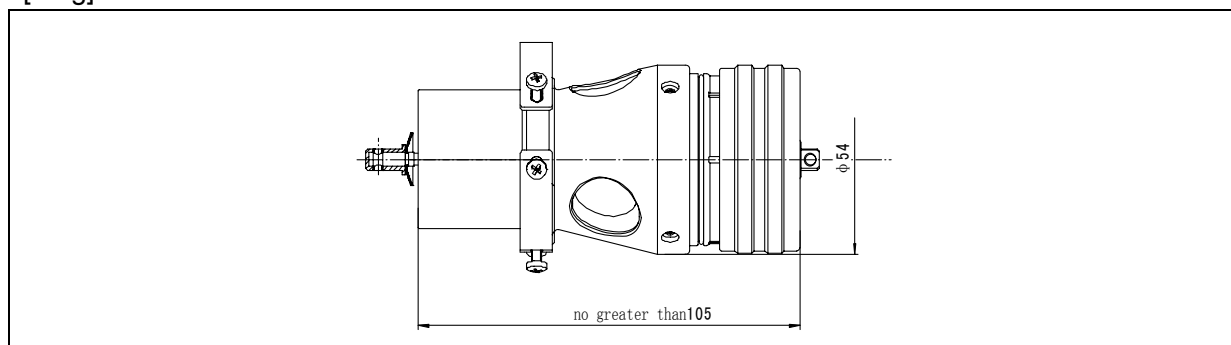
Ordering P/N

FD6A-84TJ: breakaway connector, digital hybrid, contact couplers 84 pairs, plug with pins.

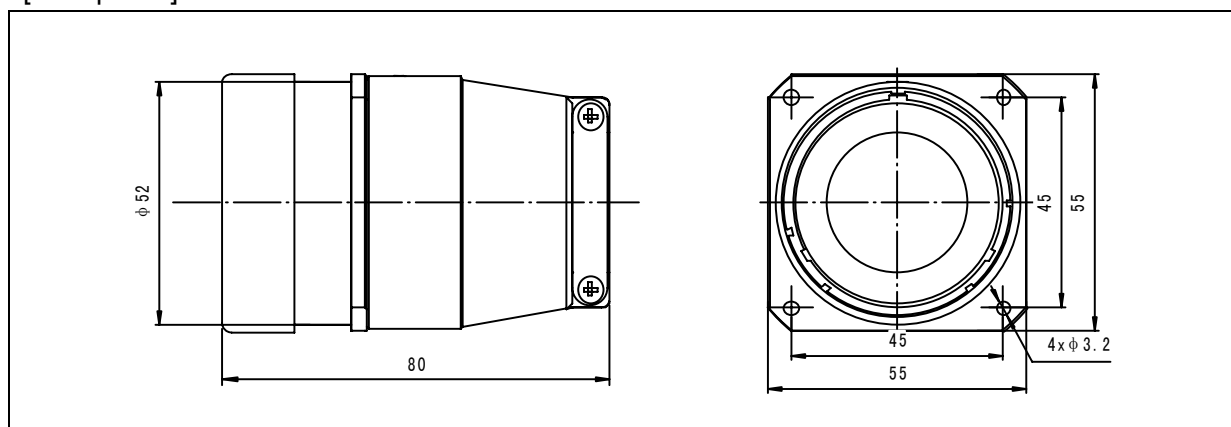
FD6A-84ZK: breakaway connector, digital hybrid, contact couplers 84 pairs, receptacle with sockets.

Outline dimensions

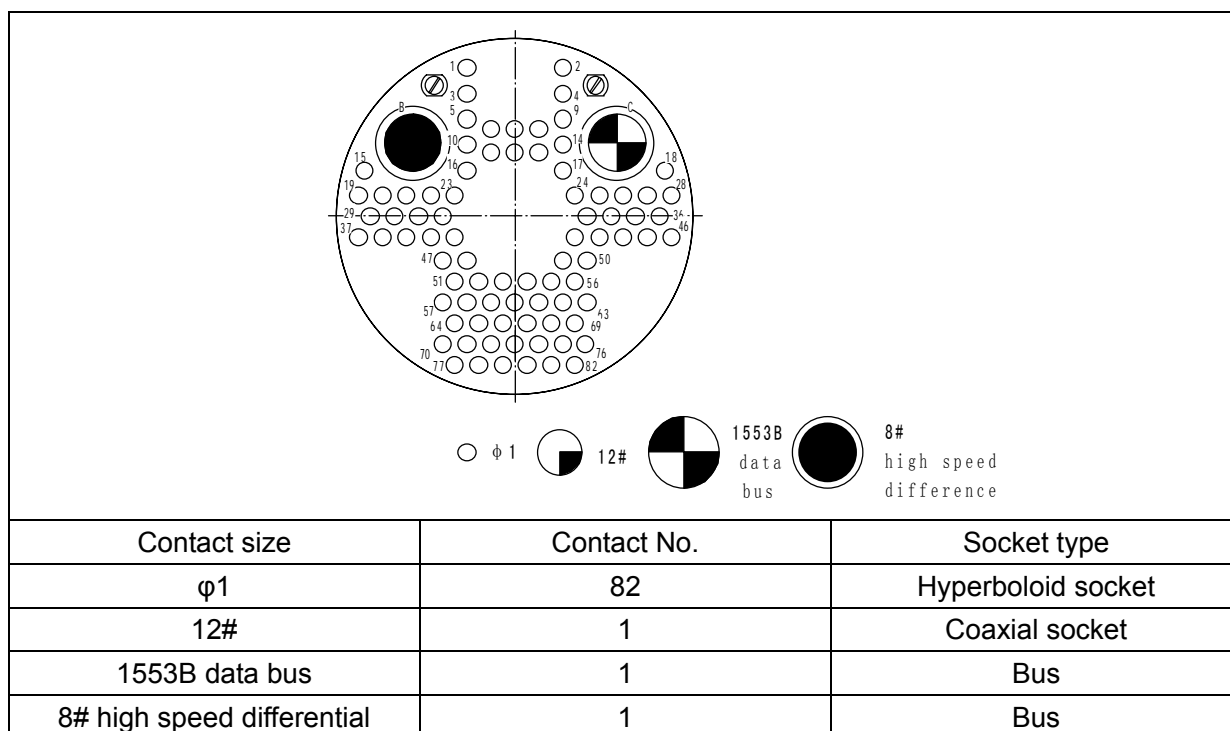
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Plug and receptacle coupling method: straight type.

FD6A-89 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ783
- Plug with electromagnetic separation mechanism and machnical pole pulling separation mechanism
- Plug and receptacle with anti raindrop function after mating
- Plug with reverse peak elimination function
- High and low frequency signals hybrid
- High frequency is crimped and low frequency is soldered
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

—operation temperature: -55℃~125℃

[Mechanical performances]

—Sine vibration: 196m/s²

—Random vibration: power spectrum density 0.6G²/Hz

—Shock: 1200m/s²

—Acceleration: 490m/s²

—High altitude: 1x10⁻³Pa

—Endurance: 500 cycles

—Mechanical separation force: 55N~80N

[Electrical performances]

—Contact resistance: 3A contacts ≤ 15mΩ (Include low level Contact resistance) , other

contacts shall not be more than 10mΩ.

——Insulation resistance: normal $\geq 5000\text{M}\Omega$; Elevated temperature $\geq 500\text{M}\Omega$; Damp heat $\geq 100\text{M}\Omega$; Between magnetic parts and shell $\geq 100\text{M}\Omega$

——Withstanding voltage (50Hz, AC rms): under standard atmosphere and elevated temperature, withstanding voltage for low frequency contact is 1000V; Damp heat, 500V, High altitude, 200V, current leakage shall not be more than 2mA.

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.;

——Electricity separation time: not more than 0.1s

——Working frequency of high frequency contact: 0~2.3GHz; VSWR shall not be more than 1.2; insertion loss shall not be more than 0.3dB

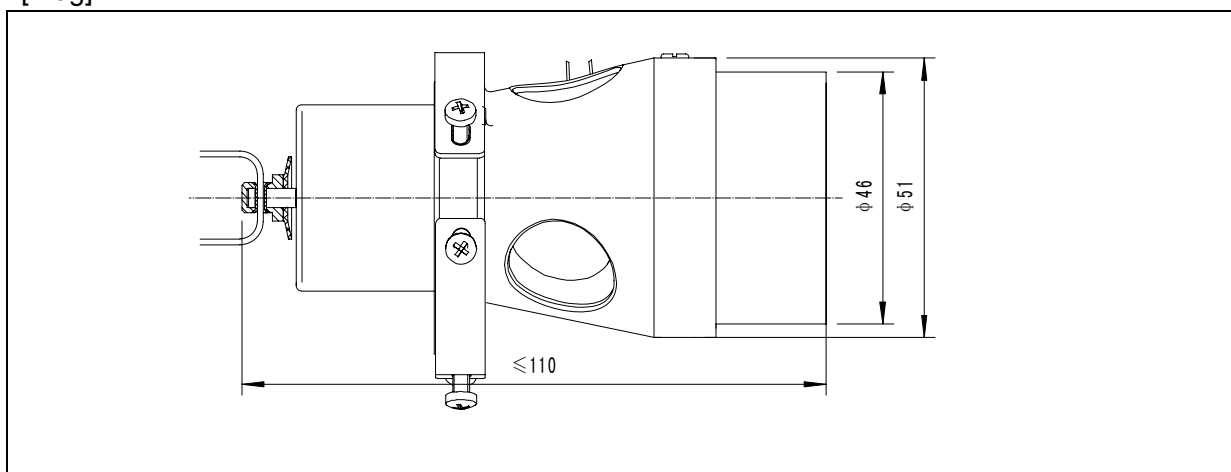
Ordering P/N

FD6A-89TJ: breakaway connector, digital hybrid, contact couplers 89 pairs, plug with pins.

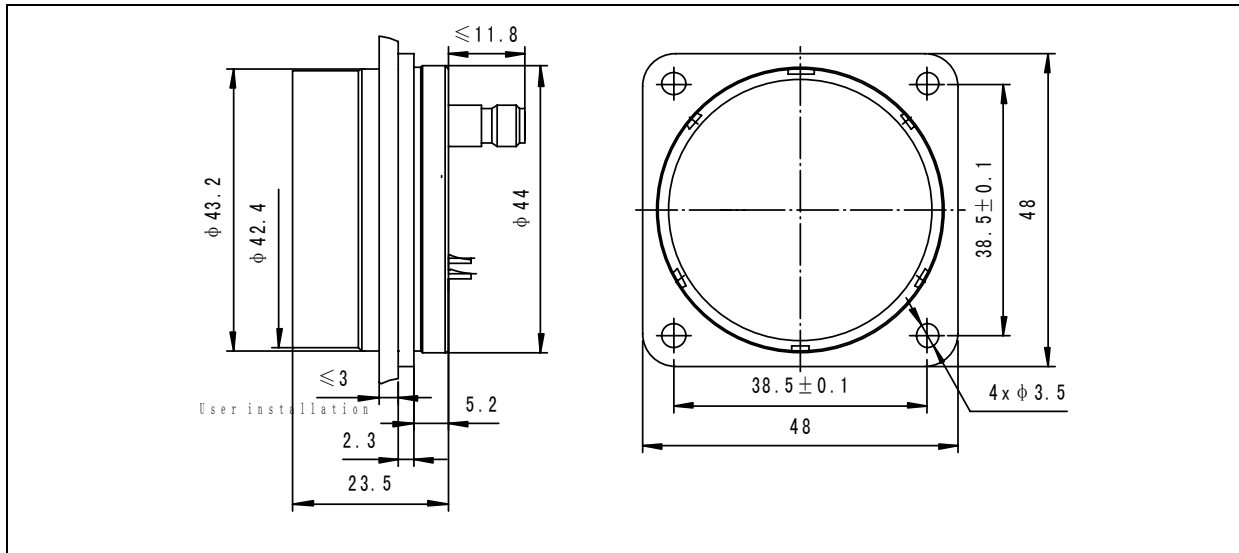
FD6A-89ZK: breakaway connector, digital hybrid, contact couplers 89 pairs, receptacle with sockets.

Outline dimensions

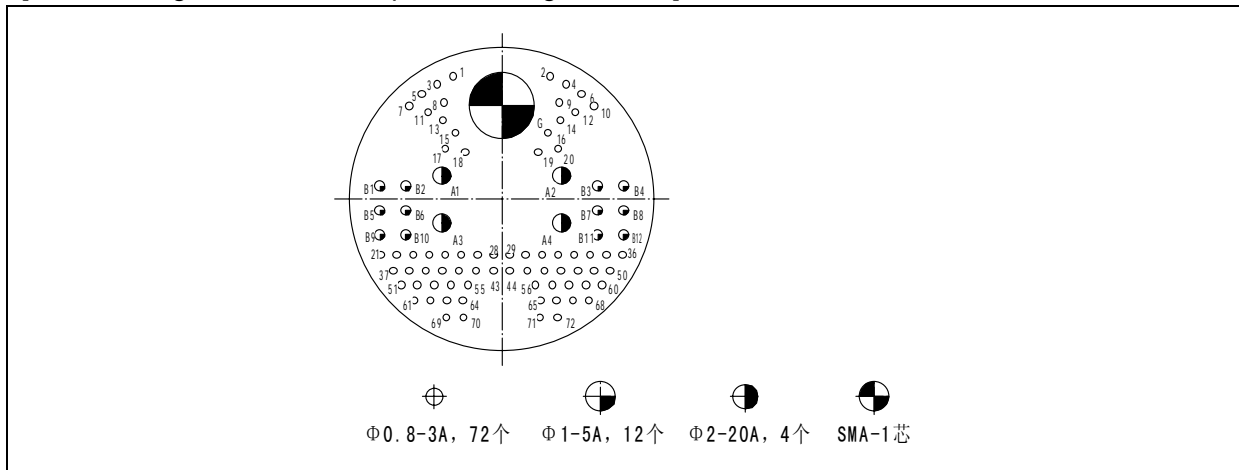
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



FD6A-96 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ1119
- Plug with electromagnetic separation mechanism and machnical pole pulling separation mechanism
- Receptacle with anti 850°C flame burning function
- Plug and receptacle with anti raindrop function after mating
- Power and low frequency signal hybrid
- Connect with wires by: high frequency crimped and low frequency soldered
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55°C~125°C

[Mechanical performances]

——Sine vibration: 196m/s²

——Random vibration: power spectrum density 0.6G²/Hz

——Shock: 1200m/s²

- Acceleration: 490m/s^2
- High altitude: $1 \times 10^{-3}\text{Pa}$
- Flame retardant: receptacle withstand 850°C flame heat radiation for 90s
- Endurance: 500 cycles

[Electrical performances]

- Contact resistance and rated current: $\Phi 1\text{-}5\text{A-}10\text{m}\Omega$; $\Phi 2\text{-}20\text{A-}5\text{m}\Omega$
- Withstanding voltage:

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	250
High altitude	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC rms)

- Insulation resistance:

Operation environment	Normal temp. (M Ω)	Elevated temp. (M Ω)	After damp heat test (M Ω)
Between contacts and between contact and shell	≥ 1000	≥ 500	≥ 20
Between magnetic parts and shell	≥ 100	≥ 50	≥ 10

- Separation current: current pulse not less than 200ms;
- Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.
- Electricity separation time: not more than 0.1s

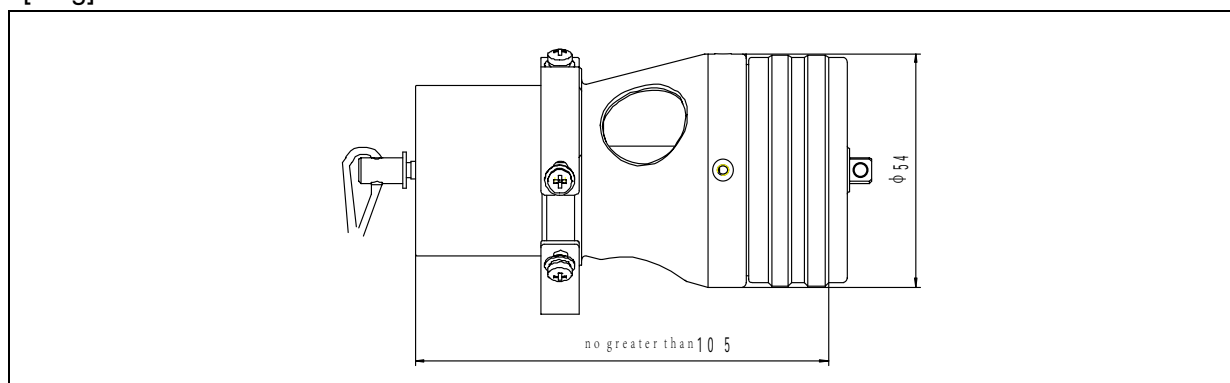
Ordering P/N

FD6A-96TJ: breakaway connector, digital hybrid, contact couplers 96 pairs, plug with pins.

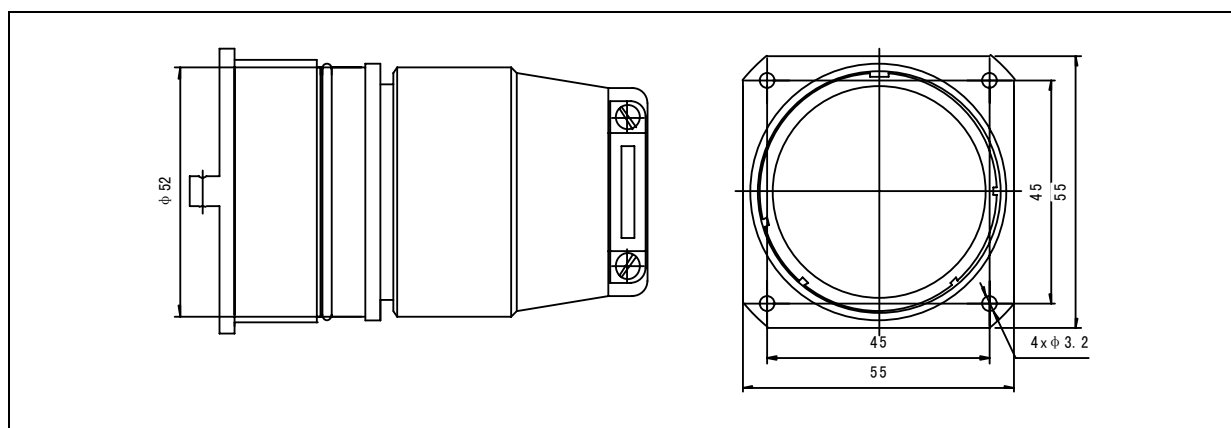
FD6A-96ZK: breakaway connector, digital hybrid, contact couplers 96 pairs, receptacle with sockets.

Outline dimensions

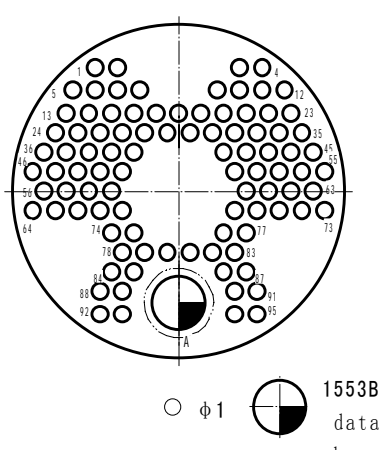
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]

		
Contact size	Contact No.	Socket type
φ1	95	Hyperboloid socket
1553B data bus	1	Bus

Plug and receptacle coupling method: straight type.

FD6A-100 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ275
- Plug with mechanical pole pulling separation mechanism
- Power and signal hybrid
- All soldered with wires
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

—operation temperature: -55℃~125℃

[Mechanical performances]

—Random vibration: 0.3G²/Hz, acceleration rms 20G

—Sinusoidal vibration: acceleration 150m/s²

—Shock: peak acceleration 735m/s²

—Acceleration: 250m/s²

—Endurance: 500 cycles

[Electrical performances]

—Contact resistance and rated current: 22#-3A-20mΩ, solder cup ID φ0.8; 20#-5A-0mΩ; 16#-10A-5mΩ

—Withstanding voltage:

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	500
High altitude (1KPa)	200

—Insulation resistance:

Operation environment	Normal temp. (MΩ)	Elevated temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥1000	≥500	≥20

—Mechanical separation force: 28N~88N

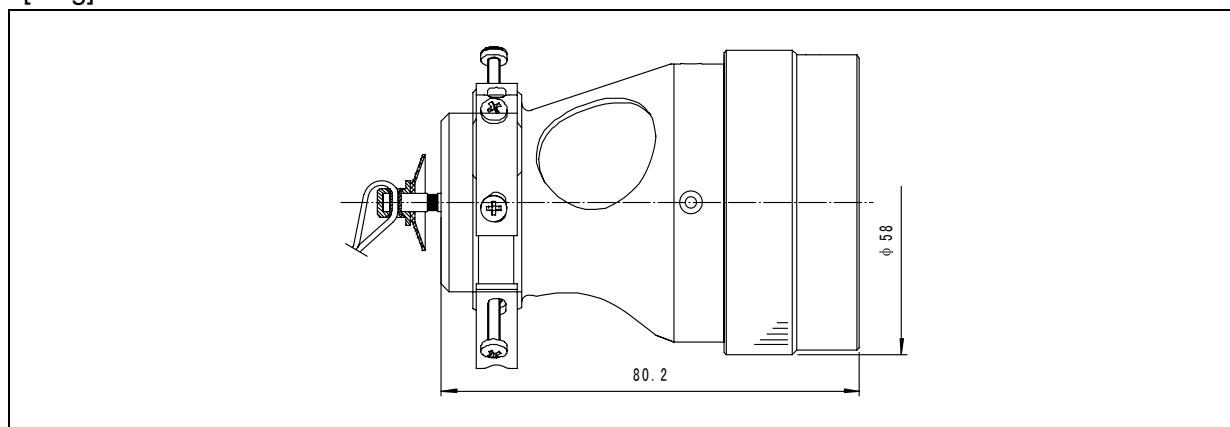
Ordering P/N

FD6A-100TJ: breakaway connector, digital hybrid, contact couplers 100 pairs, plug with pins.

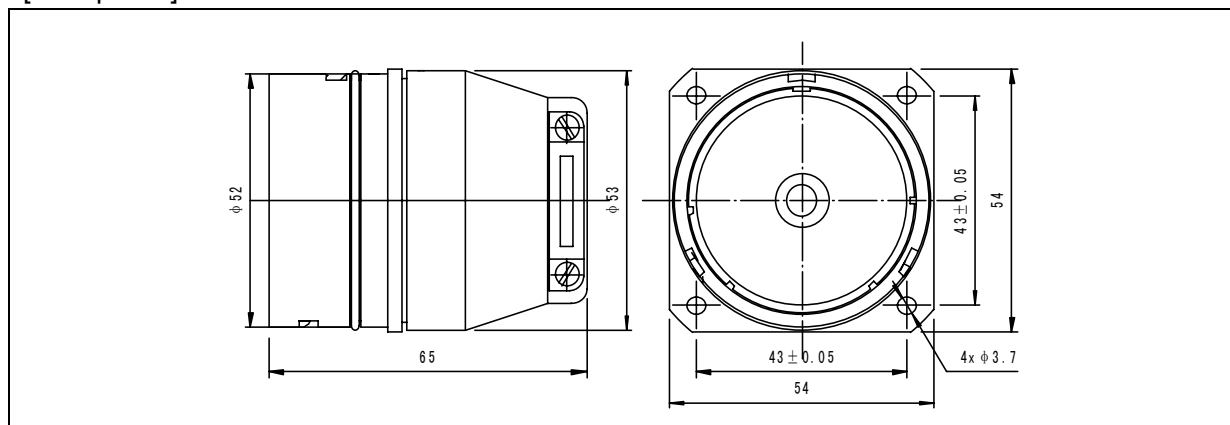
FD6A-100ZK: breakaway connector, digital hybrid, contact couplers 100 pairs, receptacle with sockets.

Outline dimensions

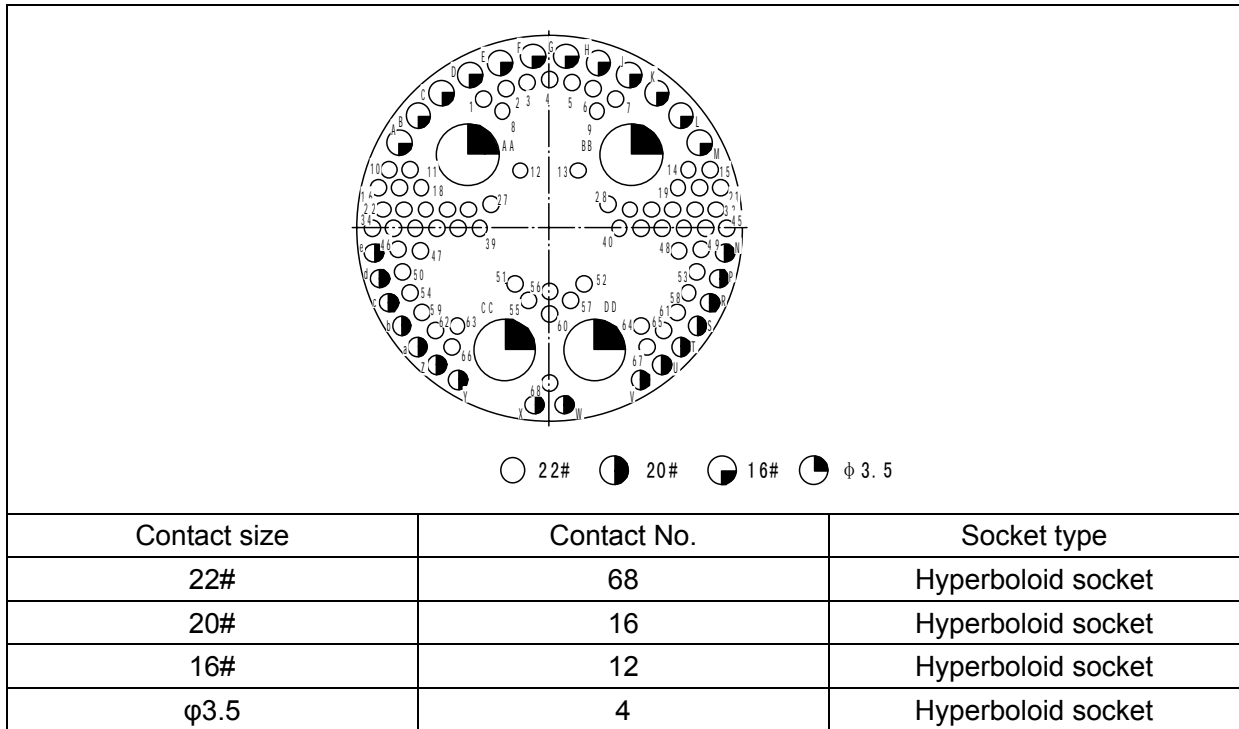
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Plug and receptacle coupling method: straight and revolving types

FD15A-100 Breakaway Connectors

Product brief introduction

- Compliant with Q/21E20125
- Plug with hand wheel locking device and mechanical pole pulling separation mechanism
- Power and signal hybrid
- All soldered with wires
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55℃~125℃

[Mechanical performances]

——Random vibration: $0.3G^2/Hz$, acceleration rms 20G

——Sinusoidal vibration: acceleration $150m/s^2$

——Shock: peak acceleration $735m/s^2$

——Acceleration: $250m/s^2$

——Endurance: 500 cycles

[Electrical performances]

——Contact resistance and rated current: 22#-3A-20mΩ; 20#-5A-10mΩ; 16#-10A-5mΩ

——Withstanding voltage:

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	250
High altitude (100Pa)	150

——Insulation resistance:

Operation environment	Normal temp. (MΩ)	Elevated temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥5000	≥500	≥20

——Mechanical separation force: 28N~88N

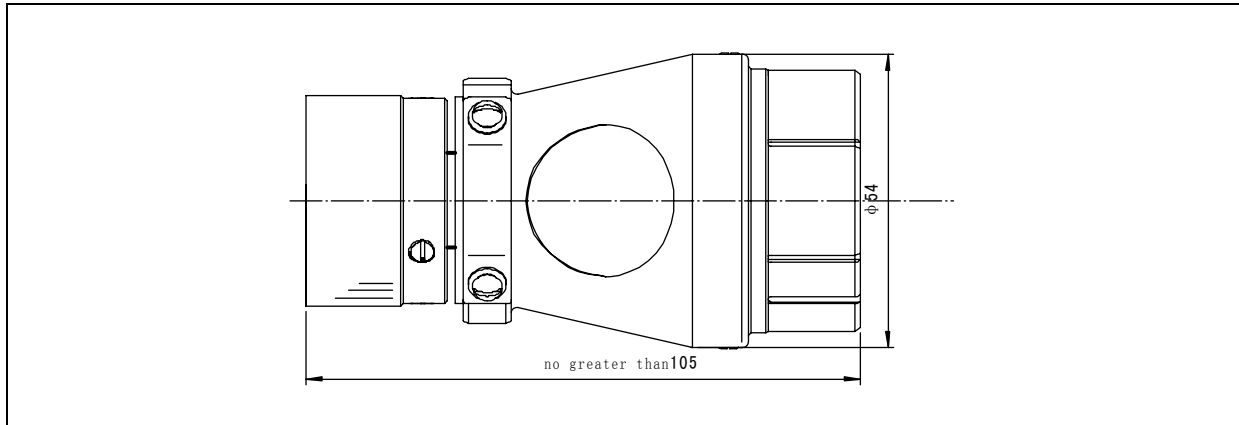
Ordering P/N

FD15A-100TJ: breakaway connector, digital hybrid, hand wheel structure, contact couplers 100 pairs, plug with pins.

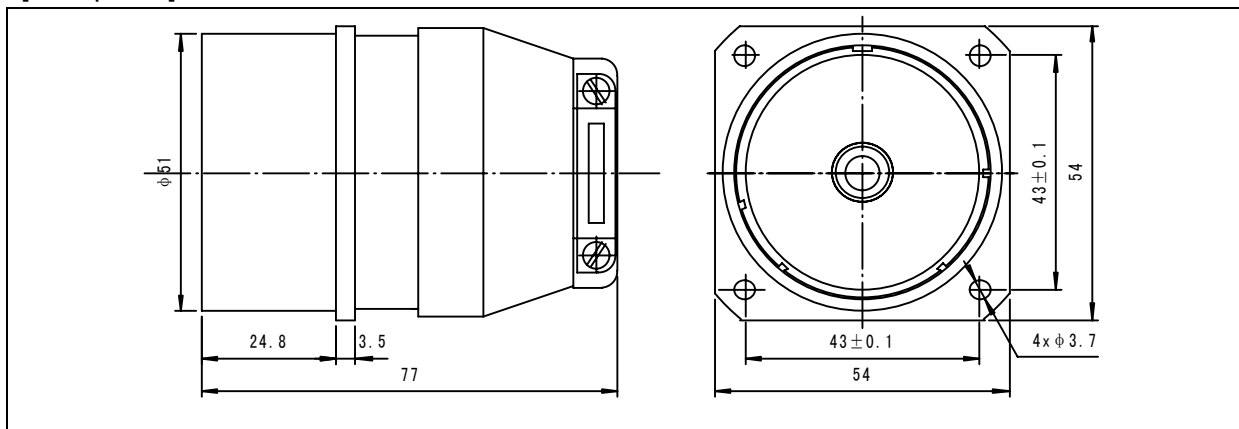
FD15A-100ZK: breakaway connector, digital hybrid, contact couplers 100 pairs, receptacle with sockets.

Outline dimensions

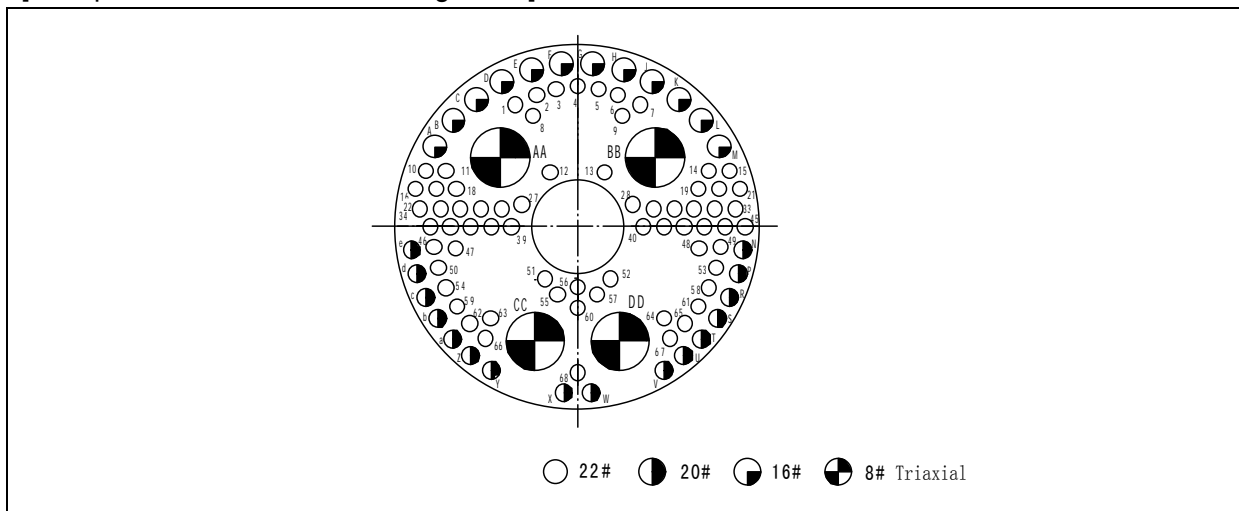
[Plug]



[Receptacle]



[Receptacle interface Insert arrangement]



Contact size	Contact No.	Socket type
22#	68	Hyperboloid socket
20#	16	Hyperboloid socket
16#	12	Hyperboloid socket
8# triaxial socket	4	Hyperboloid socket

Plug and receptacle coupling method: hand wheel coupling

FD6W-114 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ275
- Plug with electromagnetic separation mechanism and machnical pole pulling separation mechanism
- Receptacle with anti 850°C flame burning function
- contact couplers are all low frequency contact couplers
- All soldered with wires
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55°C~125°C

[Mechanical performances]

——Random vibration: $0.3G^2/Hz$, acceleration rms 20G

——Sinusoidal vibration: acceleration $150m/s^2$

——Shock: peak acceleration $735m/s^2$

——Acceleration: $250m/s^2$

——Endurance: 500 cycles

[Electrical performances]

——Contact resistance and rated current for each contact coupler pair: $\Phi 1-5A-10m\Omega$

——Withstanding voltage

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	500
High altitude (1KPa)	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC rms)

——Insulation resistance

Operation environment	Normal temp. (M Ω)	Elevated temp. (M Ω)	After damp heat test (M Ω)
Between contacts and between contact and shell	≥ 1000	≥ 500	≥ 20
Between magnetic parts and shell	≥ 100	≥ 50	≥ 10

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.

——Electricity separation time: not more than 0.1s

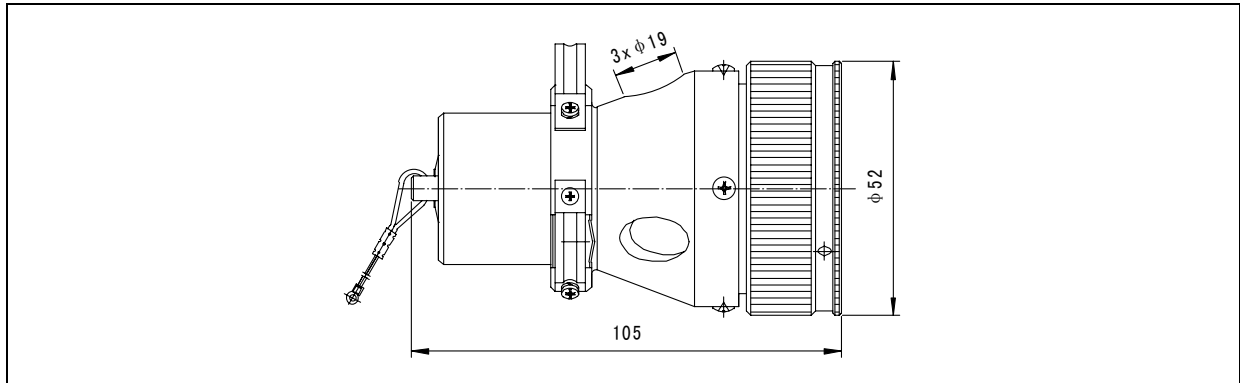
Ordering P/N

FD6W-114TJ: breakaway connector, anti raindrop, contact couplers 114 pairs, plug with pins.

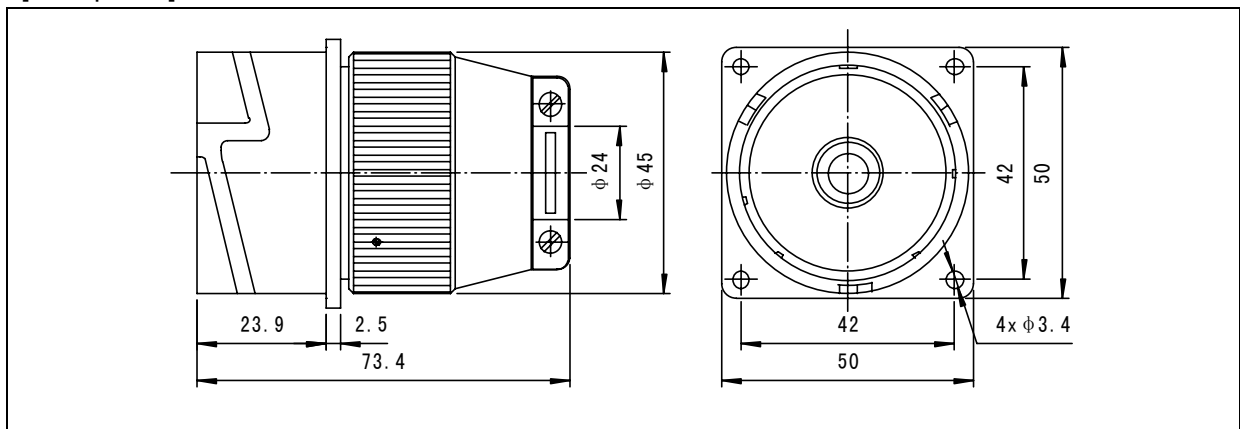
FD6W-114ZK: breakaway connector, anti raindrop, contact couplers 114 pairs, receptacle with sockets.

Outline dimensions

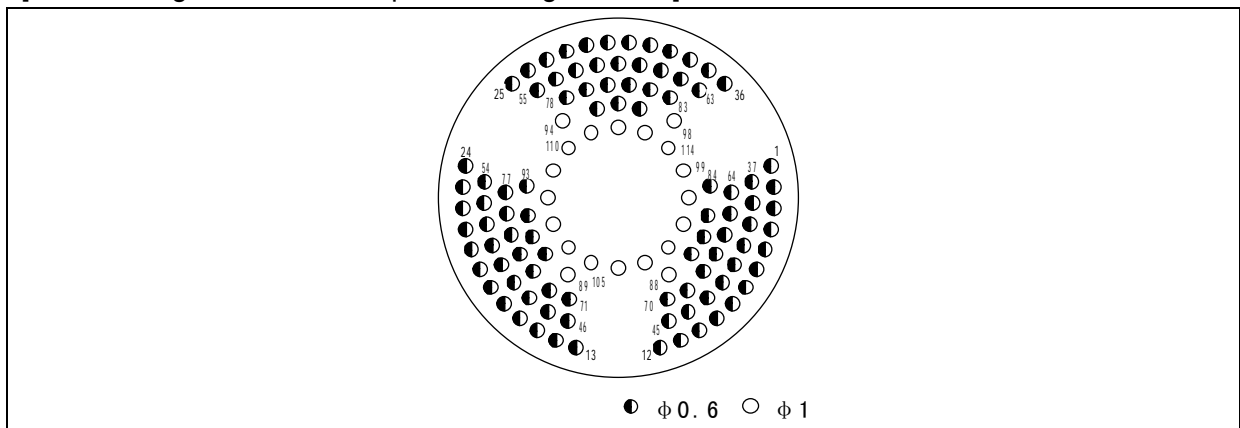
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Contact size	Contact No.	Socket type
$\phi 0.6$	94	Hyperboloid socket
$\phi 1$	20	Hyperboloid socket

Plug and receptacle coupling method: straight and revolving types

FD6-122 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ275
- Plug with electromagnetic separation mechanism and machnical pole pulling separation mechanism
- Receptacle with anti 850°C flame burning function
- contact couplers are all high and low frequencies hybrid
- Low frequency contact couplers are soldered and high frequency is crimped
- Plug and receptacle have 5 polarization key: (N, W, X, Y, Z)
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55°C~125°C

[Mechanical performances]

——Random vibration: 0.3G²/Hz, acceleration rms 20G

——Sinusoidal vibration: acceleration 150m/s²

——Shock: peak acceleration 735m/s²

——Acceleration: 250m/s²

——Endurance: 500 cycles

——Mechanical separation force: 28N~88N

[Electrical performances]

——Contact resistance and rated current for each contact coupler pair

Contact size	Rated current	Contact resistance (Ω)
φ1.0	5A	≤0.005
φ2.0	20A	≤0.00125
8#	40A	≤0.00075

——Withstanding voltage:

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	500
High altitude (1KPa)	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC rms)

——Insulation resistance:

Operation environment	Normal temp. (MΩ)	Elevated temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥1000	≥500	≥20
Between magnetic parts and shell	≥100	≥50	≥10

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous

electrifying duration shall not be more than 5s.

—Electricity separation time: not more than 0.1s

DESIGNATION

Basic series	FD	6	A	122	Z	K	A001
Design serial number	indicated by number						
Feature	A-High and low frequencies hybrid W-Non High and low frequencies hybrid						
Contact	Pairs for all contact couplers						
Shell	T-Plug Z-Receptacle						
Contact type	J-pin K-socket						
Modification code	01..., A001...						

Ordering P/N

FD6A-122ZK: breakaway connector, with electrical and mechanical separation functions, contact couplers 122 pairs, with two 1553B data bus, receptacle with sockets.

FD6A-122TJ: breakaway connector, with electrical and mechanical separation functions, contact couplers 122 pairs, with two 1553B data bus, plug with pins.

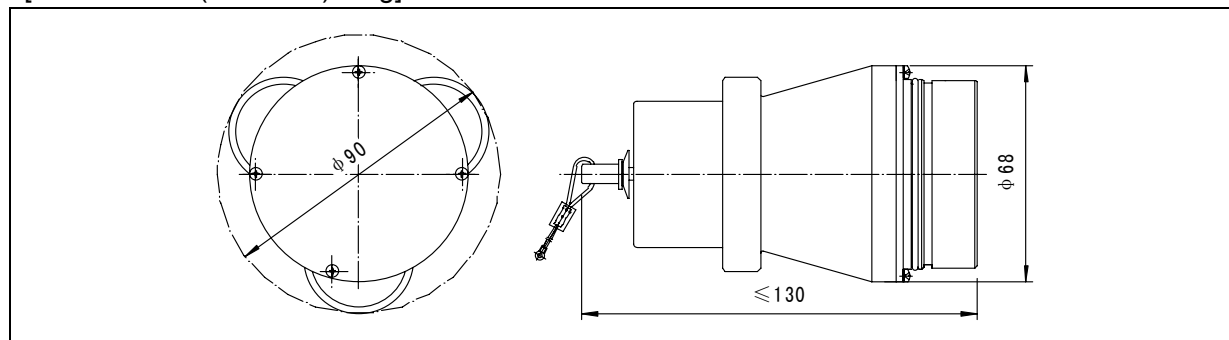
Modification: when two 1553B cavities are not needed, plug part number is changed to FD6A-122TJ A001; receptacle P/N is changed to FD6A-122ZK A001.

Modification: when two 1553B cavities are changed to high speed differential, plug part number is changed to FD6A-122TJ-01; receptacle P/N is changed to FD6A-122ZK-01.

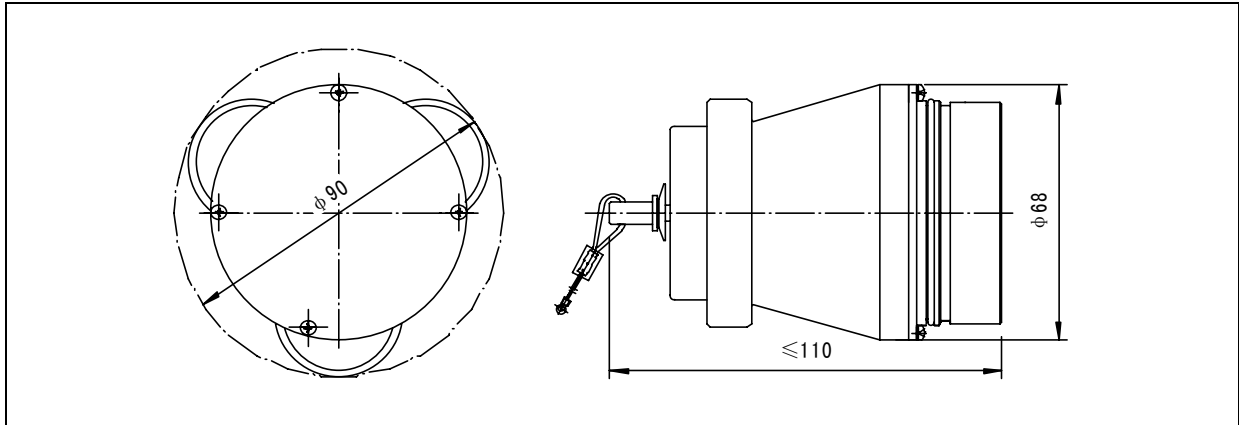
Modification: when remove all electromagnetic parts, only keep the mechanical separation function, contact couplers are changed to 8#contact couplers (Overcurrent of 40A), P/N is changed to: Plug FD6W-122TJ; Receptacle FD6W-122ZK.

Outline dimensions

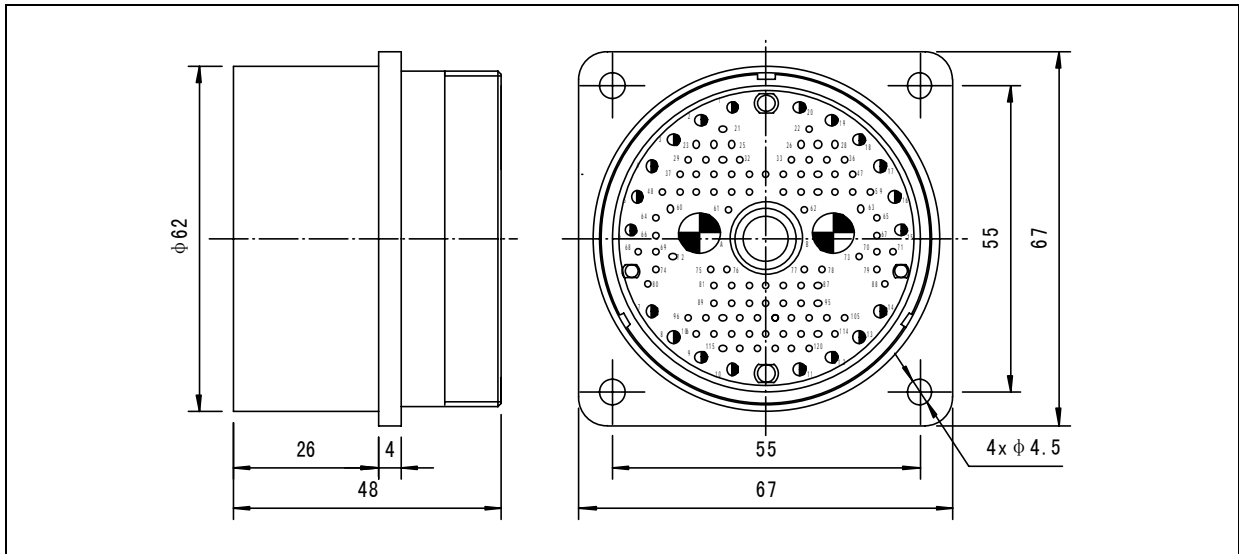
[FD6A-122TJ (A001/-01) Plug]



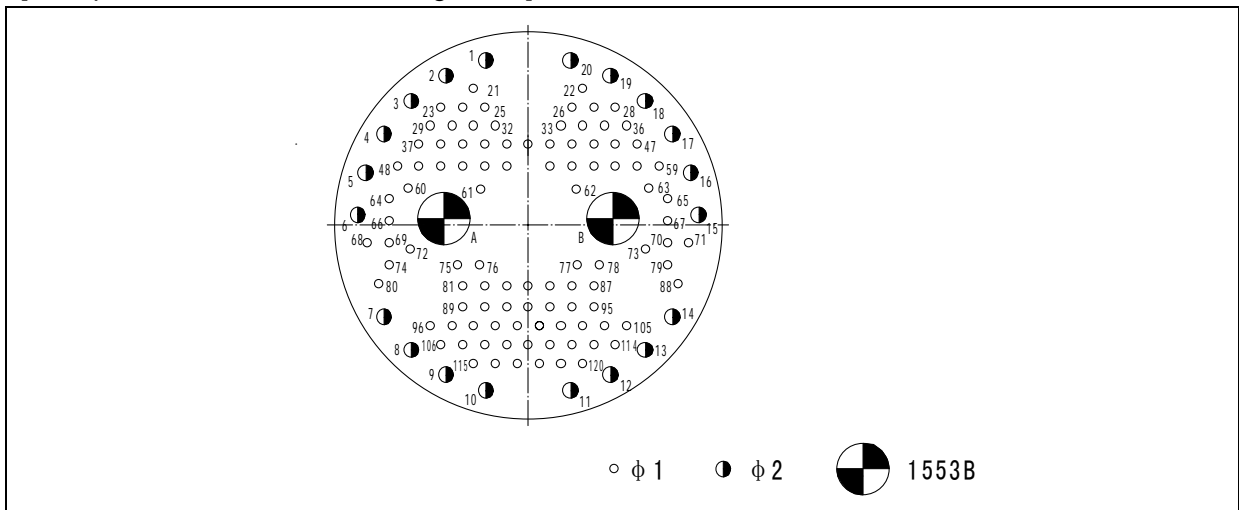
[FD6W-122TJ Plug]



[FD6A-122ZK(A001/-01), FD6W-122ZK Receptacle]



[Receptacle interface insert arrangement]



The connector consists of 100 $\phi 1$ contact couplers, 20 $\phi 2$ contact couplers and 2 1553B data bus contacts.

FD15A-122-01 Breakaway Connectors

Product brief introduction

- Compliant with Q/21E20125
- Plug with hand wheel locking device and mechanical pole pulling separation mechanism
- Receptacle withstanding 850°C flame radiation
- Hybrid with data bus and signal
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55°C~125°C

——High altitude: 100Pa

[Mechanical performances]

——Random vibration: 10~2000Hz, 0.3 G²/Hz, short term max power spectrum density 0.72 G²/Hz

——Sine vibration: 150 m/s²

——Shock: 80g

——Acceleration: 250m/s²

——Endurance: 500 cycles

——Mechanical separation force: 32 N~60N

[Electrical performances]

——Contact resistance and rated current: Φ1-5A-10mΩ, Φ2-20A-4mΩ

——Dielectric withstanding voltage: normal 1000V, Damp heat150V, High altitude150V

——Insulation resistance: normal≥5000MΩ, Damp heat≥20MΩ

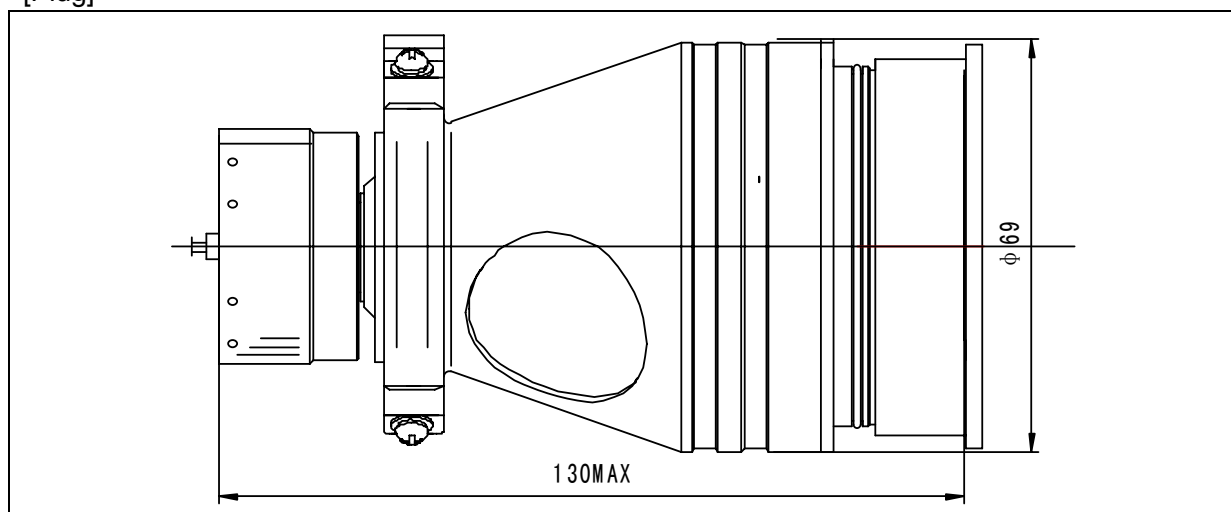
Ordering P/N

FD15A-122TJ-01: breakaway connector, FD15A-122TJ modified product, digital hybrid, hand wheel structure, contact couplers 122 pairs, hand wheel structure, plug with pins.

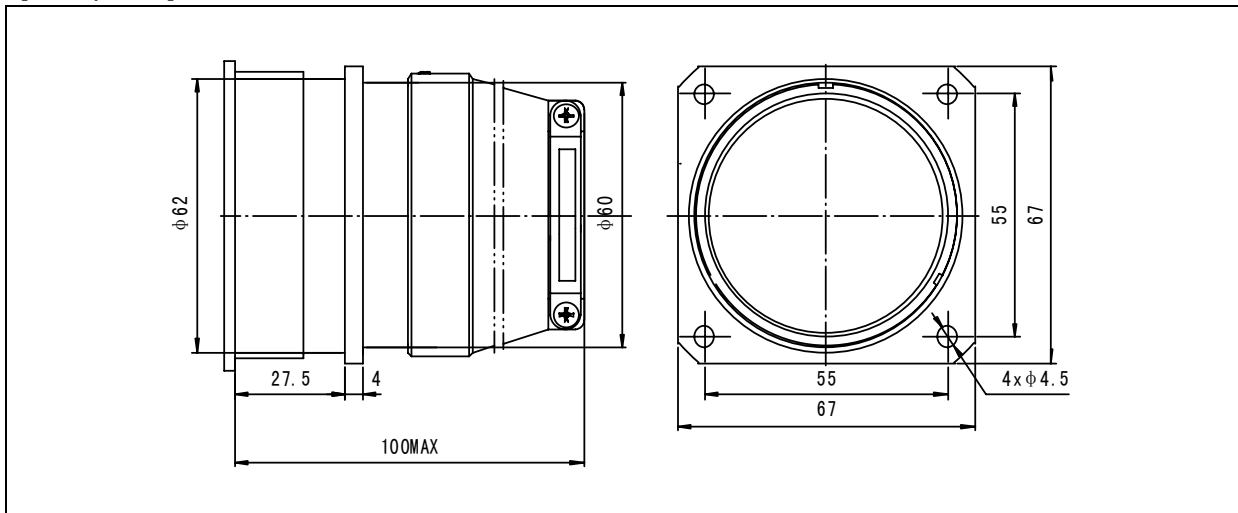
FD15A-122ZK-01: breakaway connector, FD15A-122ZK modified product, digital hybrid, contact couplers 122 pairs, receptacle with sockets.

Outline dimensions

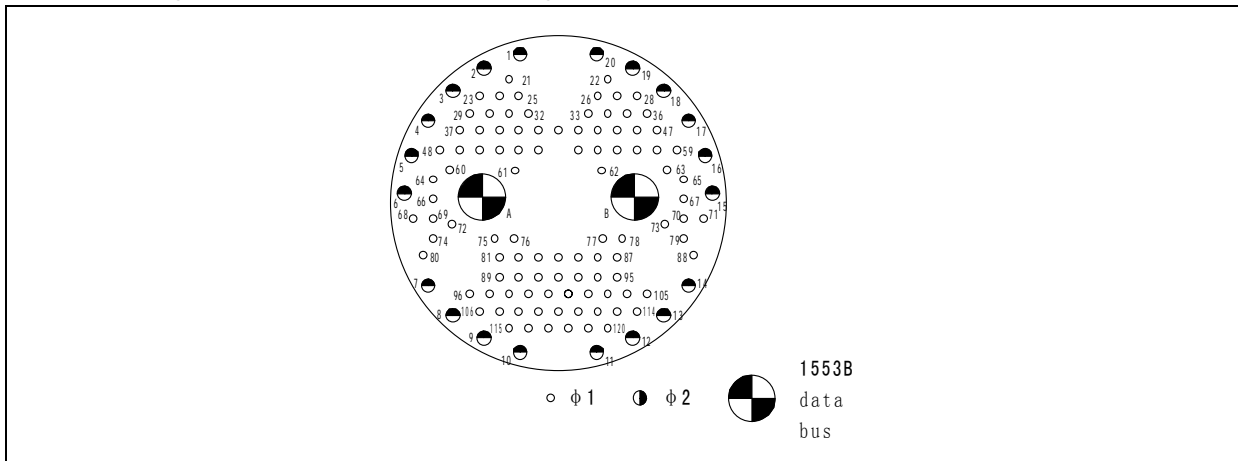
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Contact size	Contact No.	Socket type
$\phi 1$	100	Hyperboloid socket
$\phi 2$	20	Hyperboloid socket
1553B data bus	2	Bus

Plug and receptacle coupling method: hand wheel coupling

FD6A-132 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ806
- Plug with electromagnetic separation mechanism and mechanical pole pulling separation mechanism
- Plug with reverse peak elimination function
- High and low frequency signals hybrid
- High frequency is crimped and low frequency is soldered
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

- operation temperature: $-55^{\circ}\text{C}\sim 125^{\circ}\text{C}$
- High altitude: $1\times 10^{-3}\text{Pa}$
- Vacuum separation: under condition of $1\times 10^{-3}\text{Pa}$

[Mechanical performances]

- Thermal shock: $-120^{\circ}\text{C}\sim 90^{\circ}\text{C}$
- Half sine Vibration: 50g
- Random vibration: power spectrum density $0.6\text{G}^2/\text{Hz}$
- Shock corresponding spectrum: 3000g (SRS)
- Acceleration: 22g
- Endurance: 500 cycles
- Mechanical separation force: 28N~88N

[Electrical performances]

- Contact resistance: contact resistance of 3A contacts shall not be more than $15\text{m}\Omega$ and other contacts shall not be more than $10\text{m}\Omega$
- Working frequency of high frequency contact: 0~2.3GHz; VSWR shall not be more than 1.2; insertion loss shall not be more than 0.2dB
- Insulation resistance: normal $\geq 5000\text{M}\Omega$; Elevated temperature $\geq 500\text{M}\Omega$; Damp heat $\geq 100\text{M}\Omega$
- Withstanding voltage (50Hz, AC rms) : under standard atmosphere and elevated temperature, withstanding voltage for low frequency contact is 1000V; Under damp heat, 500V; under high altitude, 200V and current leakage shall not be more than 2mA.
- Separation current: current pulse not less than 200ms;
- Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.
- Electricity separation time: not more than 0.1s

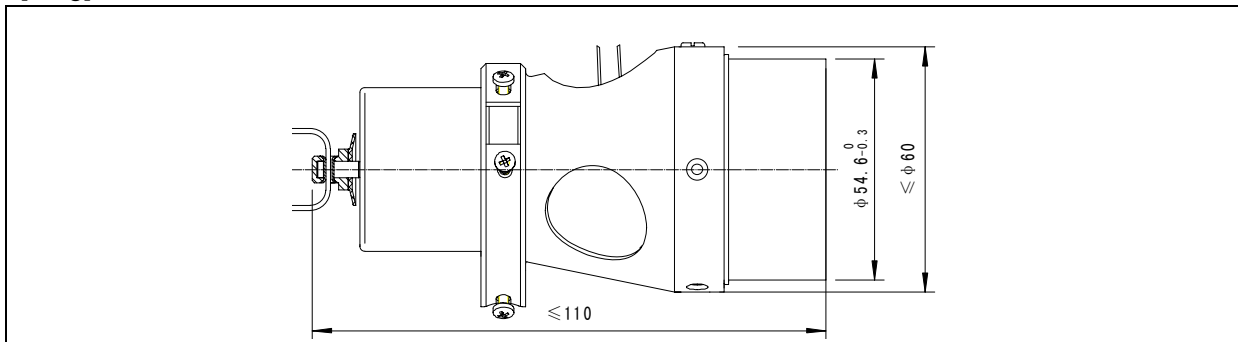
Ordering P/N

FD6A-132TJ (equal to 6TJ0603-2 132T): breakaway connector, digital hybrid, contact couplers 132 pairs, plug with pins.

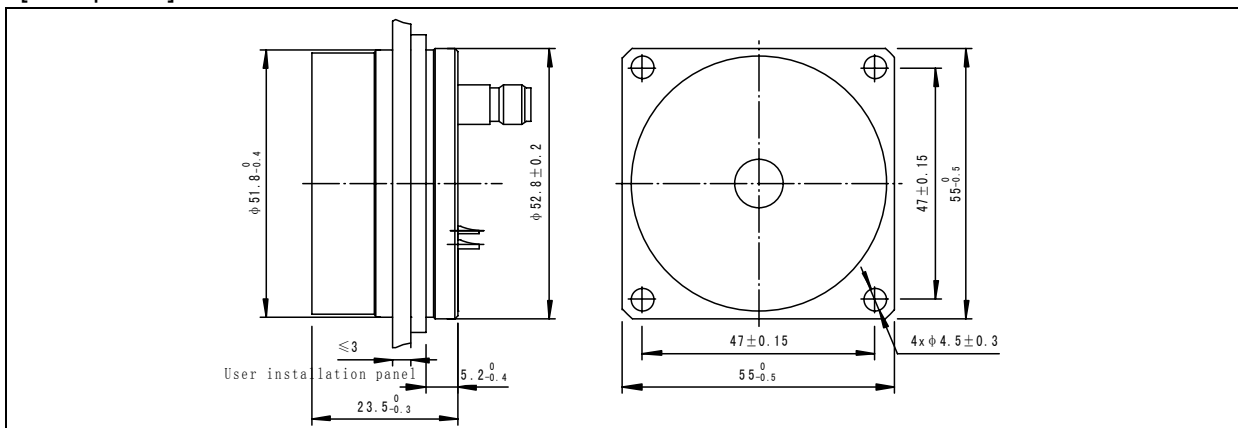
FD6A-132ZK (equal to 6TJ0603-2 132Z): breakaway connector, digital hybrid, contact couplers 132 pairs, receptacle with sockets

Outline dimensions

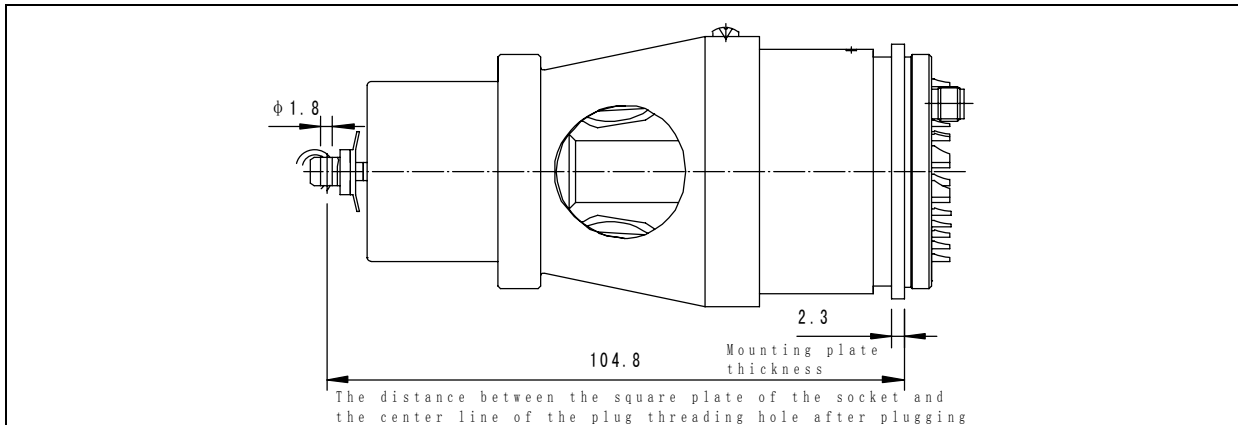
[Plug]



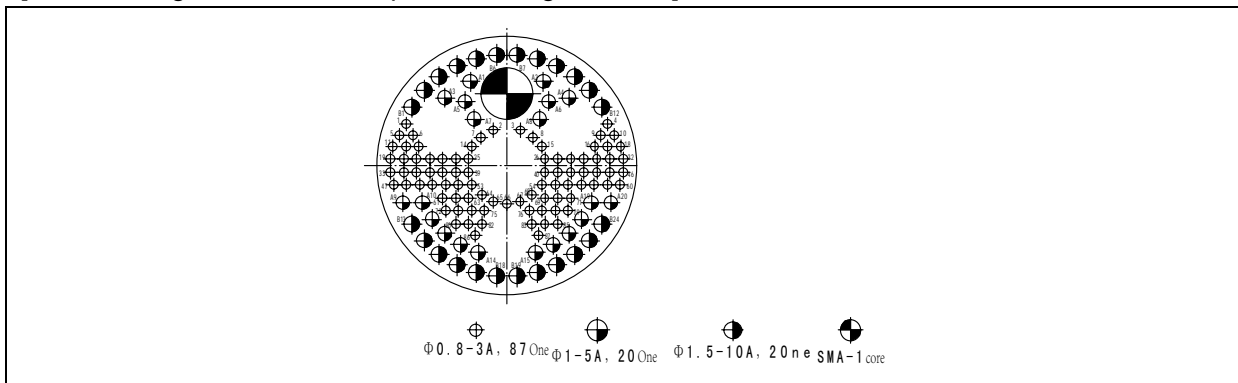
[Receptacle]



[Dimensions after plug and receptacle mating]



[Insert arrangement from receptacle mating interface]



FD15A-137 Breakaway Connectors

Product brief introduction

- Compliant with Q/21E20124
- Plug with hand wheel locking device and mechanical pole pulling separation mechanism
- Individual receptacle with EMI protection
- High and low frequency signals hybrid
- High frequency is crimped and low frequency is soldered
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: $-55^{\circ}\text{C}\sim 125^{\circ}\text{C}$

[Mechanical performances]

——Sine vibration: 150 m/s^2

——Random vibration: power spectrum density $0.12\text{ G}^2/\text{Hz}$

——Shock : 80g, Shock response spectrum Acceleration 2100g

——Acceleration: 250 m/s^2

——Endurance: 500 cycles

——Mechanical separation force: 32 N~60N

[Electrical performances]

——Contact resistance and rated current: 22#-3A $\leq 15\text{m}\Omega$; 20#-5A $\leq 10\text{m}\Omega$; 16#-10A $\leq 5\text{m}\Omega$; 1553B contacts. Inner contact resistance $\leq 55\text{m}\Omega$, outer $\leq 10\text{m}\Omega$

——Dielectric withstanding voltage: normal 1000V, Damp heat condition 250V

——Insulation resistance: $\geq 5000\text{M}\Omega$, Damp heat condition $\geq 20\text{M}\Omega$

——EMI protection: receptacle has EMI protection after separation, 10kHz~0.03GHz inner shielding efficiency is better than 20dB, 0.03 GHz~18 GHz inner shielding efficiency is better than 15dB

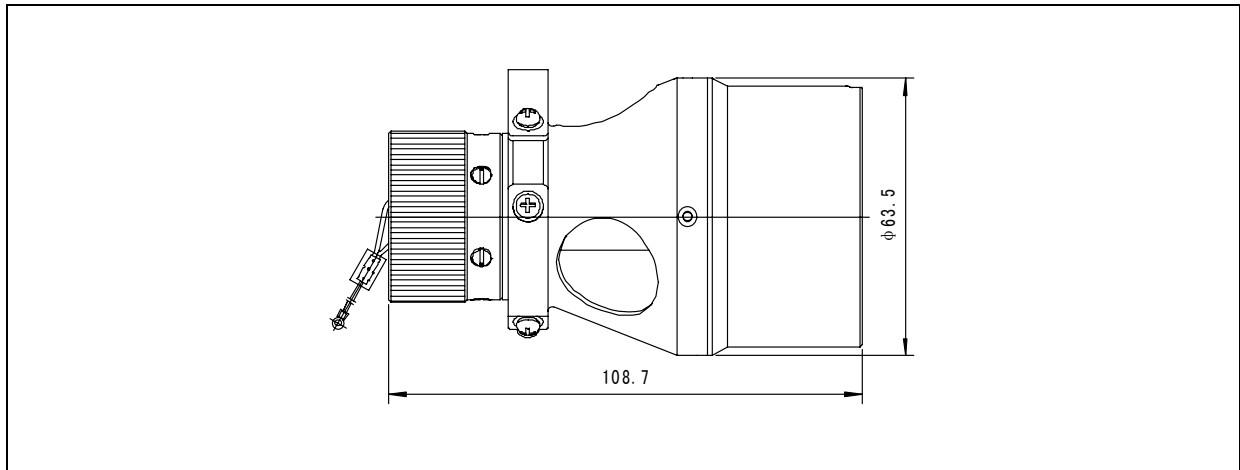
Ordering P/N

FD15A-137TJ: breakaway connector, digital hybrid, hand wheel structure, contact couplers 137 pairs, plug with pins.

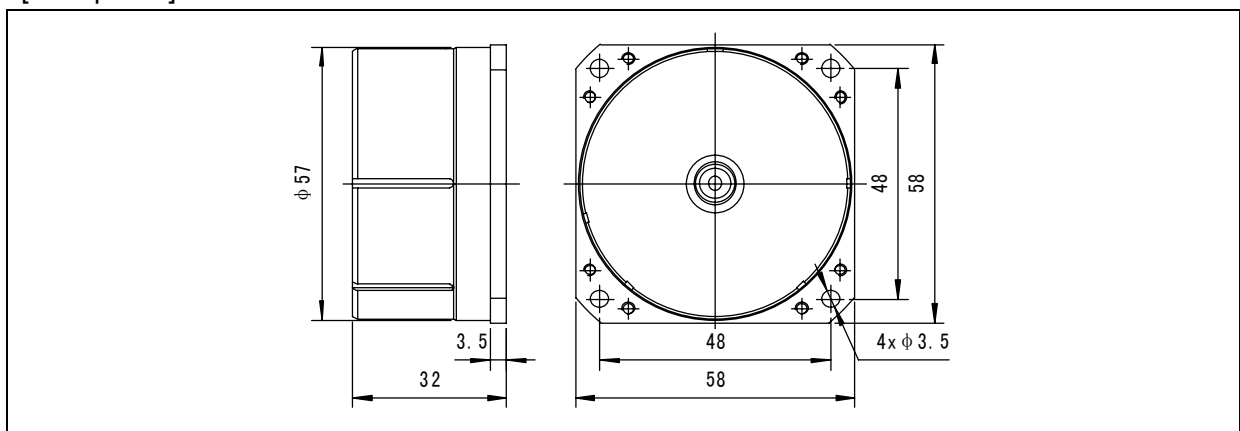
FD15A-137ZK: breakaway connector, digital hybrid, contact couplers 137 pairs, receptacle with sockets

Outline dimensions

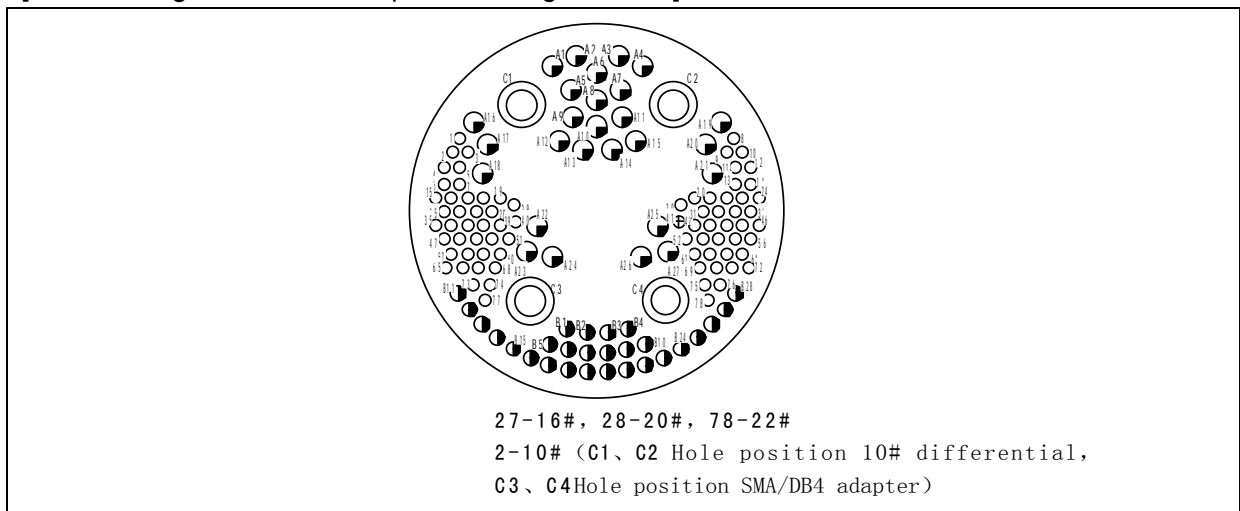
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



FD6W-137 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ1678
- Plug with hand wheel locking device and mechanical pole pulling separation mechanism
- Receptacle withstanding 850℃ flame radiation
- Wires are soldered
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55℃~125℃

[Mechanical performances]

——Random vibration: 0.3 G²/Hz, acceleration rms 20G

——Sinusoidal vibration: acceleration 150m/s²

——Sbock: peak acceleration 80g

——Acceleration: 250m/s²

——Endurance: 500 cycles

——Mechanical separation force: 35N~100N

[Electrical performances]

——Contact resistance and rated current for each contact coupler pair

Contact size	Rated current	Contact resistance (Ω)
20#	7.5A	≤0.01
16#	13A	≤0.005

——Withstanding voltage:

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	500
High altitude (1.33Pa)	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC rms)

——Insulation resistance:

Operation environment	Normal temp. (MΩ)	Elevated temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥1000	≥500	≥20
Between magnetic parts and shell	≥100	≥50	≥10

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at the electromagnetic parts is 20V~31V; continuous electrifying duration shall not be more than 5s.

——Electricity separation time: not more than 0.1s;

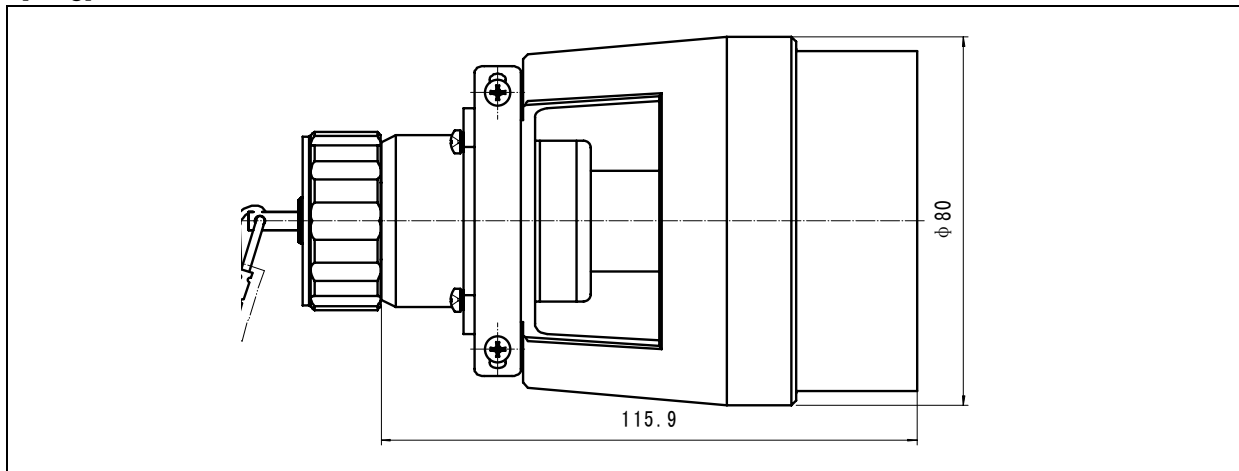
Ordering P/N

FD6W-137TJ: breakaway connector, contact couplers 137 pairs, plug with pins.

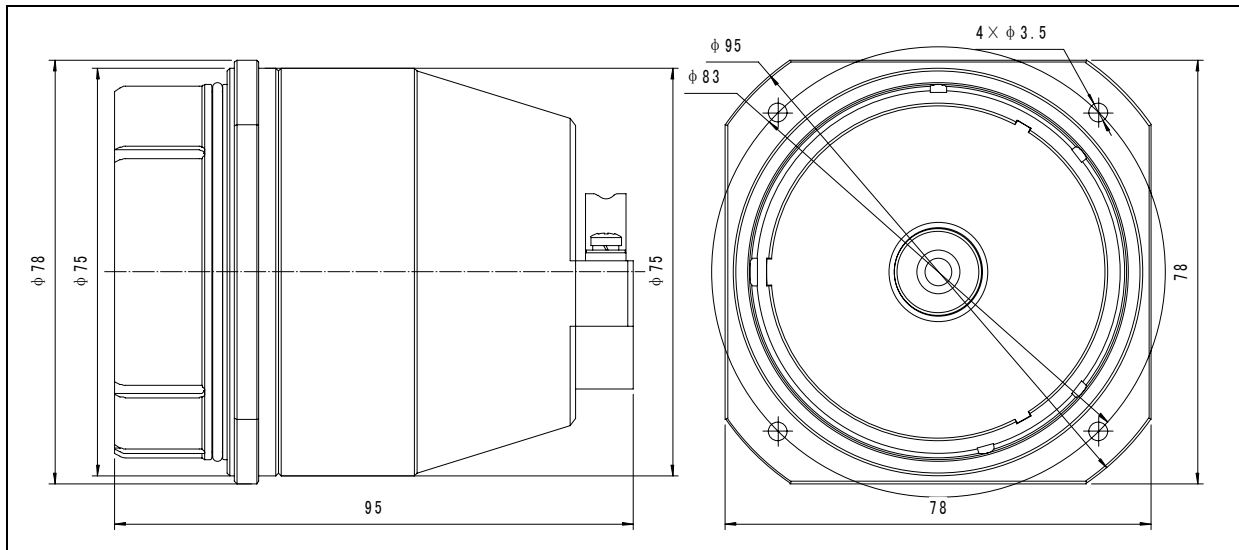
FD6W-137ZK: breakaway connector, contact couplers 137 pairs, receptacle with sockets.

Outline dimensions

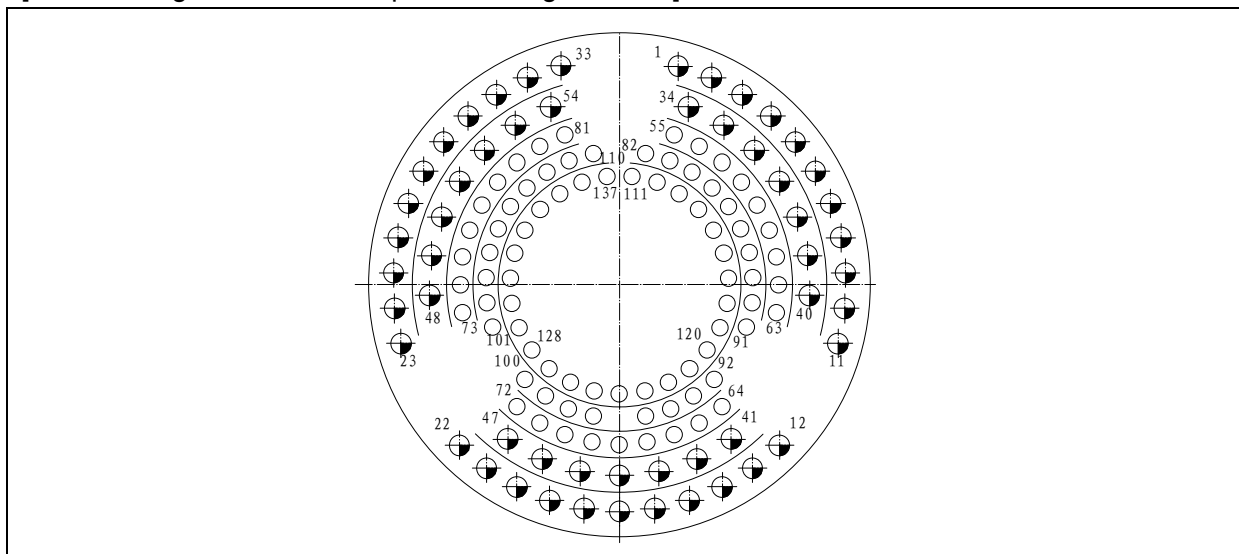
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Include 83 20# contacts and 54 16# contacts.

FD6W-141 Breakaway Connectors

Product brief introduction

- Compliant with Q/21EJ275
- Plug with electromagnetic separation mechanism and machnical pole pulling separation mechanism
- Receptacle with anti 850°C flame burning function
- Plug with reverse peak elimination function
- contact couplers are all low frequency contact couplers
- Plug soldering and Receptacle crimping
- Application: aerospace, marine, aviation fields and etc.

Main technical performances

[Environmental performances]

——operation temperature: -55°C~125°C

[Mechanical performances]

——Random vibration: 0.3 G²/Hz, acceleration rms 20G

——Sinusoidal vibration: acceleration 150m/s²

——Sbock: peak acceleration 735m/s²

——Acceleration: 250m/s²

——Endurance: 500 cycles

——Mechanical separation force: 28N~88N

[Electrical performances]

——Contact resistance and rated current for each contact coupler pair

Contact size	Rated current	Contact resistance (Ω)
φ1.0	5A	≤0.005
φ2.0	20A	≤0.00125

——Withstanding voltage:

Operation environment	Test voltage (50Hz, AC rms) V
Normal temperature and pressure	1000
Damp heat	500
High altitude (1KPa)	200

Note: withstanding voltage between electromagnetic parts control line and shell is 650V (50Hz AC rms)

——Insulation resistance:

Operation environment	Normal temp. (MΩ)	Elevated temp. (MΩ)	After damp heat test (MΩ)
Between contacts and between contact and shell	≥1000	≥500	≥20
Between magnetic parts and shell	≥100	≥50	≥10

——Separation current: current pulse not less than 200ms;

——Separation voltage: DC voltage drop at the electromagnetic parts is 23V~31V; continuous electrifying duration shall not be more than 5s.

——Electricity separation time: not more than 0.1s

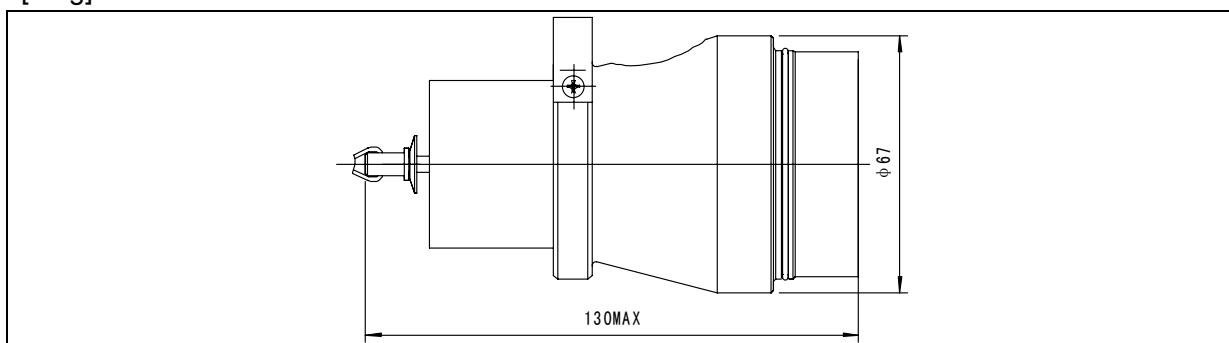
Ordering P/N

FD6W-141TJ: breakaway connector, anti raindrop, contact couplers 141 pairs, plug with pins.

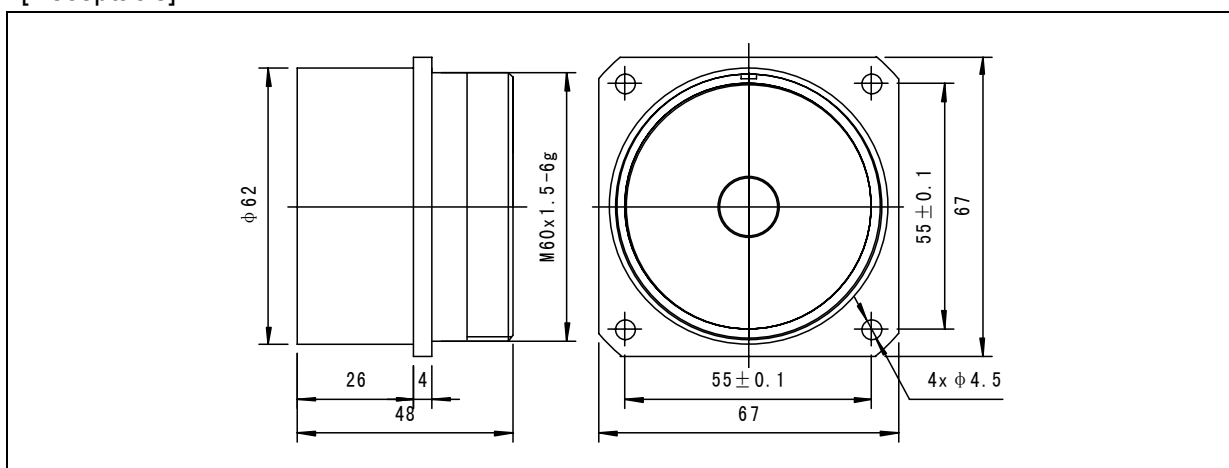
FD6W-141ZKY: breakaway connector, anti raindrop, contact couplers 141 pairs, receptacle with sockets, crimp.

Outline dimensions

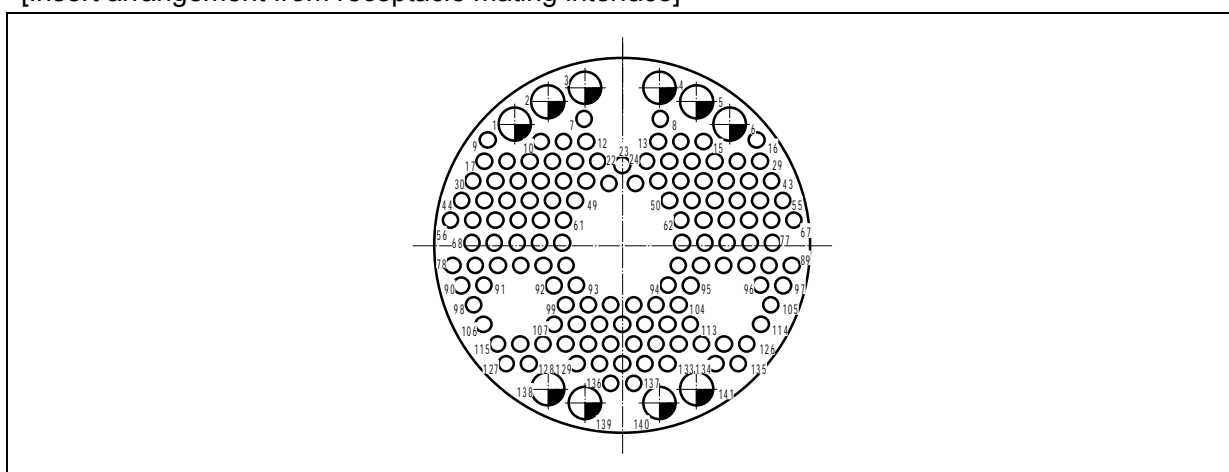
[Plug]



[Receptacle]



[Insert arrangement from receptacle mating interface]



Include 131 $\Phi 1$ contacts and 10 $\Phi 2$ contacts.