

DYNAMIC HV SERIES CONNECTOR SYSTEM

SERIES INTRODUCTION

TE Connectivity (TE)'s high voltage Dynamic HV series sensing connector is designed for BDU (Battery Distribution Unit) and BMS (Battery Management System) application in both power battery and ESS (Energy Storage System) market. The Dynamic HV series HV10 type connector is designed for 1000 V voltage rating with high performance resin and only a 3.5 mm pitch for the print circuit board and wire connection. HV10 type connector includes 6 and 8 positions in single row, 10 and 12 positions in double row variance. Double row version can save vertical space by using two pieces of single row receptacle connectors. The side latches structure provides the comfortable mating and unmating force. Dynamic HV series has retained its keying feature to facilitate error mating in same pin count or between rows.

Product Highlights

3.5 mm pitch

To reach the high voltage performance within limited space, Dynamic HV series connector specifies the 3.5 mm pitch structure with barrier between circuits. With the high CTI (Comparative Tracking Index) resin material, this series can perform the stable signal connection in 1000 V voltage rating.

Secondary locking design

Dynamic HV series provides a secondary locking design, in addition to the conventional terminals for cable wrapping and crimping. The pre-assembled spacer on the receptacle housing makes the cable assembly easier in addition to helping reduce the risk of the wires loosening.

Latch protection concept

The bracket feature around side latches can protect unexpected force from the latches loosening from header. Some projected feature on end of latches is designed for workers' fingers to hold the receptacle to unmate from header.

Double row concept

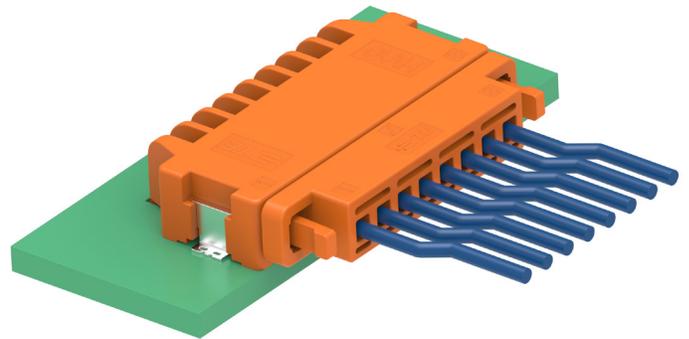
This series is designed with a modular two row concept to fit the two pieces of single row receptacle as compared to one double row header. This concept is reused from Dynamic D3000 and D5000 series connectors. By this modular solution, PCB space can be saved to allocate more room to other key electrical components, if a high pin count needs to be designed. The double row feature also allows comfortable mating and unmating force.

Keyings for error mating

Both single row and double row variants retain the keying features to achieve the error mating on the same pin count connector or top row and bottom row error proofing.

Voltage rating extension

This series allows the possibility to extend the voltage rating from 1000 V by HV10 type to 1500 V by means of jumping circuit.



Applications

- BESS (Battery Energy Storage Systems)
- EVI (Electrical Vehicle Infrastructure)
- EV power battery
- Battery pack
- Battery management system / Battery distribution unit

Dynamic HV Series Connector Performance and Specifications

Performance

Item / Series	Dynamic HV
Pitch	3.5 mm
Rated voltage (max.)	1000 V AC
Rated current (max.)	3A
Contact resistance	30mΩ max
Withstanding voltage	4800 V DC
Operating temperature	-40 °C to 125 °C

Product Specification and Instruction Sheet

Product specification	108-161098
Test report	501-161690
Application Specification	114-161004 (for receptacle contact) 114-161109 (for receptacle connector assembly) 114-161230 (for header reflow soldering)

Positions / Wire size / Rated current

Dynamic HV		
Positions	Cable size (AWG)	
		20
6, 8, 10, 12	3 A	3 A

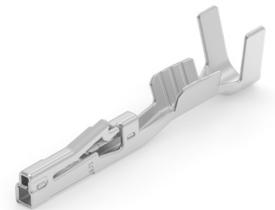
Materials and Plating

Category	Material
Contact	Copper alloy
Plating in mating area	Tin
Plastic housing of header	UL94 V-0 PA10T, orange
Plastic housing of receptacle (wire side)	UL94 V-0 PA10T, orange
Retention pin	Copper alloy

Dynamic HV Series Contact

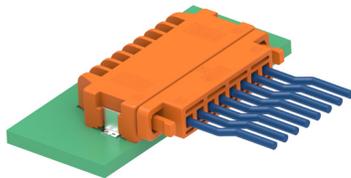
Crimp contacts

Wire range				Receptacle Contact		Contact Release Tool
AWG	mm ²	Outer diameter of insulation (mm)	Wire Rang mark	Plating	Strip Form	
20	0.50	2.0-2.1	5	Tin	2473625-5	2499887-1
22	0.35-0.50	1.2-1.6	6	Tin	2473625-6	



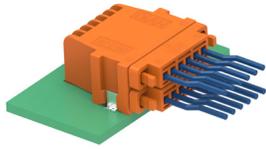
Configurations

HV10 Single row



POS	Receptacle housing			Board-Mounting Header			
	Image	Key	Standard	Image	Plating	Key	Horizontal type
6		X	1-2473514-6		Tin	X	1-2464043-6
		Y	2-2473514-6		Tin	Y	2-2464043-6
8		X	1-2473514-8		Tin	X	1-2464043-8
		Y	2-2473514-8		Tin	Y	2-2464043-8

HV10 Double row



Receptacle housing					Board-Mounting Header				
POS	Image	Row Location	Key	Standard	POS	Image	Plating	Key	Horizontal type
5		1st row	X	1-2473514-5	10		Tin	XX	1-2464107-0
5		2nd row	X	1-2473514-5					
5		1st row	X	1-2473514-5	10		Tin	XY	2-2464107-0
5		2nd row	Y	2-2473514-5					
5		1st row	Y	2-2473514-5	10		Tin	YY	3-2464107-0
5		2nd row	Y	2-2473514-5					
6		1st row	X	1-2473514-6	12		Tin	XX	1-2464107-2
6		2nd row	X	1-2473514-6					
6		1st row	X	1-2473514-6	12		Tin	XY	2-2464107-2
6		2nd row	Y	2-2473514-6					
6		1st row	Y	2-2473514-6	12		Tin	YY	3-2464107-2
6		2nd row	Y	2-2473514-6					

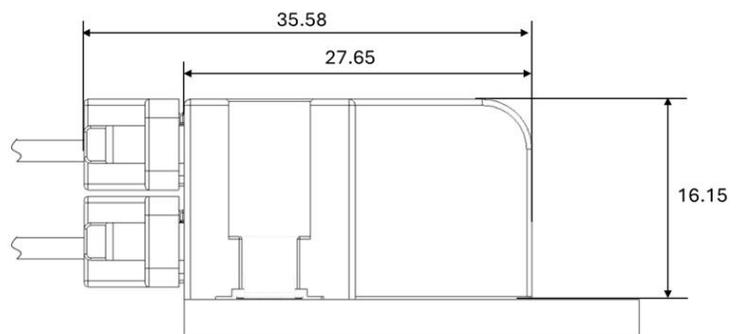
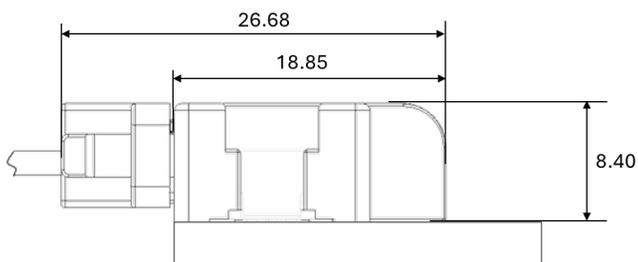
Note: 1st row is placed at the bottom and 2nd row is placed on top.

Dynamic HV Series HV10 Types - 3.5 mm pitch

Relative Product Information

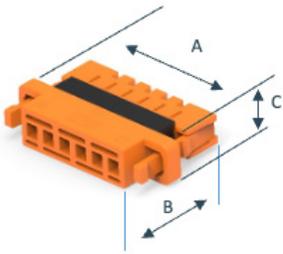
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Mated Dimensions unit: (mm)



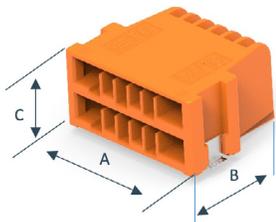
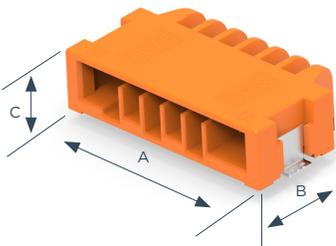
External Dimensions

Receptacle housing



POS	Key	Part Number	Dimensions (mm)		
			A	B	C
5	X	1-2473514-5	28.9	18.8	7.3
	Y	2-2473514-5			
6	X	1-2473514-6	32.4	18.8	7.3
	Y	2-2473514-6			
8	X	1-2473514-8	39.4	18.8	7.3
	Y	2-2473514-8			

Board-Mounting Header
Horizontal type



POS	Key	Part Number	Dimensions (mm)		
			A	B	C
6	X	1-2464043-6	32.4	18.9	8.3
	Y	2-2464043-6			
8	X	1-2464043-8	39.4	18.9	8.3
	Y	2-2464043-8			
10	XX	1-2464107-0	28.9	27.7	16.1
	XY	2-2464107-0			
	YY	3-2464107-0			
12	XX	1-2464107-2	32.4	27.7	16.1
	XY	2-2464107-2			
	YY	3-2464107-2			

About TE Connectivity

TE Connectivity plc (NYSE: TEL) is a global industrial technology leader creating a safer, sustainable, productive, and connected future. Our broad range of connectivity and sensor solutions enable the distribution of power, signal and data to advance next-generation transportation, energy networks, automated factories, data centers, medical technology and more. With more than 85,000 employees, including 9,000 engineers, working alongside customers in approximately 130 countries, TE ensures that EVERY CONNECTION COUNTS. Learn more at www.te.com and on [LinkedIn](#), [Facebook](#), [WeChat](#), [Instagram](#) and [X \(formerly Twitter\)](#).

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