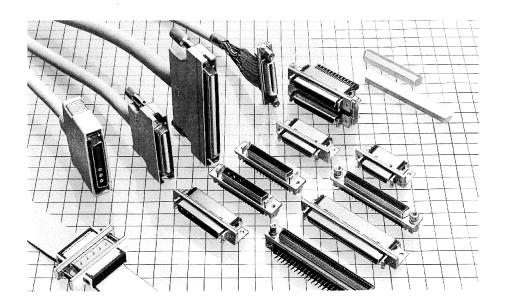
# DX SERIES HIGH-DENSITY I/O CONNECTORS

#### 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	$50 \mathrm{m}\Omega$ 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 #30 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

DX	10	<b>※</b>	*	 50	S	_	$\times$	(50)
	T		T		T		T	
(1)	(2)	(3)	(5)	(6)	(7)		(8)	(12)

#### 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

P: 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

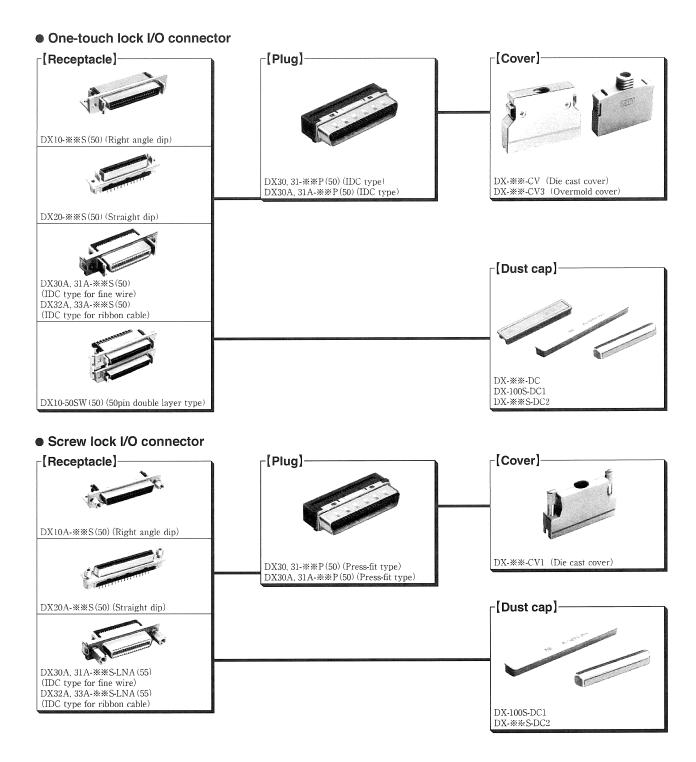
(11) Shell size

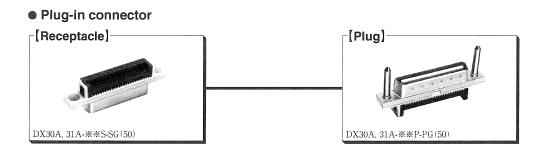
No.symbol: 50 pins

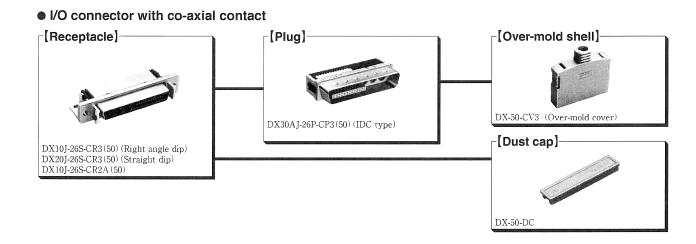
A : 20 pins (12) Specifications Content

(\*\*): Individual specifications

#### **DX Series variations**



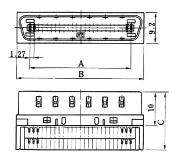




# 1. IDC Plug Connector 1.1 DX30, DX30A-% %P (50)



DX30-50P(50)







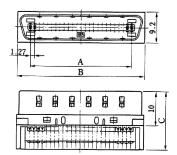
DX30A-50P(50)

							Unit: mm
HRS No.	No. of Pin	Part No. Applicable cab		А	В	С	RoHS
CL230-0008-0-50	- 20	DX30-20P (50)	AWG#30	11.43	19.18	17.2	
CL230-0022-1-50	20	DX30A-20P(50)	AWG#28	11.45	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	24.26	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	23.04	17.5	YES
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	30.40			
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	49.00	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	45.55	37.28	17.2	
CL230-0014-3-50	100	DX30-100P (50)	AWG#30	62.23	69.98	18.2	
CL230-0028-8-50	100	DX30A-100P(50)	A W G # 28	02.23 09	0:2:26	10.2	

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



DX31-50P(50)





Unit; mm

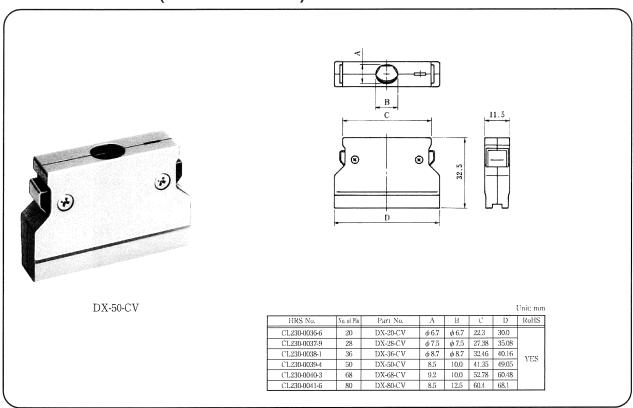


DX31A-50P(50)

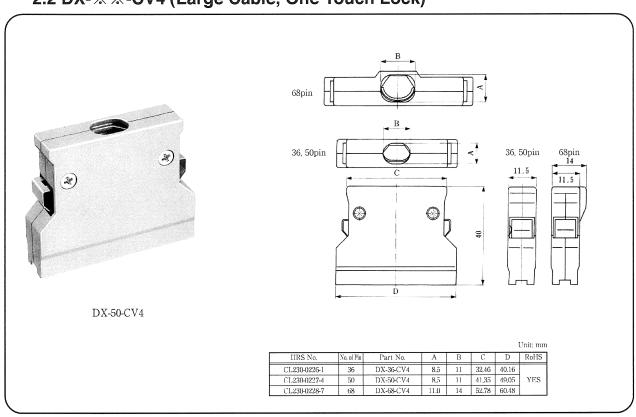
HRS No.	No. of Pin	Part No.	Applicable cable	A	В	С	RoHS
CL230-0015-6-50	20	DX31-20P (50)	AWG#30	11.43	19.18	17.2	
CL230-0029-0-50	20	DX31A-20P (50)	AWG#28	11.45	19.10	17.2	
CL230-0016-9-50	28	DX31-28P (50)	AWG#30	16.51	24.26	172	
CL230-0030-0-50	20)	DX31A-28P(50)	AWG#28	10.51	24.20	17.2	
CL230-0017-1-50	36	DX31-36P (50)	AWG#30	21.59	29.34	17.2	
CL230-0031-2-50	30	DX31A-36P (50)	AWG#28	21.00	29.34	17.2	
CL230-0018-4-50	50	DX31-50P (50)	AWG#30	30.48	38.23	17.2	YES
CL230-0032-5-50	- 50	DX31A-50P (50)	AWG#28	50.46	30.23	17.2	165
CL230-0019-7-50	- 68	DX31-68P (50)	AWG#30	41.91	49.66	17.2	
CL230-0033-8-50	UO	DX31A-68P (50)	AWG#28	41,51	49.00	11.2	
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	57.48	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	09.96	10.2	

#### 2. Shell

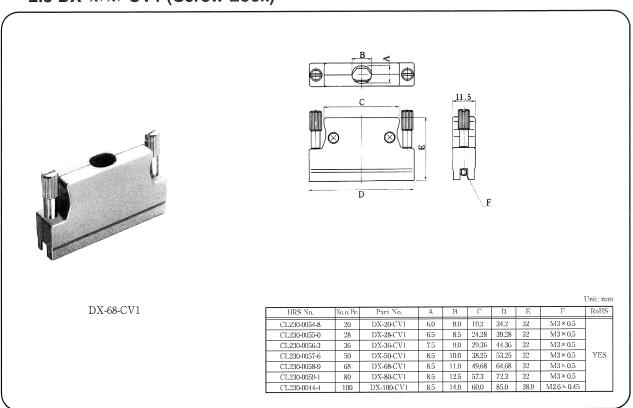
# 2.1 DX-% %-CV (One Touch Lock)



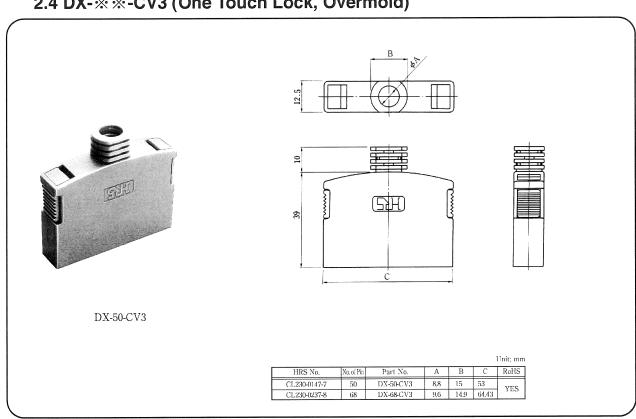
# 2.2 DX- \*\* \*\*-CV4 (Large Cable, One Touch Lock)



# 2.3 DX-※ \*\*-CV1 (Screw Lock)

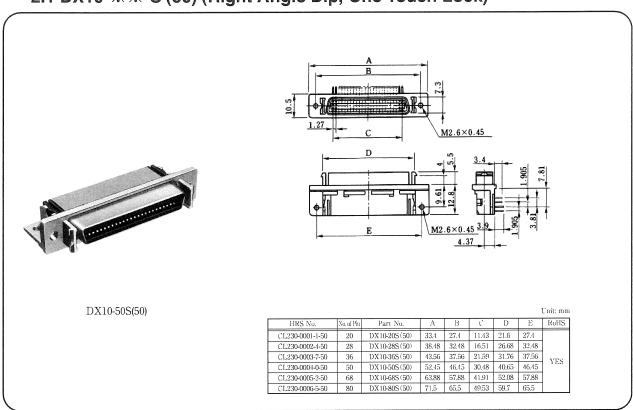


# 2.4 DX-% %-CV3 (One Touch Lock, Overmold)

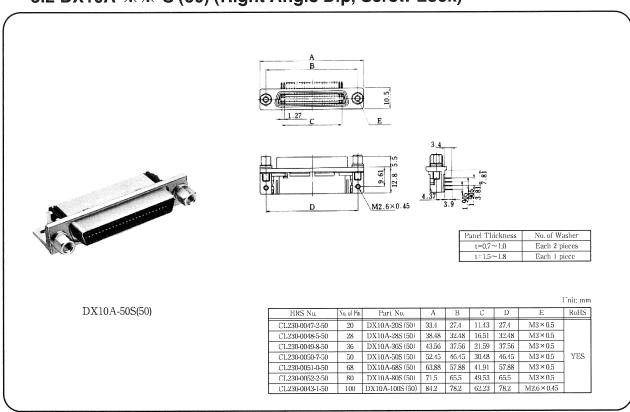


#### 3. Receptacle

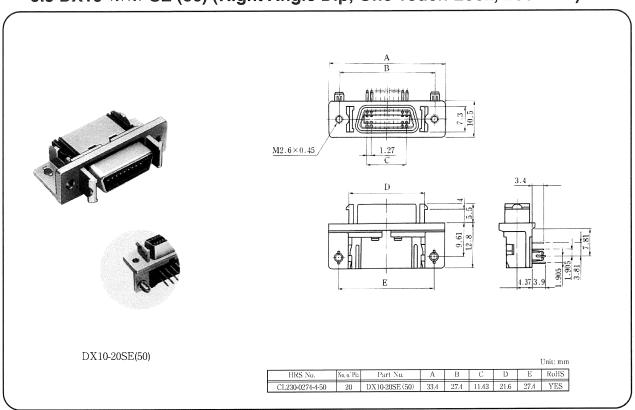
# 2.1 DX10-※ ※-S (50) (Right Angle Dip, One Touch Lock)



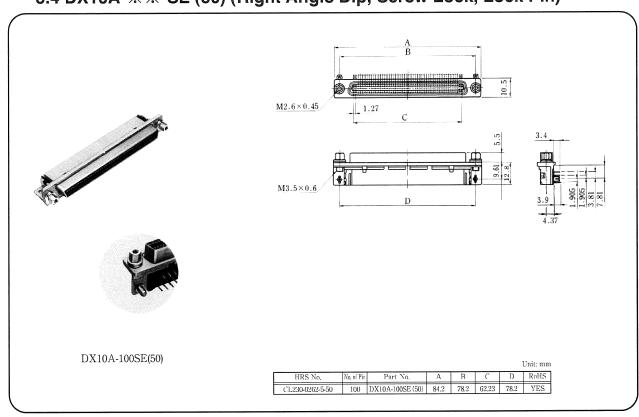
## 3.2 DX10A-% %-S (50) (Right Angle Dip, Screw Lock)



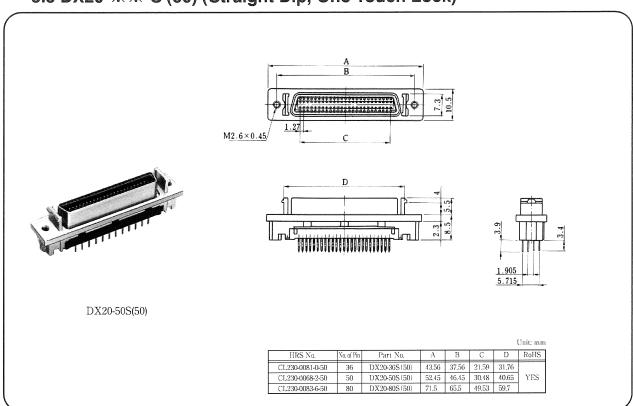
# 3.3 DX10-% %-SE (50) (Right Angle Dip, One Touch Lock, Lock Pin)



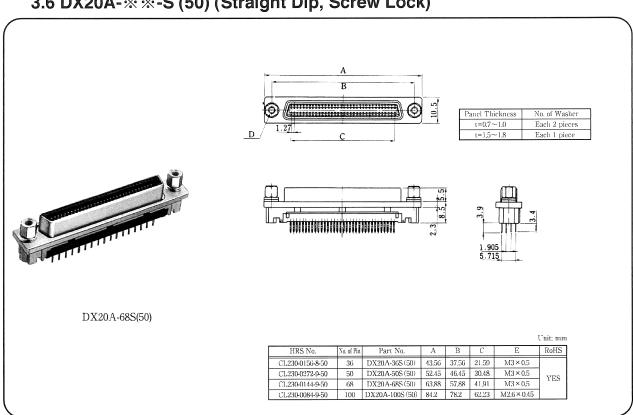
# 3.4 DX10A- \*\* -SE (50) (Right Angle Dip, Screw Lock, Lock Pin)



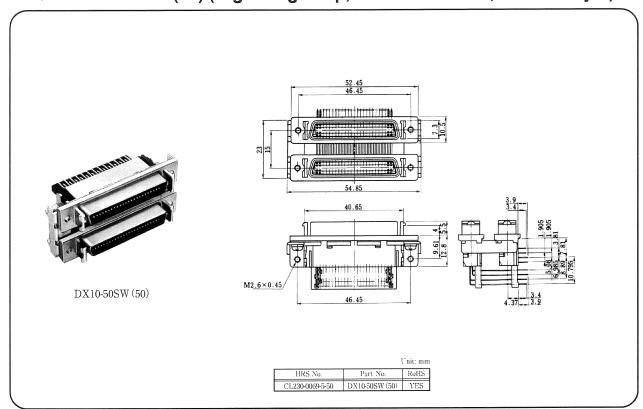
# 3.5 DX20- \*\* -S (50) (Straight Dip, One Touch Lock)



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

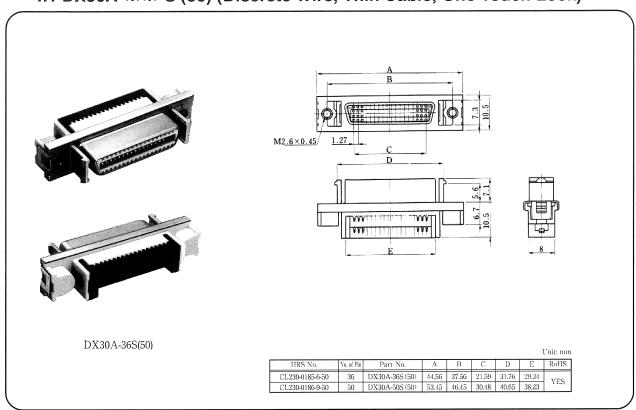


# 3.7 DX10-50-SW (50) (Right Angle Dip, One Touch Lock, Double Layer)

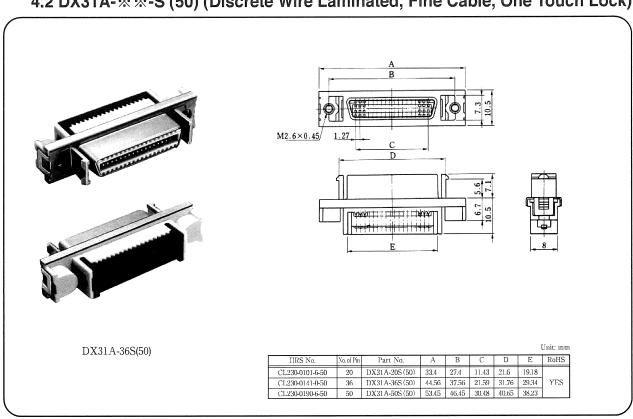


#### 4. Panel mount Cable to Cable Connector

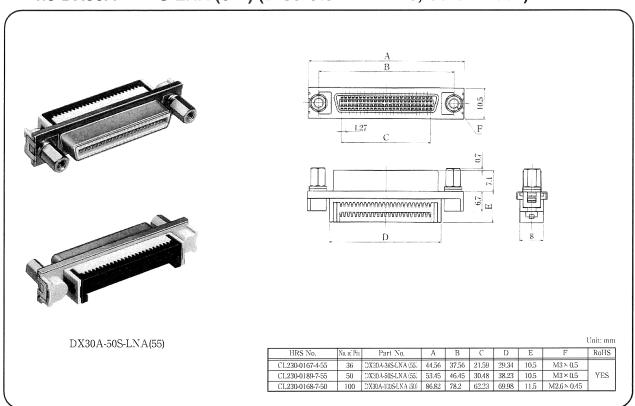
#### 4.1 DX30A-X X-S (50) (Discrete Wire, Thin Cable, One Touch Lock)



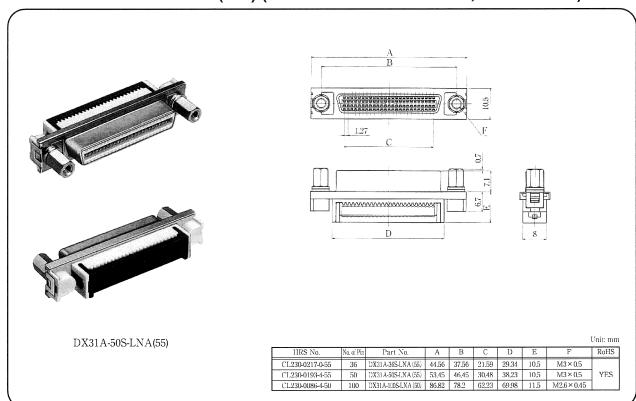
## 4.2 DX31A- \*\* \*\*-S (50) (Discrete Wire Laminated, Fine Cable, One Touch Lock)



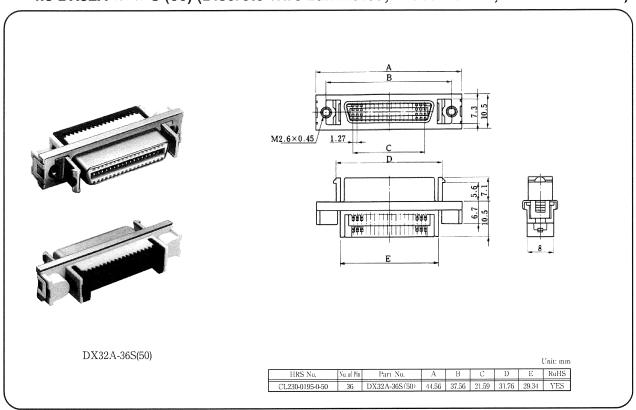
# 4.3 DX30A-% %S-LNA (5%) (Discrete Thin Wire, Screw Lock)



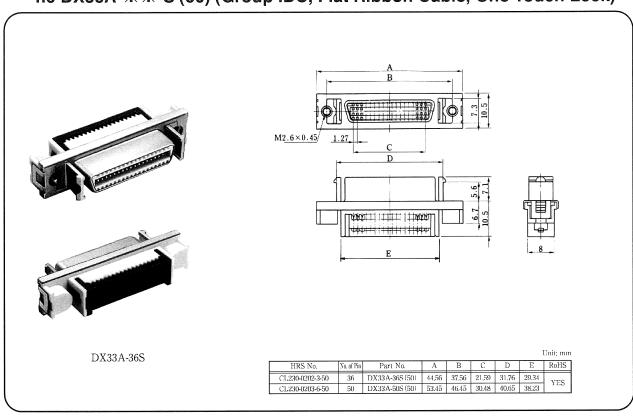
# 4.4 DX31A-% %S-LNA (5%) (Discrete Wire Laminated, Screw Lock)



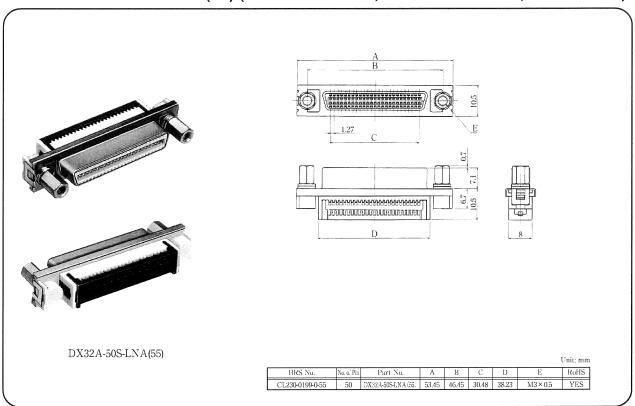
# 4.5 DX32A- \*\* \*\*-S (50) (Discrete Wire Laminated, Ribbon Cable, One Touch Lock)



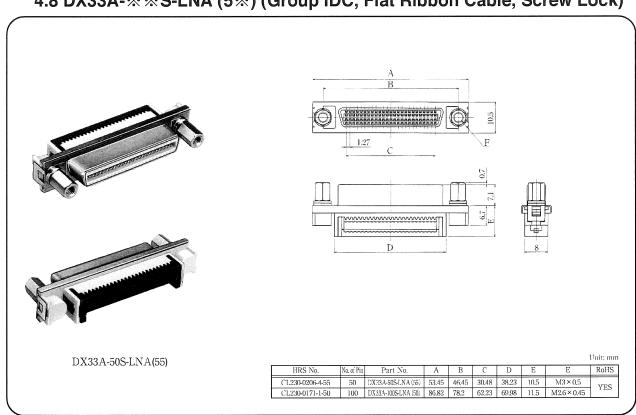
# 4.6 DX33A-% %-S (50) (Group IDC, Flat Ribbon Cable, One Touch Lock)



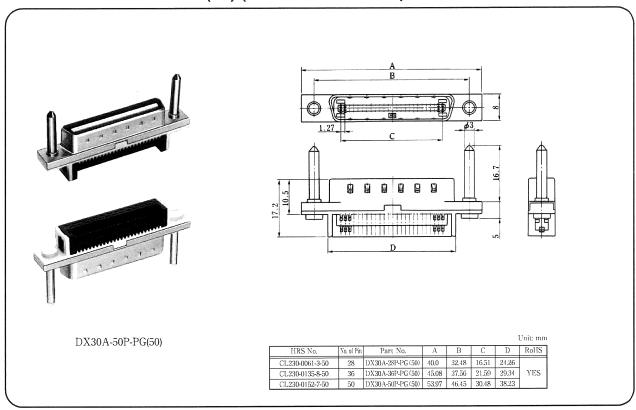
# 4.7 DX32A- \* \*S-LNA (55) (Loose Piece IDC, Slit Ribbon Cable, Screw Lock)



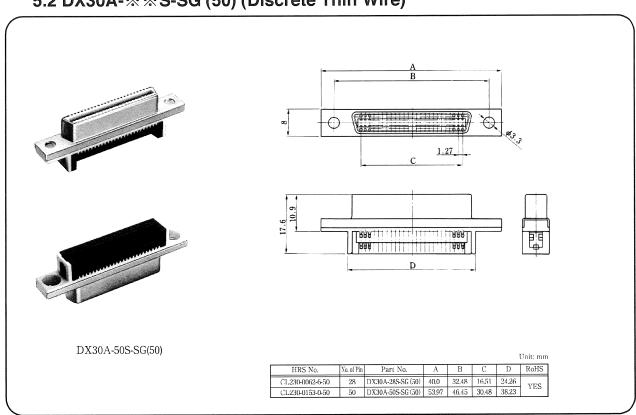
# 4.8 DX33A-% %S-LNA (5%) (Group IDC, Flat Ribbon Cable, Screw Lock)



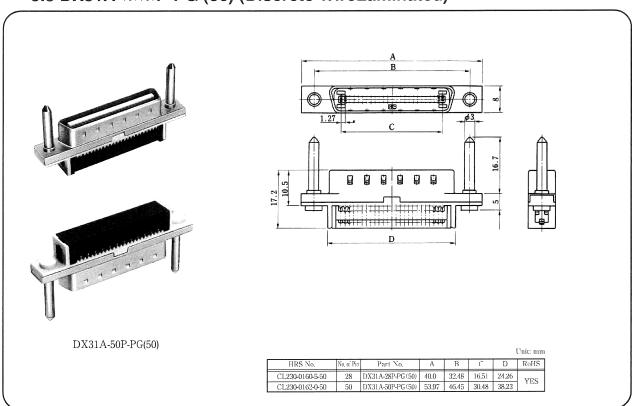
# 5. Plug In Connector 5.1 DX30A-※※P-PG (50) (Discrete Thin Wire)



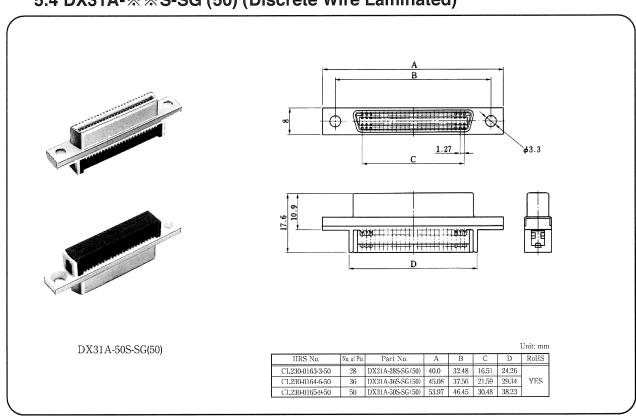
# 5.2 DX30A- \* S-SG (50) (Discrete Thin Wire)



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

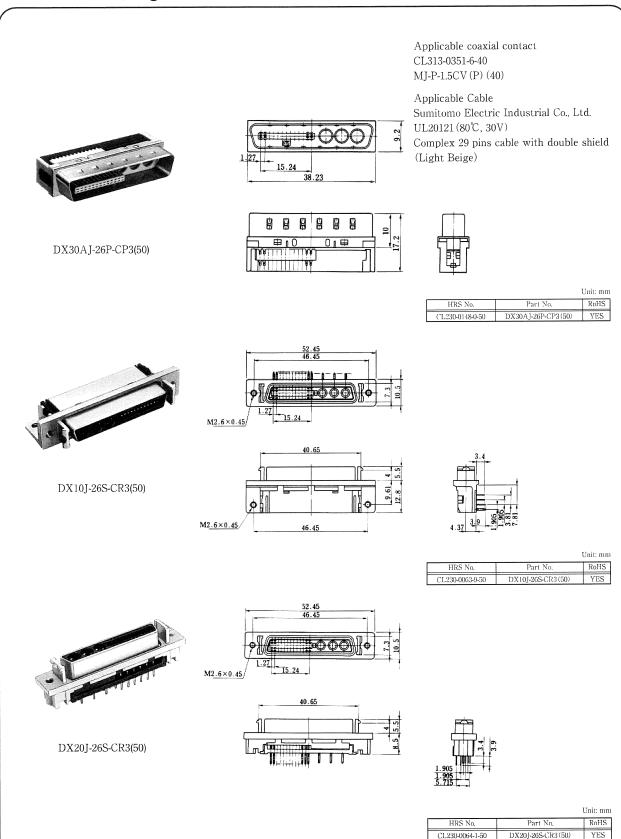


## 5.4 DX31A-% %S-SG (50) (Discrete Wire Laminated)



#### 7. Co-axial Connector

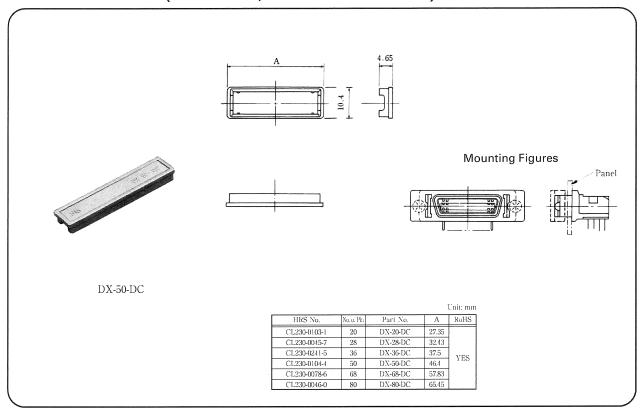
# 7.1 Co-axial, Signal Terminal Connector



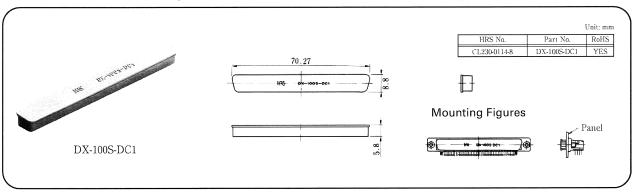
CL230-0064-1-50

#### 9. Dust Cap

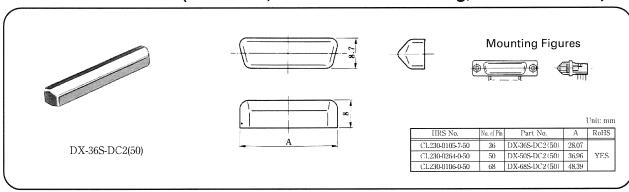
# 9.1 DX- \*\* -DC (Semi-Hard, for One Touch Lock)



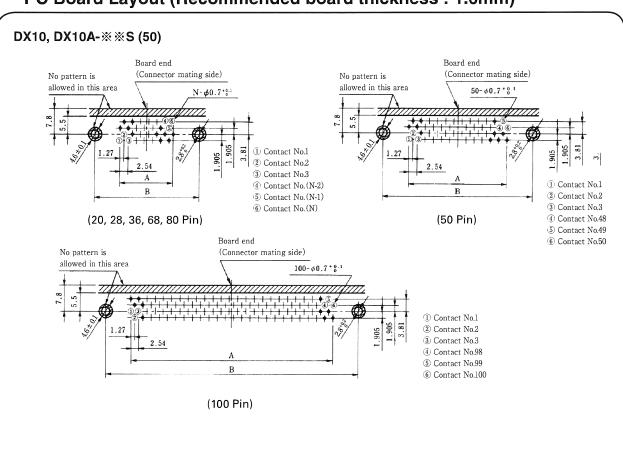
## 9.2 DX-100S-DC1 (Semi-Hard, for One-Touch Locking, for Screw Lock)



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

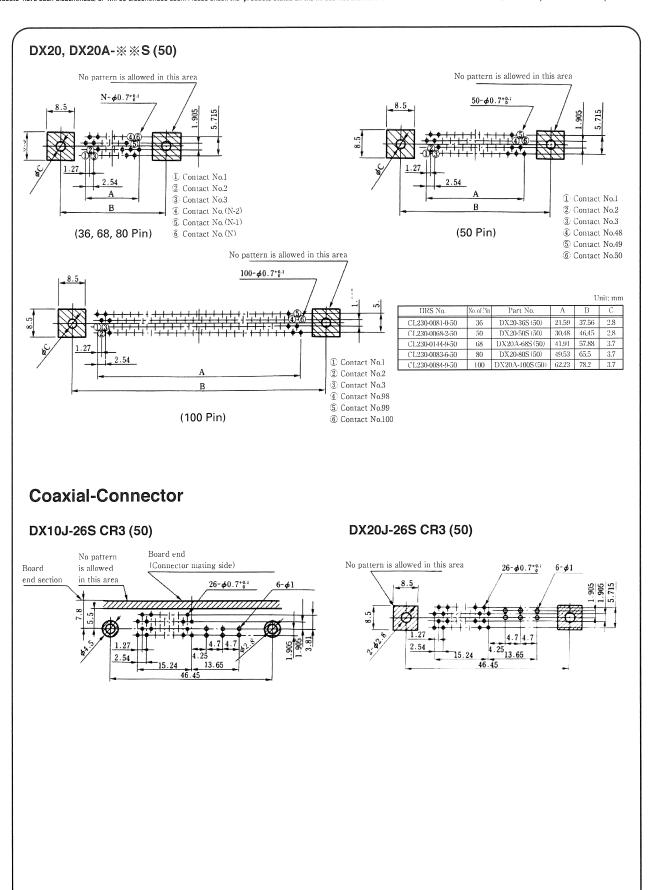


## PC Board Layout (Recommended board thickness: 1.6mm)



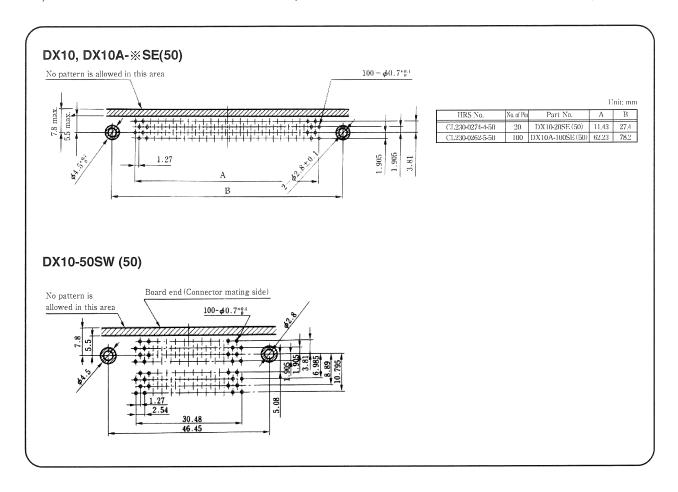
No. of Pin	Part No.	A	В	
20	DX10-20S (50)	11.49	27.4	
20	DX10A-20S (50)	11.43	21.4	
20	DX10-28S (50)	16.51	32.48	
20	DX10.A-28S (50)	10.51	32.40	
26	DX10-36S (50)	21.50	37.56	
30	DX10A-36S (50)	21.09	37.30	
50	DX10-50S (50)	20.49	46.45	
50	DX10A-50S (50)	30.40	40.43	
	20 28 36 50	20 DX10-20S (50) DX10-20S (50) DX10-2-20S (50) DX10-2-2-2-5 (50) DX10-2-2-5 (50) DX10-3-3-5 (50) DX10-3-3-5 (50) DX10-5-0-5 (50)	20 DX10-20S (50) DX10-A-20S (50) DX10-A-20S (50) DX10-A-8S (50) DX10-A-36S (50) DX10-A-36S (50) DX10-A-36S (50) DX10-50S (50) DX	

HRS No.	No. of Pin	Part No.	A	В
CL230-0005-2-50	68	DX10-68S (50)	41.91	57.88
CL230-0051-0-50	08	DX10A-68S (50)	41.51	31.00
CL230-0006-5-50	- 80	DX10-80S (50)	49.53	65.5
CL230-0052-2-50	00	DX10A-80S (50)	45.55	00,0
CL230-0043-1-50	100	DX10A-100S (50)	62.23	78.2

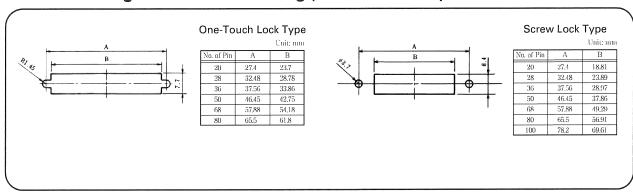


The product information in this catalog is for reference only. Please request the Engineering Drawing for the most current and accurate design information.

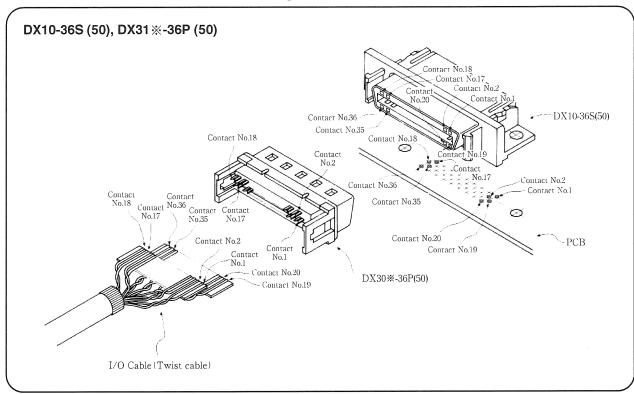
All non-RoHS products have been discontinued, or will be discontinued soon. Please check the products status on the Hirose website RoHS search at www.hirose-connectors.com, or contact your Hirose sales representative.



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



## **DX Connector Distribution Diagram**



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

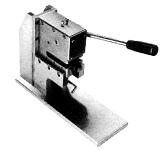
#### Connecting Tools



**DX30 Cable Distribution Jig** 

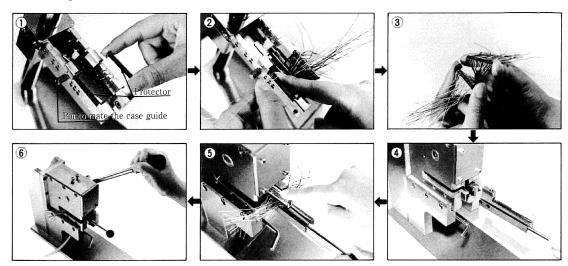


Guide Plate DX30-\*\*\*GP \*\*\*(20, 28, 36, 50, 68, 80)



**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

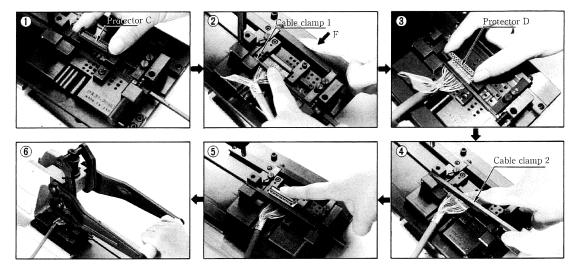


Connecting Press Hi-Flex Connecting Press



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.
- 6. 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**

C-11-	CN	Wine Confirmation	Crimping	g (Connection)
Cable	Connector Name	Wire Configuration	Press	Guide plate
I/O Cable (Discrete wire)	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
	DX30-50P (50) DX30A-50P (50)	DX30 Cable distribution JIG	Connecting press 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)		Hi-Flex Connecting	CL902-2003-6 (Comes with
fusion welding cable)	DX31-68P (50) DX31A-68P (50)		HHP-502 CL550-0082-2	pressure block)
	DX31-80P (50) DX31A-80P (50)			
	DX31-100P (50) DX31A-100P (50)			DX31-100GPA CL902-0125-2
				(100pin private) (Comes with pressure bl

#### **Extension Connector**

Cable	Connector Name	III. • C • • £ · · · · • ; · ·	Crimping (Connection)			
Cable	Connector Name	Wire Configuration	Press	Guide plate		
	DX30A-20S (50)			DX30-20SGP CL902-0292-4		
I/O Cable (Discrete wire) Ribbon Cable (IDC)	DX30A-36S (50) DX32A-36S (50)	By hand DX30	DX30-HP	DX30-36SGP CL902-0234-8		
	DX30A-50S (50) DX30A-50S-LNA (55) DX32A-50S-LNA (55)	Cable distribution JIG CL902-0116-1	CL902-0229-8	DX30-50SGP CL902-0235-0		
	DX30A-100S-LNA (50)			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-50S-LNA (50)  DX31A-100S-LNA (50)		Hi-Flex Connecting press HHP-502 CL550-0082-2	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)  $\,$ 

The product information in this catalog is for reference only. Please request the Engineering Drawing for the most current and accurate design information.

All non-RoHS products have been discontinued, or will be discontinued soon. Please check the products status on the Hirose website RoHS search at www.hirose-connectors.com, or contact your Hirose sales representative.

#### 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-50P-PG (50)			DX30A-PG-GPT		
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		DX30A-SG-GPT		
0.11	0	W. C. F.		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	02302 2020-3	
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)				02002 2020 1	

#### **Coaxial Connector**

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

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