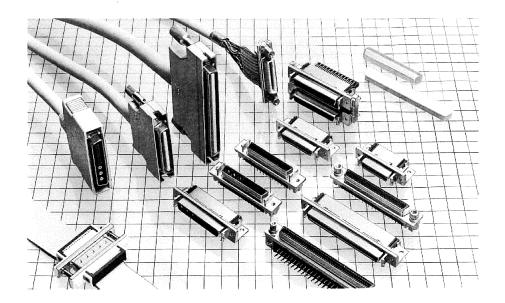
# DX SERIES HIGH-DENSITY I/O CONNECTORS

#### General

DX series high-density I/O connectors with bellow contacts are perfect for tomorrow's miniaturized electronic devices. This new 1.27mm (0.050") interconnect design ensures positive locking, effortless coupling, terminal protection and EMI reduction in a miniaturized and rugged package. DX series offers you one of the most

varied and complete lines of High-Density connectors in the world, i.e. IDC, Solder and with Co-axial contacts for the plug and right angle dip, straight dip, IDC and with Co-axial contacts for the receptacle. Available in 20, 28, 36, 50, 68, 80, 100 and 132 way.



#### **Features**

- 1.27mm (0.050") contact spacing conserves valuable board space and permits ultra-high density designs.
- Bellow contacts create smooth and precise mating and unmating.
- Unique shell design assures first make/last break grounding and overall noise protection.
- IDC termination allows quick and low cost termination to AWG # 28 & # 30 wires.
- Group IDC termination of 1.27mm pitch cable and loose piece contacts is possible simply by replacting the protector, allowing you to select a termination system meeting requirements, trial production and mass production, for example.
- Backshell and receptacle shell are made of diecast zinc alloy to reduce the penetration of external EMI noise.
- Easy to use 'One-Touch' and 'Screw' locking mechanisms assure quick and easy 'positive' closures every time.
- 8. Termination method is available in IDC, Soldering, Right Angle Dip, Straight Dip and SMT.
- DX with 3 cavities and 2 cavities for Co-axial contacts are newly introduced to meet the needs of high speed data transmission.
- Shielded Plug-in type for interface between 2 Units available.

#### **Application**

Office Automation, Computers, Communications Equipment, Factory Automation, Home Automation and other commercial applications needing high density interconnections.

## **Specifications**

Items	Standard value
Current capacity	0.5A
Rated voltage	AC125V
Insulation resistance	$250 M\Omega$ or more at DC100V
Contact resistance	50mΩ or less at DC100mA
Withstanding voltage	AC300Vr.m.s. for 1 minute

#### **Material & Finish**

Parts	Materials	Finish
Plug shell	Zinc alloy die-cast	Silver finish
Receptacle shell	Zinc alloy die-cast	Nickel plating
Insulator	PBT resin or equivalent*	Black*
Pin contact	Copper alloy	Selective gold plating
Socket contact	Copper alloy	Selective gold plating

<sup>₩</sup>UL94V-0

# Applicable cable

I/O cable (Discrete wire)							
Conductor size	AWG #28						
Conductor information	7/0.1	7/0.127					
Insulator outer dia.	φ 0.5	φ 0.58					
UL style cables UL20276 and UL2789							

Ribbon cable (flat & slit)						
Conductor size	AWG #28					
Conductor information	19/0.08					
Cable thickness	0.9					
UL style cables	UL2651, UL2734, UL20012					

<sup>\*\*</sup>To identify DX30A, DX31A, DX32A & DX33A for AWG#28, natural color is partially used in the insulator.

#### **Ordering Information**

#### Receptacle Connector

#### Plug Connector

#### Co-axial Connector

#### Accessories

$$\frac{DX}{|} - \frac{50}{|} - \frac{CV}{|} \frac{(50)}{|}$$
(1) (6) (9) (12)

- (1) Series Number: DX
- (2) Connection Type 10: Right Angle Dip
  - 20: Straight Dip
  - 30: IDC for discrete thin wire (AWG #28 and 30)
  - 31: IDC for discrete wire laminated (AWG #28 and 30)
  - 32: IDC for slit ribbon cable (AWG #28)
  - 33: IDC for flat ribbon cable (AWG #28)
- (3) Lock Type

Blank: One Touch Lock

A : Screw Lock

(4) Applicable Wire

Blank: AWG #30

A : AWG # 28

(5) Variation

Blank: Standard

- J : Co-axial contact included
- (6) Number of Pins: 20, 28, 36, 50, 60, 68, 80, 100
- (7) Types of Opening

: Plug connector

S : Receptacle connector

SW: Receptacle connector (double layer)

SE: Receptacle connector (Lock Pin)

(8) Variation

Blank: Standard

CR2A: 2 co-axial contacts provided (Receptacle)

CR3: 3 co-axial contacts provided (Receptacle)

CP3 : 3 co-axial contact holes provided (Plug)

LNA: Screw lock mechanism (Receptacle)

PG: Plug-in (Plug)

SG: Plug-in (Receptacle)

(9) Accessories

CV : Straight cable (One-touch lock type)

CV1 : Straight cable entry case (Screw lock type)

CV3: Straight cable entry case (Over mode type)

CV4 : Straight cable entry (Symmetry big cable)

DC: Dust cap (Semi-hard, for one-touch lock)

DC1: Dust cap (Semi-hard, for screw lock)

DC2: Dust cap (Soft for screw lock)

(10) No. of signal terminals: 0, 26

(11) Shell size

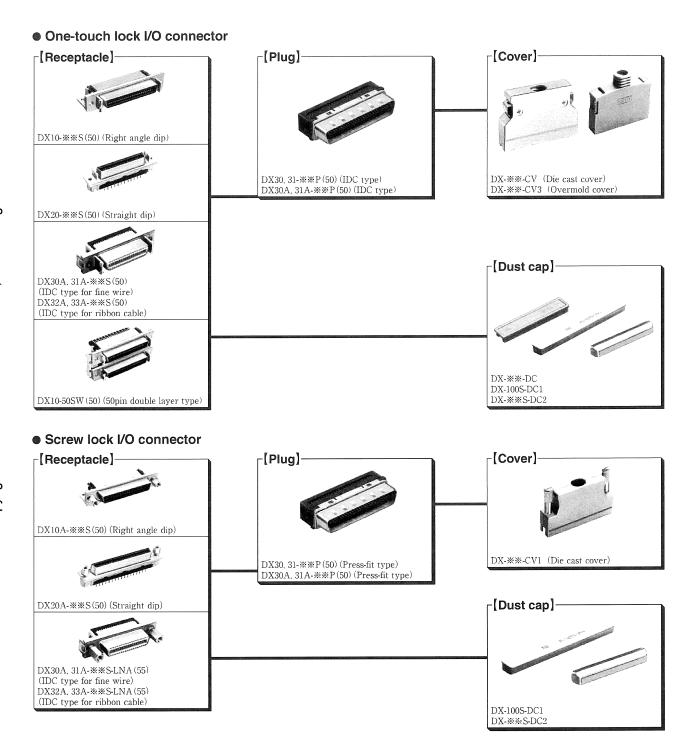
No.symbol: 50 pins

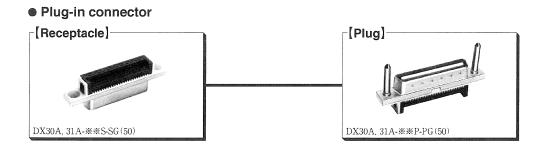
A : 20 pins

(12) Specifications Content

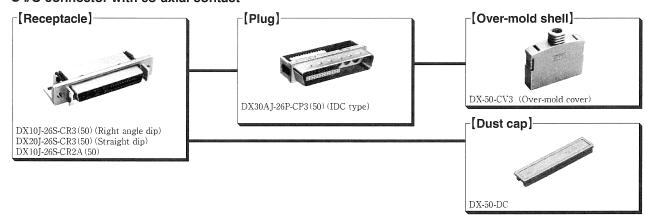
(%%): Individual specifications

#### **DX Series variations**





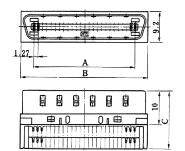
#### ● I/O connector with co-axial contact



# 1. IDC Plug Connector 1.1 DX30, DX30A-% %P (50)



DX30-50P(50)







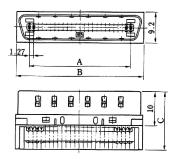
DX30A-50P(50)

						1	Unit: mm
HRS No.	No. of Pin	Part No.	Applicable cable	А	В	С	RoHS
CL230-0008-0-50	- 20	DX30-20P (50)	AWG#30	11.43	19.18	17.2	YES
CL230-0022-1-50	20	DX30A-20P (50)	AWG#28	11,43	19.16	17.2	
CL230-0009-3-50	28	DX30-28P (50)	AWG#30	16.51	24.26	17.2	
CL230-0023-4-50	20	DX30A-28P (50)	A W G # 28	10.51	2-1,20	17.2	
CL230-0010-2-50	36	DX30-36P (50)	AWG#30	21.59	29.34	17.2	
CL230-0024-7-50	30	DX30A-36P(50)	AWG#28	21.33			
CL230-0011-5-50	50	DX30-50P (50)	AWG#30	30.48	38.23	17.2	
CL230-0025-0-50	30	DX30A-50P(50)	AWG#28			17.2	
CL230-0012-8-50	68	DX30-68P (50)	A W G # 30	41.91	49.66	17.2	
CL230-0026-2-50	00	DX30A-68P (50)	AWG#28	41.31	45.00	17.2	
CL230-0013-0-50	80	DX30-80P (50)	∧WG#30	49.53	57.28	17.2	
CL230-0027-5-50	00	DX30A-80P(50)	AWG#28	40.00	31.28	17.2	
CL230-0014-3-50	100	DX30-100P (50)	AWG#30	62.23	69.98	10.7	
CL230-0028-8-50	100	DX30A-100P(50)	A W G # 28	02.20	0:7:36	18.2	

# 1.2 IDC Plug Connector DX31, DX31A- \* \* P (50) (Discrete Wire Laminated)



DX31-50P(50)





Unit; mm

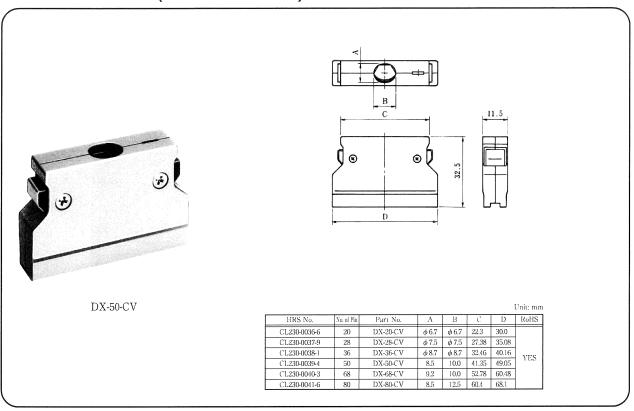


DX31A-50P(50)

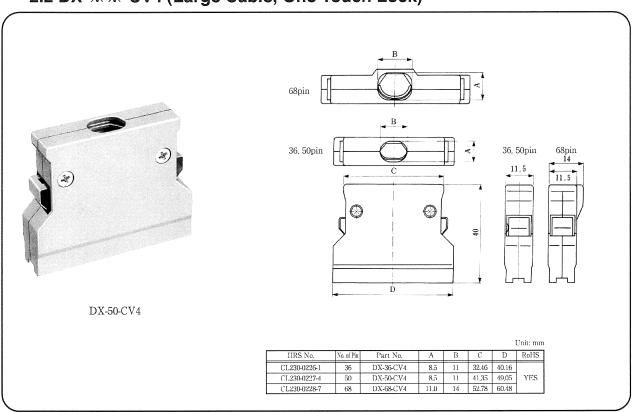
HRS No.	No. of Pin	Part No.	Applicable cable	Α	В	C	RoHS
CL230-0015-6-50	- 20	DX31-20P (50)	AWG#30	11.43	19.18	17.2	
CL230-0029-0-50	20	DX31A-20P (50)	AWG#28	11.43	19.16	17.2	
CL230-0016-9-50	- 28	DX31-28P (50)	AWG#30	16.51	24.26	17.2	
CL230-0030-0-50	20	DX31A-28P (50)	AWG#28	10.51	24.20	17.2	
CL230-0017-1-50	36	DX31-36P (50)	AWG#30	21.59	29.34	17.2	
CL230-0031-2-50	30	DX31A-36P (50)	AWG#28	21.00	20.04	17.2	
CL230-0018-4-50	50	DX31-50P (50)	AWG#30	30.48	38.23	17.2	YES
CL230-0032-5-50	30	DX31A-50P (50)	AWG#28	50.46	30.23	11.2	163
CL230-0019-7-50	68	DX31-68P (50)	AWG#30	41.91	49.66	17.2	
CL230-0033-8-50	00	DX31A-68P (50)	AWG#28	41,51	45.00	17.2	
CL230-0020-6-50	- 80	DX31-80P (50)	∧WG#30	49.53	57.28	17.2	
CL230-0034-0-50	00	DX31A-80P (50)	AWG#28	49.33	37.48	17.2	
CL230-0021-9-50	100	DX31-100P (50)	AWG#30	62,23	69.98	18.2	
CL230-0035-3-50	100	DX31A-100P (50)	A WG # 28	02,23	05.56	10.2	

#### 2. Shell

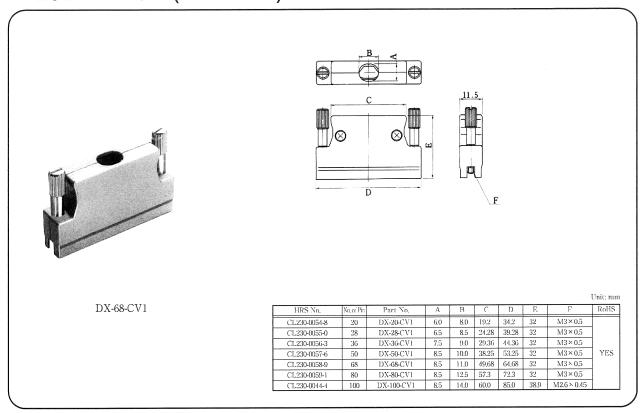
# 2.1 DX-% %-CV (One Touch Lock)



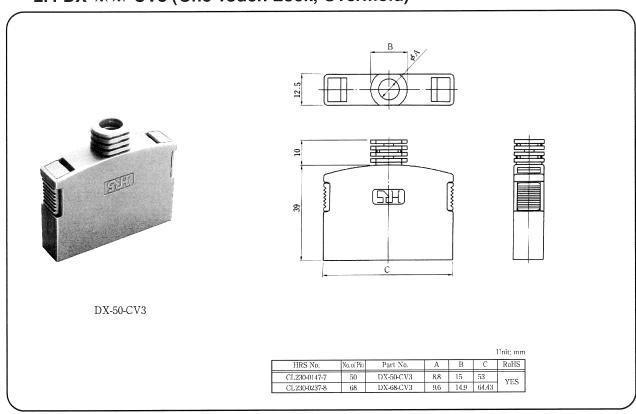
# 2.2 DX- \*\* \*\*-CV4 (Large Cable, One Touch Lock)



## 2.3 DX-※ \*\*-CV1 (Screw Lock)

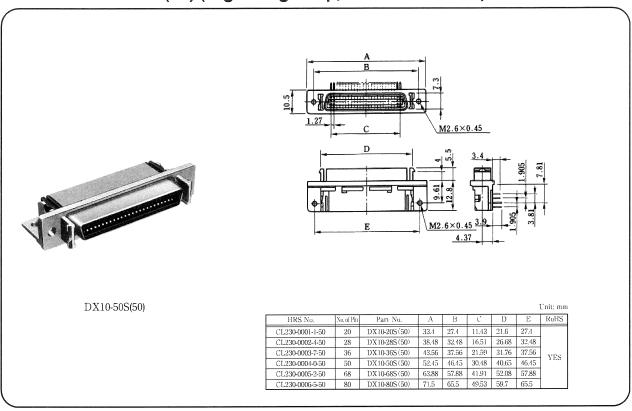


# 2.4 DX-% %-CV3 (One Touch Lock, Overmold)

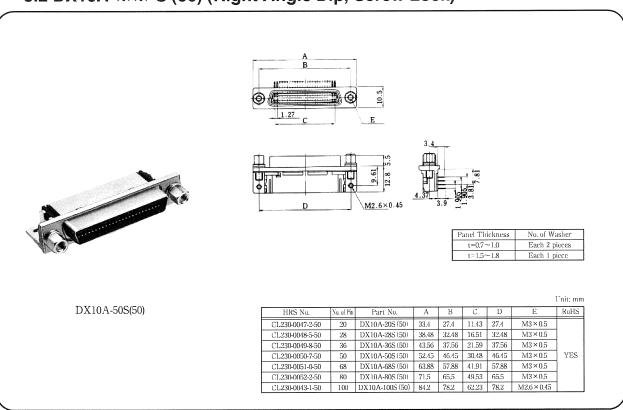


#### 3. Receptacle

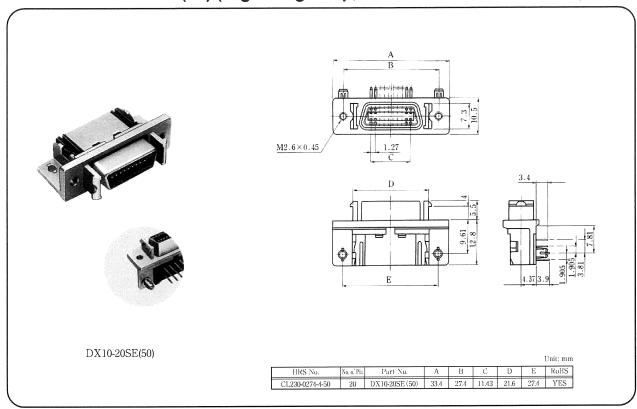
# 2.1 DX10-※ ※-S (50) (Right Angle Dip, One Touch Lock)



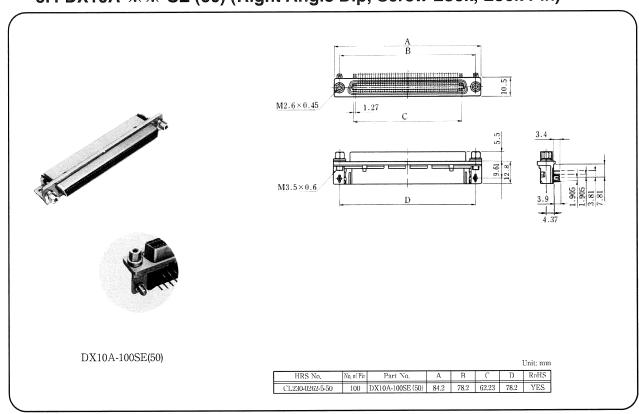
# 3.2 DX10A-% %-S (50) (Right Angle Dip, Screw Lock)



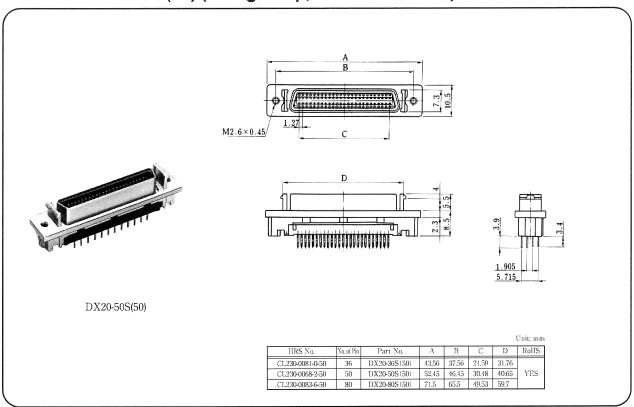
# 3.3 DX10-% %-SE (50) (Right Angle Dip, One Touch Lock, Lock Pin)



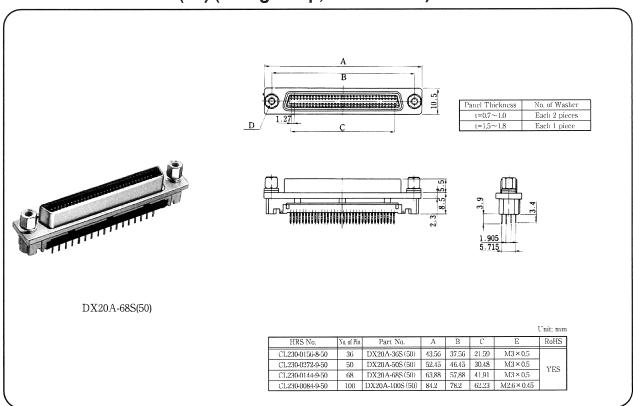
# 3.4 DX10A- \*\* -SE (50) (Right Angle Dip, Screw Lock, Lock Pin)



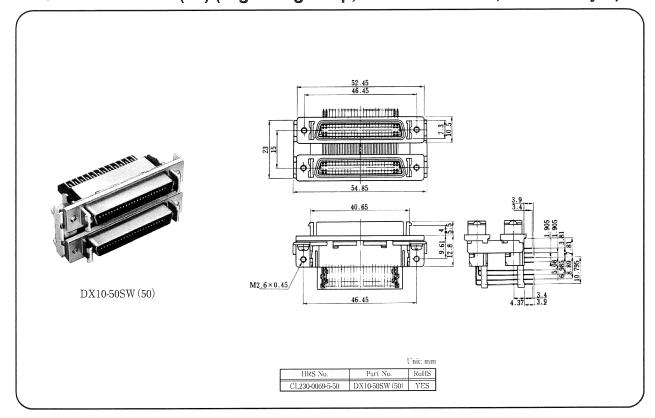
## 3.5 DX20-% %-S (50) (Straight Dip, One Touch Lock)



# 3.6 DX20A- \*\* \*-S (50) (Straight Dip, Screw Lock)

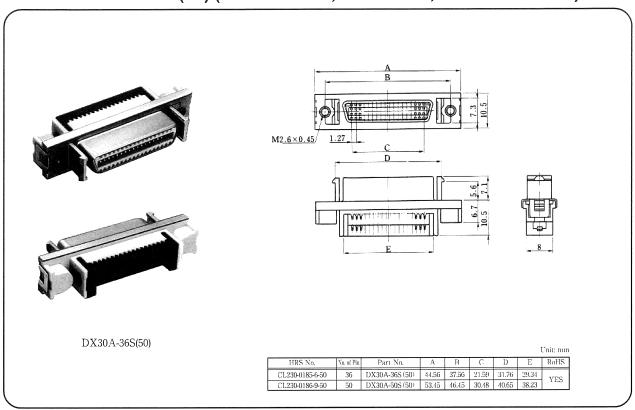


# 3.7 DX10-50-SW (50) (Right Angle Dip, One Touch Lock, Double Layer)

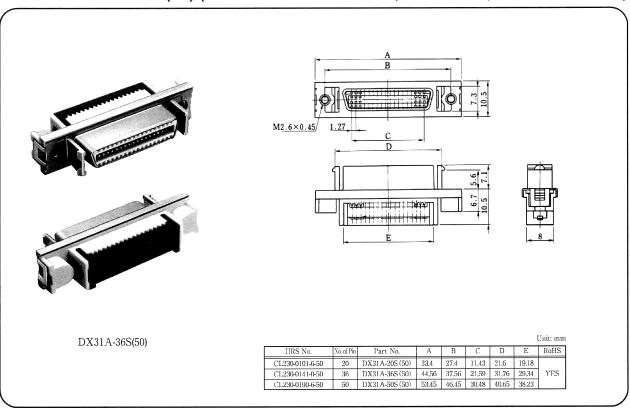


#### 4. Panel mount Cable to Cable Connector

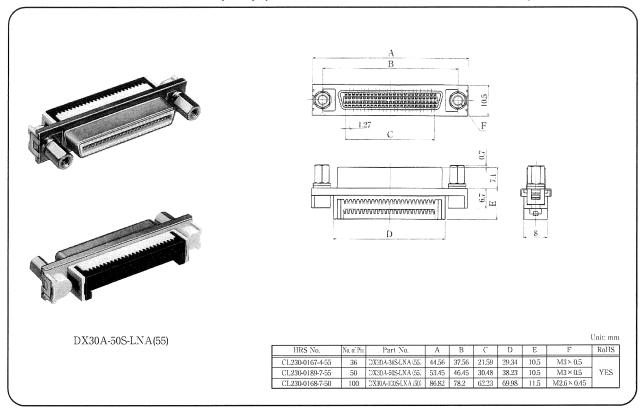
#### 4.1 DX30A-X X-S (50) (Discrete Wire, Thin Cable, One Touch Lock)



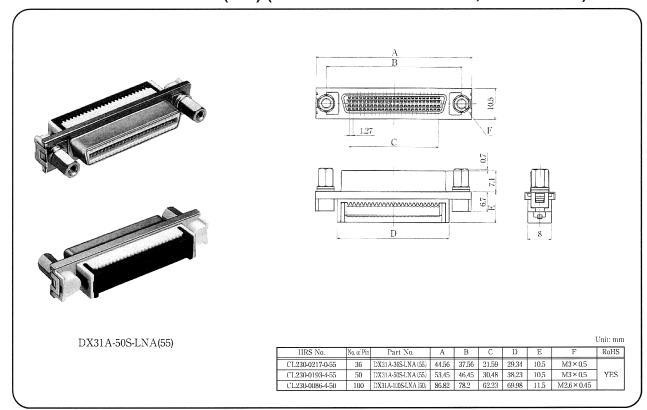
## 4.2 DX31A- \* \* -S (50) (Discrete Wire Laminated, Fine Cable, One Touch Lock)



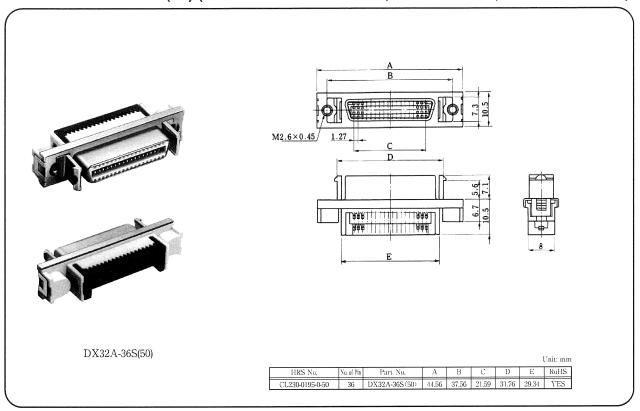
# 4.3 DX30A-% %S-LNA (5%) (Discrete Thin Wire, Screw Lock)



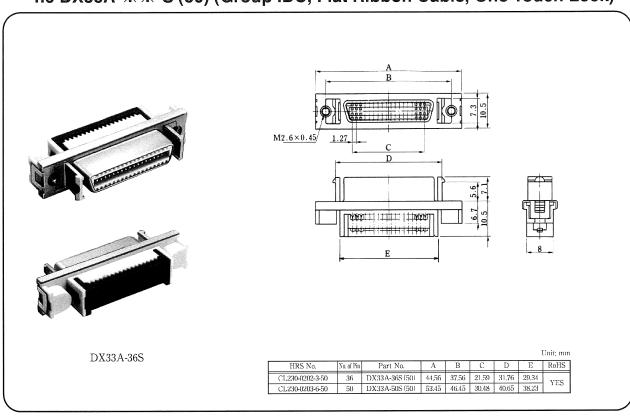
# 4.4 DX31A-% %S-LNA (5%) (Discrete Wire Laminated, Screw Lock)



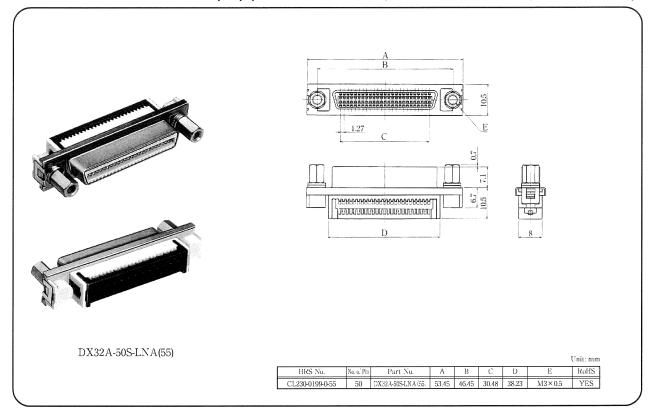
# 4.5 DX32A- \*\* \*-S (50) (Discrete Wire Laminated, Ribbon Cable, One Touch Lock)



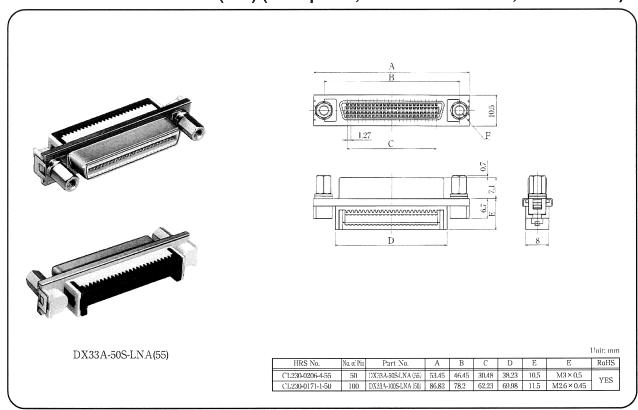
# 4.6 DX33A- \*\* \*- S (50) (Group IDC, Flat Ribbon Cable, One Touch Lock)



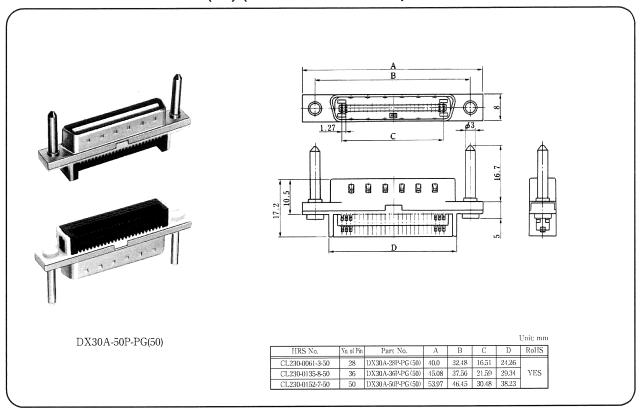
# 4.7 DX32A- \* \*S-LNA (55) (Loose Piece IDC, Slit Ribbon Cable, Screw Lock)



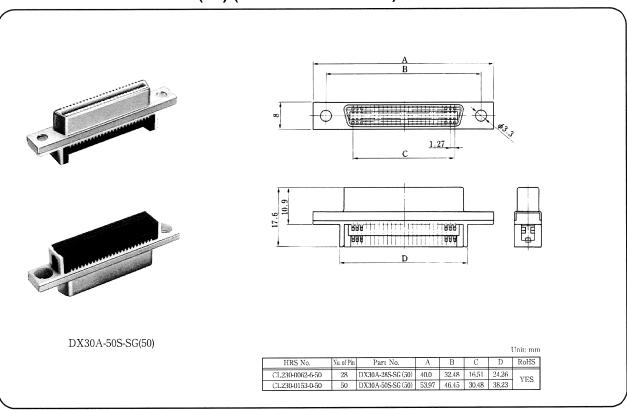
# 4.8 DX33A-% %S-LNA (5%) (Group IDC, Flat Ribbon Cable, Screw Lock)



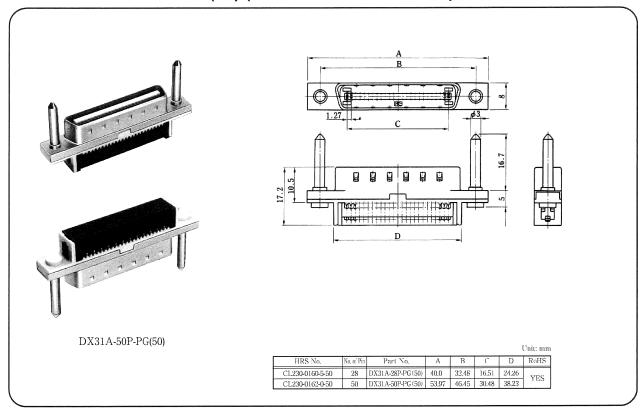
# 5. Plug In Connector 5.1 DX30A-※※P-PG (50) (Discrete Thin Wire)



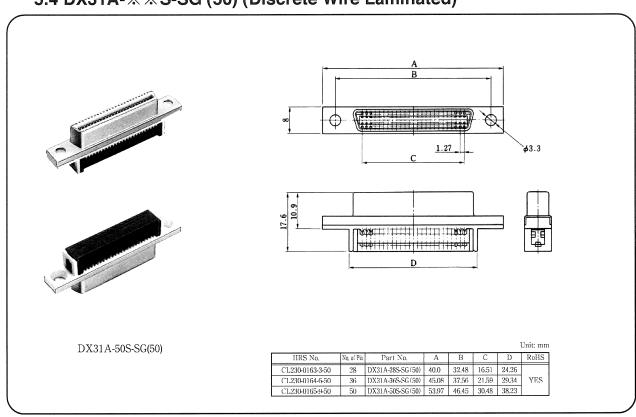
# 5.2 DX30A- \* S-SG (50) (Discrete Thin Wire)



# 5.3 DX31A-% %P-PG (50) (Discrete WireLaminated)

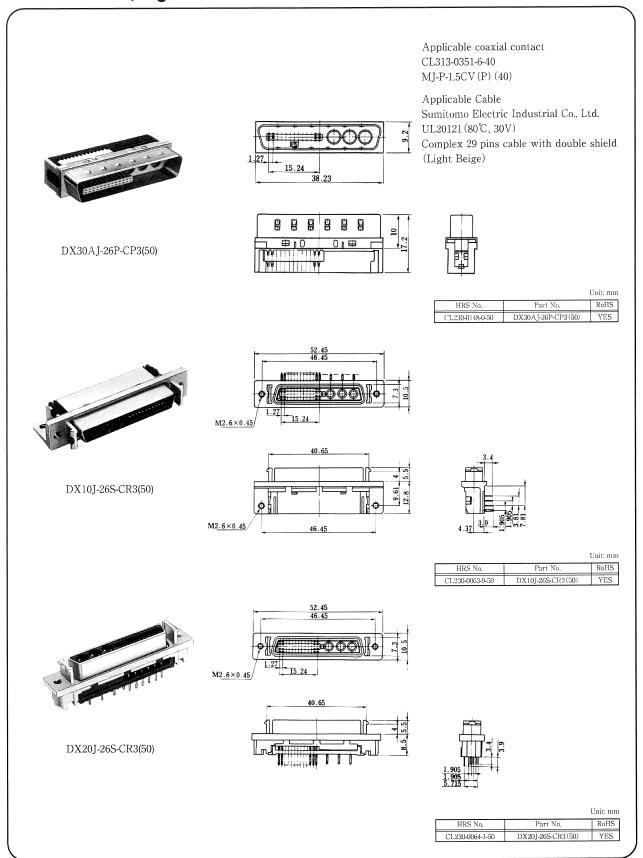


## 5.4 DX31A-% %S-SG (50) (Discrete Wire Laminated)



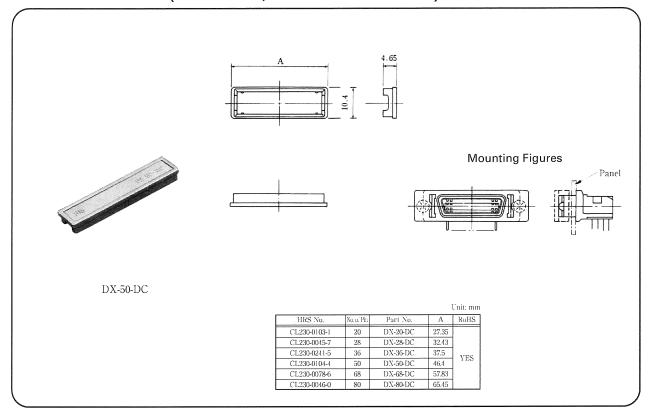
#### 7. Co-axial Connector

## 7.1 Co-axial, Signal Terminal Connector

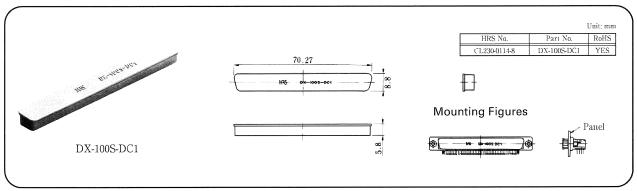


#### 9. Dust Cap

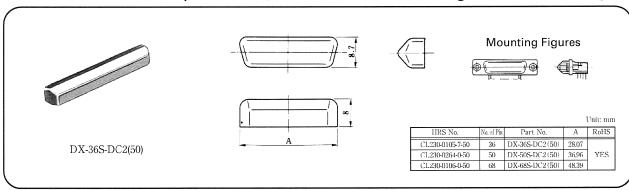
# 9.1 DX- \*\* -DC (Semi-Hard, for One Touch Lock)



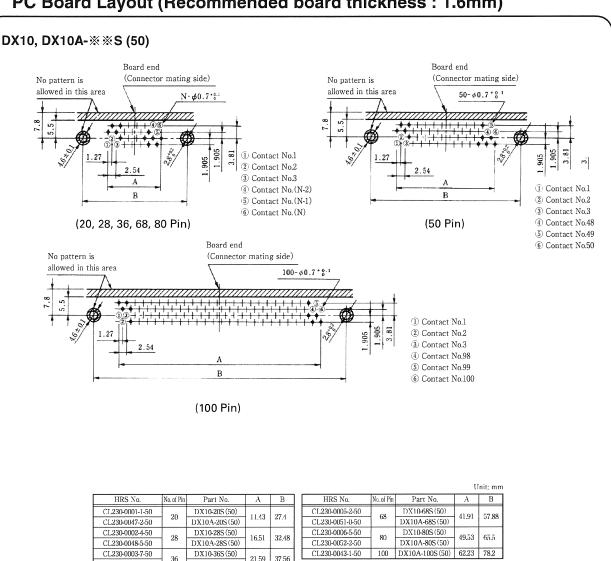
# 9.2 DX-100S-DC1 (Semi-Hard, for One-Touch Locking, for Screw Lock)



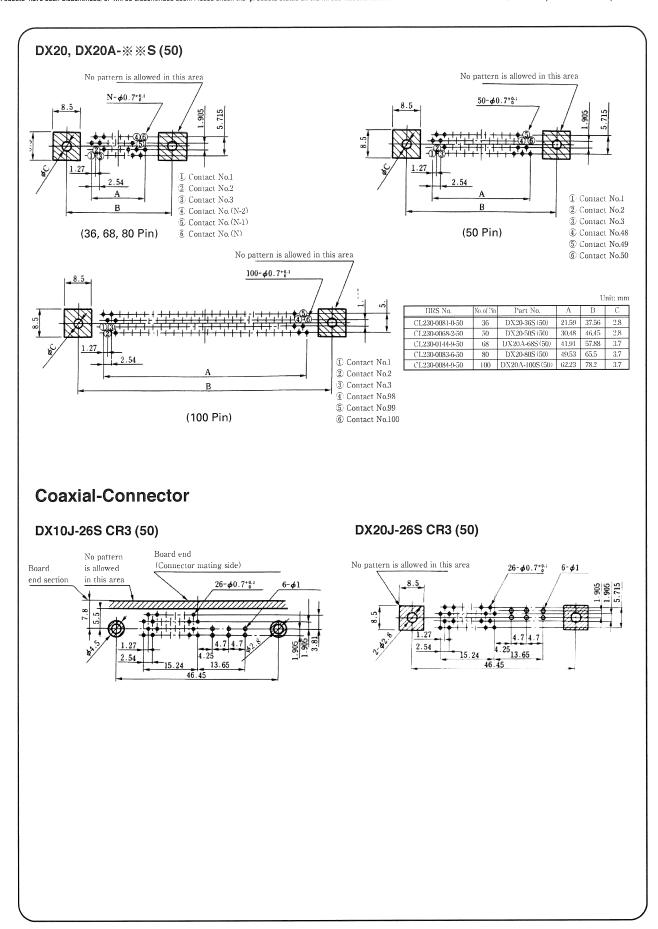
# 9.3 DX- \*\* S-DC2 (Soft-Hard, for One-Touch Locking, for Screw Lock)

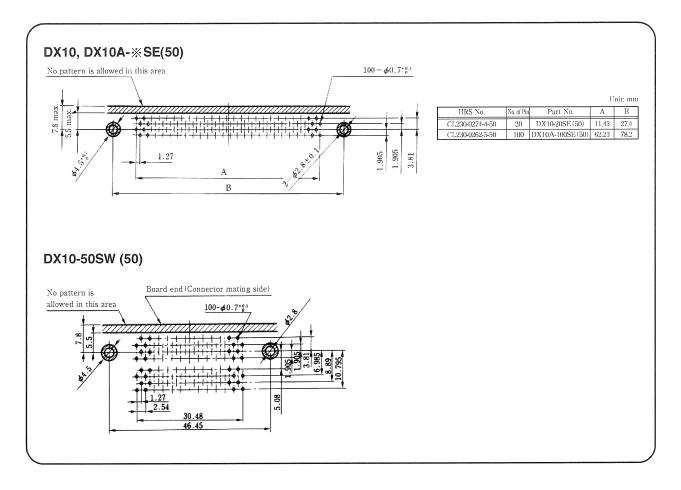


## PC Board Layout (Recommended board thickness: 1.6mm)

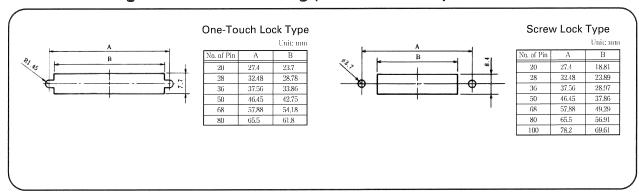


HRS No.	No. of Pin	Part No.	A	В	
CL230-0001-1-50	20	DX10-20S (50)	11.43	27.4	
CL230-0047-2-50	20	DX10A-20S (50)	11.43	21.4	
CL230-0002-4-50	28	DX10-28S (50)	1651	32.48	
CL230-0048-5-50	46	DX10.A-28S (50)	16.51	34.40	
CL230-0003-7-50	36	DX10-36S (50)	21.59	37.56	
CL230-0049-8-50	36	DX10A-36S (50)	21.59	37.30	
CL230-0004-0-50	50	DX10-50S (50)	30.48	46.45	
CL230-0050-7-50	30	DX10A-50S (50)	30.46	40.40	

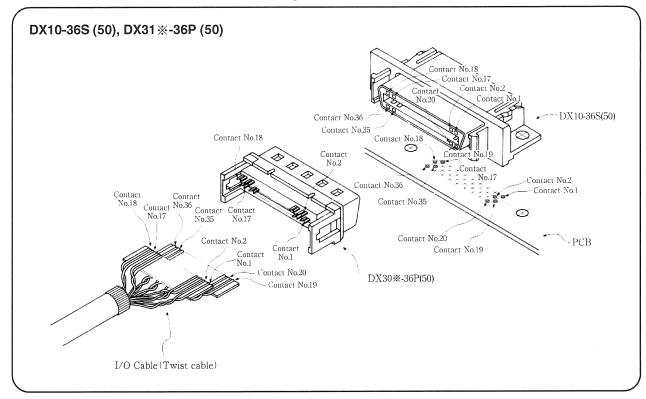




#### Panel-Fitting Dimensional Drawing (Recommended panel thickness:



#### **DX Connector Distribution Diagram**



#### **Connecting Method (for Discrete Cable)**

#### Connecting Tools



**DX30 Cable Distribution Jig** 

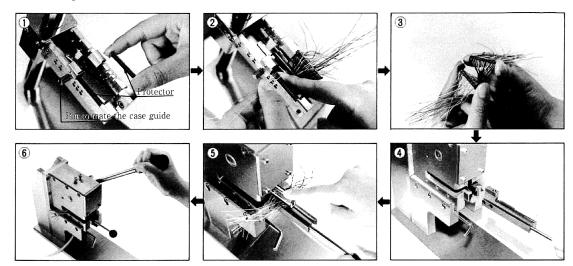


Guide Plate DX30-\*\*\*GP \*\*\*(20, 28, 36, 50, 68, 80)



**Connecting Press DX30-HR** 

#### Connecting Order



- 1. Mate the case guide of the distribution jig to the number of pins of the connector and set the protector.
- 2. Clamp the cable and distribute every one of the signal wires.
- 3. Combine the two protectors and temporarily fix it to the connector unit.
- 4. Set the guide plate (DX30-\*\*GP) to the connecting press DX30-HP.
- 5. Set the connector to the guide plate and insert the guide plate in the connecting press DX30-HP.
- 6. Depress the handle. (With this the connection and the cutting of a remaining part of cable have been completed)

#### **Connecting Method (for Discrete Cable)**

#### Connecting Tools



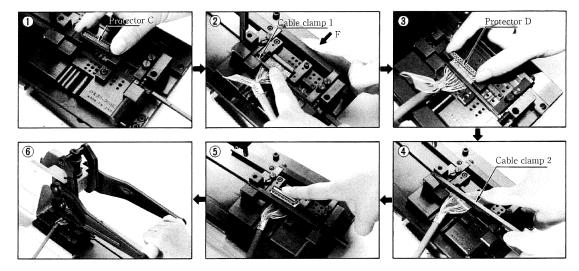
Connecting Press Hi-Flex Connecting Press



Guide Plate DX31-2080GP (For 20P~80P) DX31-100GP (For 100P)

Note: Comes with a pressure block

#### Connecting Order



- 1. Set the guide plate in the connecting press and set the Protector C in the guide plate.
- 2. Set the first cable. (Fix the first cable with the cable clamp 1 of the guide plate)
- 3. Combine the Protector D with the Protector C.
- 4. Set the second cable. (With the cable clamp 2 of the guide plate, fix the second cable)
- 5. Plate the connector body over the protector.
- Shift the side base to the position to crimp and depress the handle. (With this the connection has been completed)

## **List of Connecting jigs and Accessories**

#### **Plug Connector**

Cable	Connector Name	Wire Configuration	Crimping	(Connection)
Cable	Connector Name	wire Configuration	Crimpii Press  Connecting press DX30-HP CL902-0117-4  Hi-Flex Connecting press HHP-502 CL550-0082-2	Guide plate
	DX30-20P (50) DX30A-20P (50)			DX30-20GP CL902-0118-7
	DX30-28P (50) DX30A-28P (50)			DX30-26GP CL902-0119-0
	DX30-36P (50) DX30A-36P (50)	By hand		DX30-36GP CL902-0120-9
I/O Cable (Discrete wire)	DX30-50P (50) DX30A-50P (50)	DX30 Cable distribution JIG	DX30-HP	DX30-50GP CL902-0121-1
	DX30-68P (50) DX30A-68P (50)	CL902-0116-1	CL902-0117-4	DX30-68GP CL902-0122-4
	DX30-80P (50) DX30A-80P (50)			DX30-80GP CL902-0123-7
	DX30-100P (50) DX30A-100P (50)			DX30-100GP CL902-2031-1
	DX31-20P (50) DX31A-20P (50)			
	DX31-28P (50) DX31 A-28P (50)			DX31-2080GPA
	DX31-36P (50) DX31A-36P (50)	_		(Common to 20P- 80P)
I/O Cable (1.27mm pitch	DX31-50P (50) DX31 A-50P (50)		_	CL902-2003-6 (Comes with
fusion welding cable)	DX31-68P (50) DX31A-68P (50)			pressure block)
	DX31-80P (50) DX31A-80P (50)			
	DX31-100P (50) DX31A-100P (50)			DX31-100GPA CL902-0125-2 (100pin private)
				(Comes with pressure bloc

#### **Extension Connector**

Cable	Connector Name	III. • C • • £ · · · · • ; · ·	Crimping (	Connection)
Cable	Connector Name	Wire Configuration  Press  By hand DX30 Cable distribution JIG CL902-0116-1  DX30-HP CL902-0229-8  CL902-0229-8  Hi-Flex Connecting press HHP-502 CL550-0082-2	Press	Guide plate
	DX30A-20S (50)			DX30-20SGP CL902-0292-4
I/O Cable (Discrete wire)	DX30A-36S (50) DX32A-36S (50)		DYSUTID	DX30-36SGP CL902-0234-8
Ribbon Cable (IDC)	DX30A-50S (50) DX30A-50S-LNA (55) DX32A-50S-LNA (55)	Cable distribution JIG		DX30-50SGP CL902-0235-0
	DX30A-100S-LNA (50)	CL902-0116-1		DX30-100SGP CL902-0230-7
I/O Cable (1.27mm pitch fusion welding cable) Ribbon Cable	DX31A-20S (50)  DX31A-36S (50)  DX31A-36S-LNA (55)  DX33A-36S (50)  DX31A-50S (50)  DX31A-50S-LNA (55)  DX33A-50S (50)  DX33A-50S-LNA (55)  DX33A-100S-LNA (50)  DX33A-100S-LNA (50)		press HHP-502	DX31-2080SGPA (Common to 20P-80P) CL902-2013-0 (Comes with pressure block)  DX31-100SGPA CL902-0246-7 (100pin private)
				(Comes with pressure block)

Note : Please assembly cable without lock screws.(LNA type)

#### Plug in Connector

0.11	(2 ) N	Mr. C. E	Crin	nping	Remaining	part cutting
Cable	Connector Name	Wire Configuration	Press	Unit	Press	Unit
	DX30A-28P-PG (50)					
	DX30A-36P-PG (50)			DX30A-PG-GPT		
	DX30A-50P-PG (50)					
I/O Cable (Discrete wire)	DX30A-28S-SG (50)	By hand DX30	DX30AM-HP1		DX30AM-HP1	
		Cable distribution JIG	CL902-0210-0		CL902-0210-0	DX30A-PSG-C
	DX30A-50S-SG (50)	CL902-0116-1	CD302 0210 0	DX30A-SG-GPT		
0.11	Cable Connector Name		Crimping			
Cable	Connector Name	Wire Configuration	Press	Guide plate	Pressure block	
	DX31A-28P-PG (50)				DWOLA DC DD	
I/O Cable			Hi-Flex Connecting		DX31A-PG-PB CL902-2025-9	
(1.27mm pitch	DX31A-50P-PG (50)		press	DX31-PSG-GPA	C1505-2025-3	
fusion welding	DX31A-28S-SG (50)		HHP-502	CL902-2024-6	DX31A-SG-PB	
cable)	DX31A-36S-SG (50)		CL550-0082-2		CL902-2026-1	
	DX31A-50S-SG (50)				013002 2020-1	

#### **Coaxial Connector**

Cable	Connect	or Name	Coaxial Connector Con		nection	Plug Connector Connection			ection	
Plug	Plug	Plug Coaxial		Inner Conductor Crimping Shell		Wire	Crimping		Shield case	Hood
I/O Cable	Connector	Signal Connector	Crimping machine	Applicator	Contact Caulking	Configuration	Press	Guide plate	fixing	insertion
Coaxial Complex	DX30AJ- 26P- CP3 (50)	MJ-P- 1.5CV(P)(40)		AP-105-MJ- 1.5CV	MJ-P- 1.5CV (P)-	DX30J- CAT (01)	DX30-HP CL902-0117-4	DX30J-26GP	DX30J-CCT (01)	DX30J-НРТ
Cable			0005-4	CL901- 3001-0	CCT(01)		_			

# **Mouser Electronics**

**Authorized Distributor** 

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#### Hirose Electric:

DX30-28P(50) DX31-36P(50) DX-80-DC DX10A-20S(58) DX30A-28P-PG(50) DX40-20P(55) DX40-28P(55)

DX40-36P(55) DX40-50P(55) DX40-68P(55) DX40-80P(55) DX40-100P(55) DX30A-36P-PG(50) DX-LN(E)(53) DX-50-CV3(01) DX30A-50P-PG(50) DX30A-50S-SG(50) DX31A-28P-PG(50) DX31A-50P-PG(50) DX31A-28S-SG(50)

DX31A-36S-SG(50) DX31A-50S-SG(50) DX33A-36S-LNA(50) DX33A-36S-LNA(55) DX30A-50S-LNA(50) DX32A-50S-LNA(50) DX31A-36S-LNA(50) DX-68-CV4 DX10A-68SW1(50) DX-68-CV7(02) DX-LN(F)(50) DX-50-CV7

DX10G-100S(50) DX70M-50P(TB)-CV DX40KM-14P(50) DX30-50SGP DX30-36SGP DX31-2080GP DX30-50GP

DX30-100GP DX31A-PSG-GPA DX30-80GP DX31A-100SGPA DX31A-PG-PB DX30-100SGP DX31-100GPA

DX31-2080SGPA DX30-68GP DX30-20SGP DX30-36GP DX31-2080GPA DX30-20GP DX31-SG-PB

DX30J-CCT(61) DX30J-CCT(62) DX30J-CCT(01) DX30-HP-A DX30-HP(61) DX30J-CCT DX30-SHP