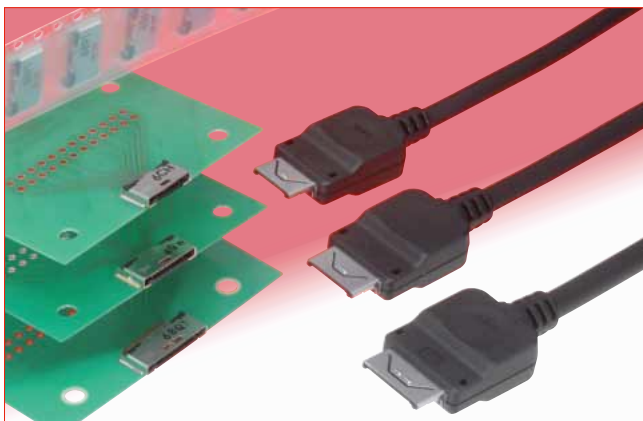


Ultra Low-profile Interface Connectors with 2.0mm Mounting Height

LX Series



Overview

LX Series is a super low profile interface connector with sequential mating design and friction lock, which has been developed for low profile mobile terminals.

This connector features ESD problem prevention in 0.5mm terminal pitch and 2.0mm small and low profile design, which makes it suitable to small mobile devices.

Features

1. Low profile on the PCB

When mounted on the PCB surface the receptacle height is 2.0mm. (Fig.1)

2. Strong Construction

Use of metal shell guarantees that fully mated connectors will withstand 30N max. force applied on the plug in any direction. (Fig.2)

3. High contact reliability

Bellows contact with long mating stroke provides highly reliable mating as well as soft insertion feeling.

Mating durability is up to 5,000 times long.

4. Sequenced contact mating

The protection of the circuit is assured by having the 2 contact at each end of the receptacle are longer by 0.5mm, with electrical wipe of 1.45mm. Location of the circuit protection contacts can be changed as required.

Remaining contacts electrical wipe is 0.95mm.

5. Incorrect Insertion Prevention

Connectors will not be damaged when angled or reverse plug insertion is attempted. (Fig.3)

6. Safety plug release

Plug will release when an excessive pull force is applied to the cable.

7. RoHS Compliant

All materials and substances used to produce this product comply with RoHS standards.

Applications

DSC, Tablet device, thin electronic equipment, mobile phones and other portable devices requiring high durability interface connectors.

Lower Profile



Fig.1

Strong Construction

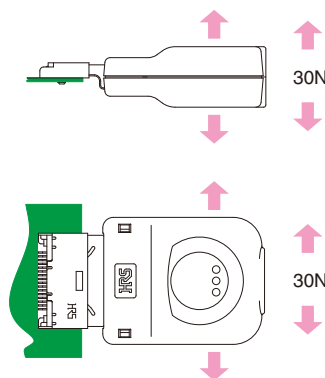


Fig.2

Incorrect insertion prevention

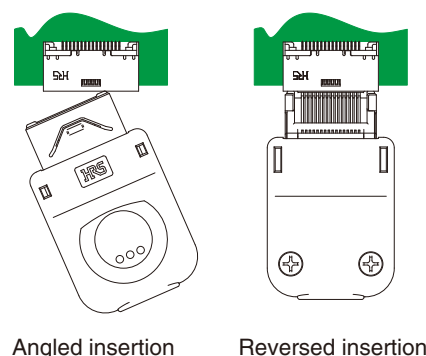


Fig.3

■Product specifications

Ratings	Current rating	0.5A (1A max. can be carried via 2 random contacts)	Operating temperature range : -40°C to +70°C
	Voltage rating	50V AC	Storage temperature range : -55°C to +85°C

Characteristic	Specification	Conditions
1.Contact resistance	70mΩ max.	100mA DC
2.Insulation resistance	1000MΩ min. (dry) 10MΩ min. (high humidity)	100V DC
3.Withstanding voltage	No flashover or insulation breakdown.	250V AC / 1 minute
4.Mating/un-mating forces	Mating : 10N max., un-mating : 4N min.	With corresponding connector.
5. Durability (mating/n-mating)	Amount of change of contact resistance : 20mΩ max.	5,000 times
6. Shock	No electrical discontinuity of 1μ sec. Max. Contact resistance : 20mΩ max.	Acceleration of 490 m/s ² , 11 ms duration, sine half-wave waveform, 3 cycles, 3 axis.
7. Vibration	Contact resistance : 20mΩ max. Insulation resistance : 10MΩ min.	Frequency : 10 to 55 Hz, single amplitude of 0.75mm, acceleration of 98 m/s ² , 2 hours, 3 axis.
8. Temperature cycle	Contact resistance : 20mΩ max. Insulation resistance : 10MΩ min.	Temperature : -55°C → +5°C to +35°C → +85°C → +5°C to +35°C Time : 30 → 2 to 3 → 30 → 2 to 3 min
9. Salt spray	No heavy corrosions	5% water solution at 35°C for 48 hours

■Materials / Finish

●Receptacles

Component	Material	Finish/Color	Remarks
Insulator	Synthetic resin	Black	UL94V-0
Contacts	Copper alloy	Contact area : Gold plated Mounting area : Gold flash plated	———
Shell	Stainless steel	Soldering area : Gold flash plated	———

●Plugs

Component	Material	Finish/Color	Remarks
Insulator	Synthetic resin	Black	UL94V-0
Contacts	Copper alloy	Contact area : Gold plated Termination area : Gold flash plated	———
Metal shield	Stainless steel	———	———
Covers	Synthetic resin	Black	UL94V-0
Strain relief clamp	Copper alloy	———	———
Self tapping screws	Steel	Trivalent black chromate	Screw size: M2

■Product Number Structure

Refer to the chart below when determining the product specifications from the product number.

Please select from the product numbers listed in this catalog when placing orders.

●Receptacles

LX 60 - 16 S

① ② ③ ④

●Plugs

LX 40 - 16 P

① ② ③ ④

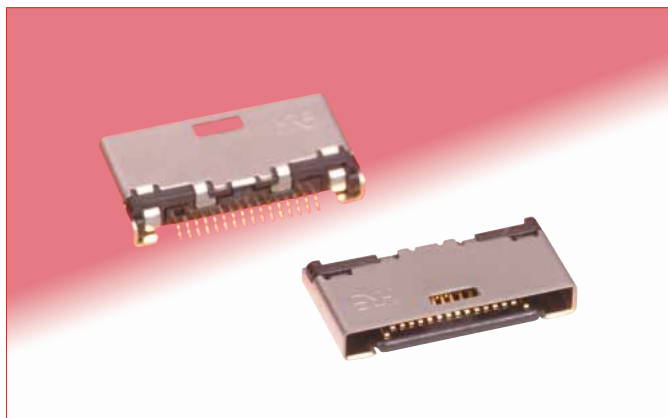
●Bushing

LX 40 - 16 BS(4.5)

① ② ③ ⑤

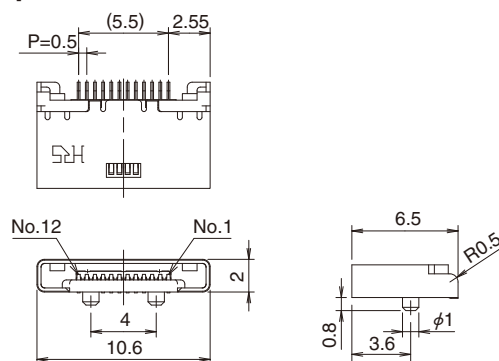
① Series number	: LX
② Termination type	40 : Solder type 60 : Right angle SMT
③ Number of contacts	: 12, 16, 20
④ Contact type	P : Male contact (Plug) S : Female contact (Receptacle)
⑤ Bushing	BS(4.0) : Dia. 4.0mm cable BS(4.5) : Dia. 4.5mm cable BS(5.0) : Dia. 5.0mm cable

Receptacles

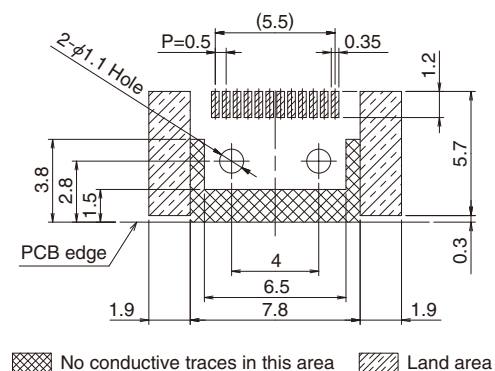


Part No.	HRS No.	Packaging	RoHS
LX60-12S	245-0018-3	2,000 pcs/reel	
LX60-16S	245-0001-0		
LX60-20S	245-0016-8		

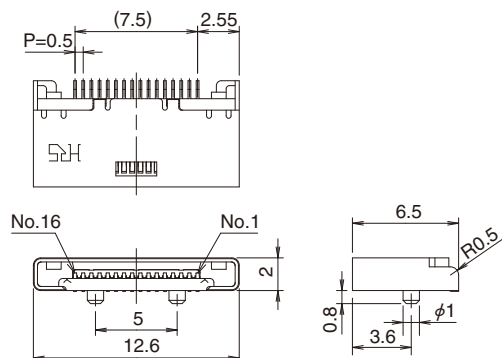
12 pos.



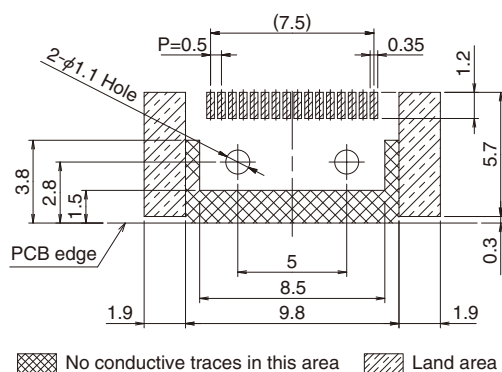
Recommended PCB mounting pattern



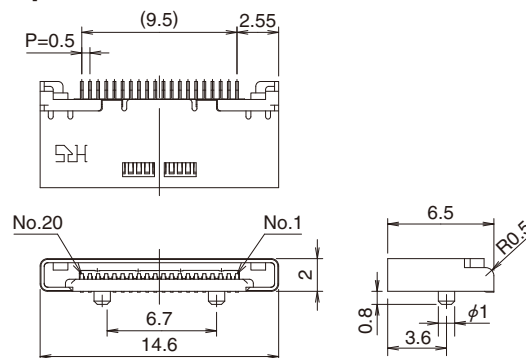
16 pos.



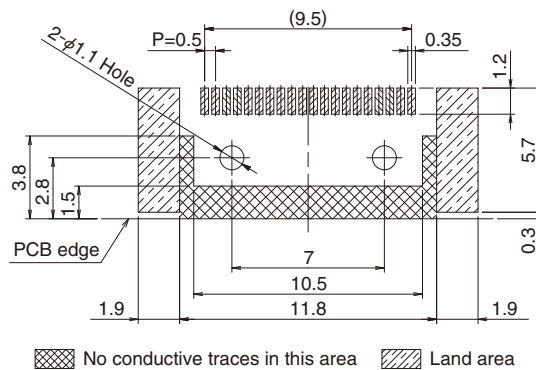
Recommended PCB mounting pattern



20 pos.



Recommended PCB mounting pattern

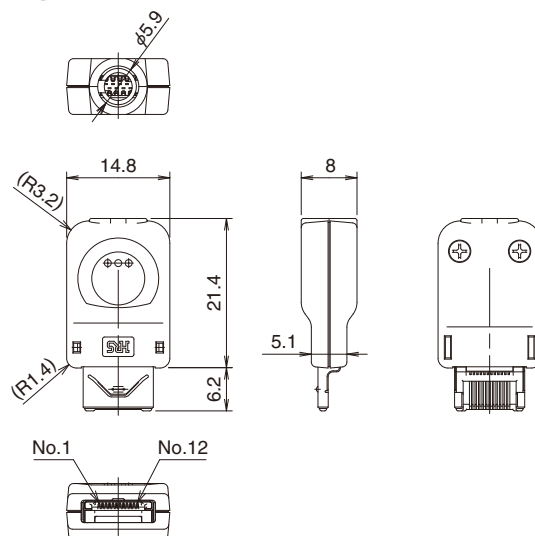


Plugs

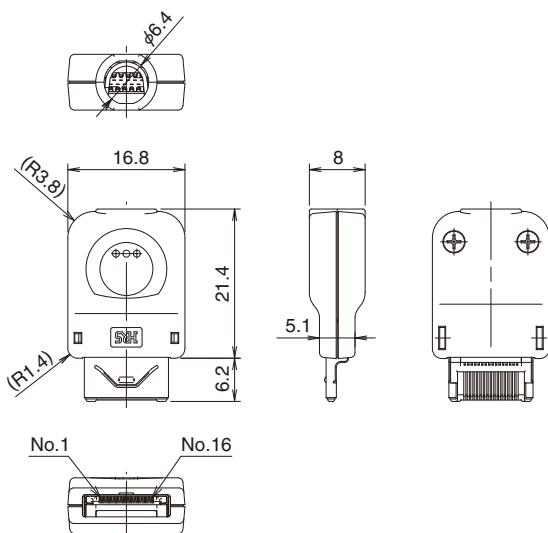


Part No.	HRS No.	Packaging	RoHS
LX40-12P	245-0019-6	1	
LX40-16P	245-0002-3		
LX40-20P	245-0017-0		

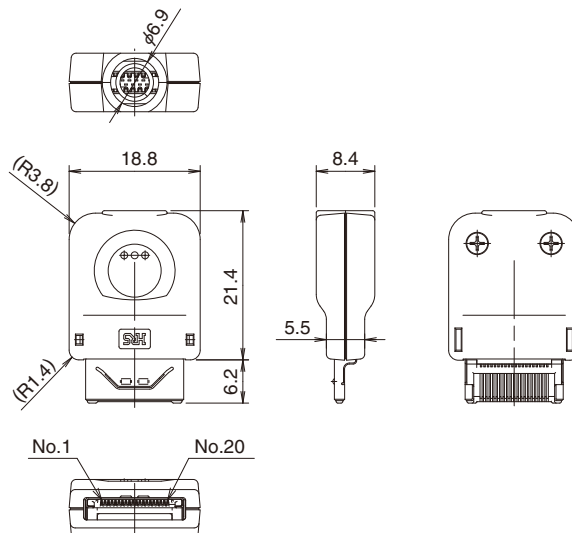
12 pos.



16 pos.



20 pos.



Bushing

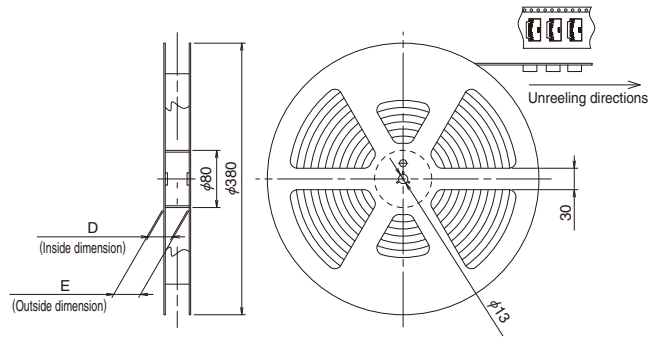
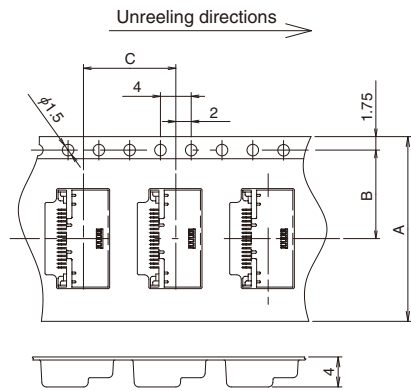


Part No.	HRS No.	Packaging	RoHS
LX40-12BS(4.0)	245-0020-5	100 pcs/pack	
LX40-16BS(4.5)	245-0021-8		
LX40-20BS(5.0)	245-0022-0		

◆ Receptacle Packaging Specifications

● Embossed carrier tape dimensions

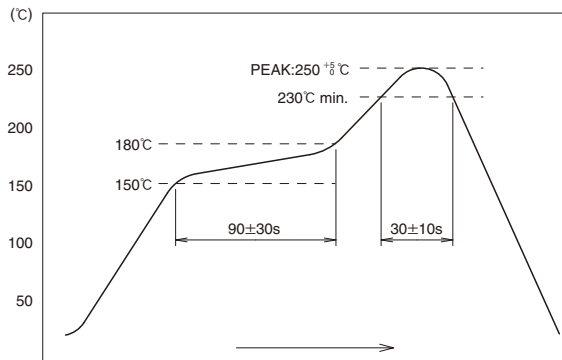
● Reel dimensions



Part No.	A	B	C
LX60-12S	24	11.5	12
LX60-16S			
LX60-20S			

Part No.	D	E
LX60-12S	25.5	29.5
LX60-16S		
LX60-20S		

◆ Receptacles Recommended Temperature Profile



This measurement is performed on the contact lead section.

The temperature profile may vary due to external conditions such as the type of cream solder, manufacturer, and board size. Please contact the solder manufacturer for their specifications.

◆ Applicable Plug Cable

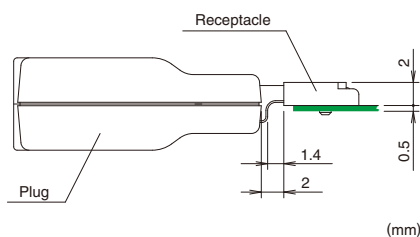
Part No.	Cable diameter	Wire size
LX40-12P	φ4 max.	φ0.6mm max. (AWG#30 to 32 or equivalent)
LX40-16P	φ4.5 max.	
LX40-20P	φ5 max.	

Note 1 : Applicable cable sizes are guidelines. (There may be slight differences depending on the cable outer insulation)

Note 2 : Cables must be attached using single piece overmolded bushings on the cable.

Note 3 : Please refer to applicable Cable Termination Procedures Manual for correct plug assembly and cable termination.

◆ Mated Condition Dimensions



USA:

HIROSE ELECTRIC (U.S.A.), INC. HEADQUARTERS CHICAGO OFFICE
2300 Warrenville Road, Suite 150,
Downers Grove, IL 60515
Phone : +1-630-282-6700
<http://www.hirose.com/us/>

USA:

HIROSE ELECTRIC (U.S.A.), INC. BOSTON OFFICE
300 Brickstone Square Suite 201,
Andover, MA 01810
Phone : +1-978-662-5255

GERMANY:

HIROSE ELECTRIC EUROPE B.V. NUREMBERG OFFICE
Neumeyerstrasse 22-26, 90411 Nurnberg
Phone : +49-911 32 68 89 63
Fax : +49-911 32 68 89 69
<http://www.hirose.com/eu/>

UNITED KINGDOM:

HIROSE ELECTRIC EUROPE BV (UK BRANCH)
4 Newton Court, Kelvin Drive, Knowlhill,
Milton Keynes, MK5 8NH
Phone : +44-1908 202050
Fax : +44-1908 202058
<http://www.hirose.com/eu/>

CHINA:

HIROSE ELECTRIC (CHINA) CO., LTD. SHENZHEN BRANCH
Room 09-13, 19/F, Office Tower Shun Hing Square, Di Wang Commercial Centre,
5002 Shen Nan Dong Road, Shenzhen City, Guangdong Province, 518008
Phone : +86-755-8207-0851
Fax : +86-755-8207-0873
<http://www.hirose.com/cn/>

KOREA:

HIROSE KOREA CO.,LTD.
143, Gongdan 1-daero, Siheung-si,
Gyeonggi-do, 15084, Korea
Phone : +82-31-496-7000
Fax : +82-31-496-7100
<http://www.hirose.co.kr/>

INDIA:

HIROSE ELECTRIC SINGAPORE PTE. LTD. BANGALORE LIAISON OFFICE
Unit No-403, 4th Floor, No-84, Barton Centre, Mahatma
Gandhi (MG) Road, Bangalore 560 001, Karnataka, India
Phone : +91-80-4120 1907
Fax : +91-80-4120 9908
<http://www.hirose.com/sg/>

USA:

HIROSE ELECTRIC (U.S.A.), INC. SAN JOSE OFFICE
2841 Junction Ave, Suite 200
San Jose, CA. 95134
Phone : +1-408-253-9640
Fax : +1-408-253-9641
<http://www.hirose.com/us/>

THE NETHERLANDS:

HIROSE ELECTRIC EUROPE B.V.
Hogehillweg #8 1101 CC Amsterdam Z-O
Phone : +31-20-6557460
Fax : +31-20-6557469
<http://www.hirose.com/eu/>

GERMANY:

HIROSE ELECTRIC EUROPE B.V. HANOVER OFFICE
Bayernstr. 3, Haus C 30855 Langenhagen, Germany
Phone : +49-511 97 82 61 30
Fax : +49-511 97 82 61 35
<http://www.hirose.com/eu/>

CHINA:

HIROSE ELECTRIC (CHINA) CO., LTD. (SHANGHAI, HEADQUARTERS)
18, Enterprise Center Tower 2, 209# Gong He
Road, Jing'an District, Shanghai, CHINA 200070
Phone : +86-21-6391-3355
Fax : +86-21-6391-3335
<http://www.hirose.com/cn/>

HONG KONG:

HIROSE ELECTRIC HONGKONG TRADING CO., LTD.
Room 1001, West Wing, Tsim Sha Tsui Centre, 66
Mody Road, Tsim Sha Tsui East, Kowloon, Hong Kong
Phone : +852-2803-5338
Fax : +852-2591-6560
<http://www.hirose.com/hk/>

SINGAPORE:

HIROSE ELECTRIC SINGAPORE PTE. LTD.
03, Anson Road, #20-01, Springleaf Tower,
Singapore 079909
Phone : +65-6324-6113
Fax : +65-6324-6123
<http://www.hirose.com/sg/>

MALAYSIA:

PENANG REPRESENTATIVE OFFICE
73-3-1, Ideal@The One, Jalan Mahsuri, Bayan
Lepas Penang, 11950, Malaysia
Phone : +604-648-5536
<http://www.hirose.com/sg/>

USA:

HIROSE ELECTRIC (U.S.A.), INC. DETROIT OFFICE (AUTOMOTIVE)
17197 N. Laurel Park Drive, Suite 253,
Livonia, MI 48152
Phone : +1-734-542-9963
Fax : +1-734-542-9964
<http://www.hirose.com/us/>

GERMANY:

HIROSE ELECTRIC EUROPE B.V. GERMAN BRANCH
Schoenbergstr. 20, 73760 ostfildern
Phone : +49-711-456002-1
Fax : +49-711-456002-299
<http://www.hirose.com/eu/>

FRANCE:

HIROSE ELECTRIC EUROPE B.V. PARIS OFFICE
130 Avenue Joseph Kessel, Bat E, 78960
Voisins le Bretonneux, France
Phone : +33-1-85764886
Fax : +33-1-85764823
<http://www.hirose.com/eu/>

CHINA:

HIROSE ELECTRIC (CHINA) CO.,LTD. BEIJING BRANCH
A1001, Ocean International Center, Building 56# East 4th
Ring Middle Road, ChaoYang District, Beijing, 100025
Phone : +86-10-5165-9332
Fax : +86-10-5908-1381
<http://www.hirose.com/cn/>

TAIWAN:

HIROSE ELECTRIC TAIWAN CO., LTD.
103 8F, No.87, Zhengzhou Rd., Taipei
Phone : +886-2-2555-7377
Fax : +886-2-2555-7355
<http://www.hirose.com/tw/>

INDIA:

HIROSE ELECTRIC SINGAPORE PTE. LTD. DELHI LIAISON OFFICE
Office NO.552, Regus-Green Boulevard, Level5, Tower C,
Sec62, Plot B-9A, Block B, Noida, 201301, Uttar Pradesh, India
Phone : +91-12-660-8018
Fax : +91-120-4804949
<http://www.hirose.com/sg/>

THAILAND:

BANGKOK OFFICE (REPRESENTATIVE OFFICE)
Unit 4703, 47th FL., 1 Empire Tower, South Sathorn
Road, Yannawa, Sathorn, Bangkok 10120 Thailand
Phone : +66-2-686-1255
Fax : +66-2-686-3433
<http://www.hirose.com/sg/>

**HIROSE ELECTRIC CO.,LTD.**

2-6-3,Nakagawa Chuoh,Tsuzuki-Ku,Yokohama-Shi 224-8540,JAPAN
TEL: +81-45-620-3526 Fax: +81-45-591-3726
<http://www.hirose.com>
<http://www.hirose-connectors.com>