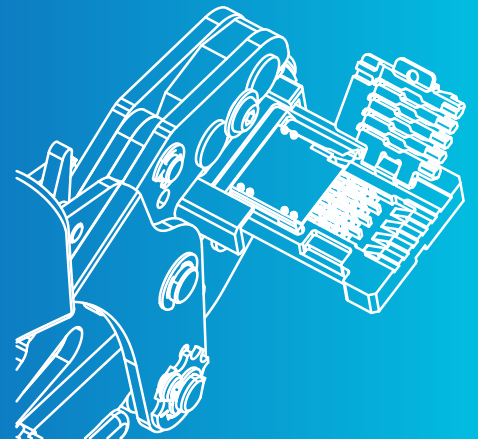


3M™ Mini Stack Connector Series

Faster, more compact connections
for an automated world

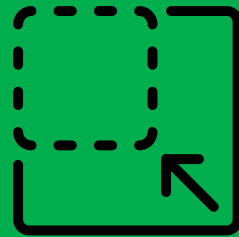


Less wiring time. Reduced board footprint. The future of electronic connections.

Manufacturing equipment is becoming more and more automated. That means more electronic components – and much higher-density control boards. With traditional connectors such as crimp type connectors, wiring time can go up and efficiency can come way down.



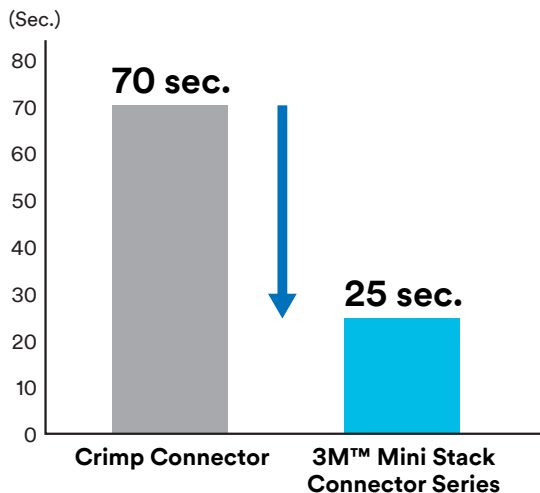
60%
less wiring time



30%
reduced board footprint

Time-saving

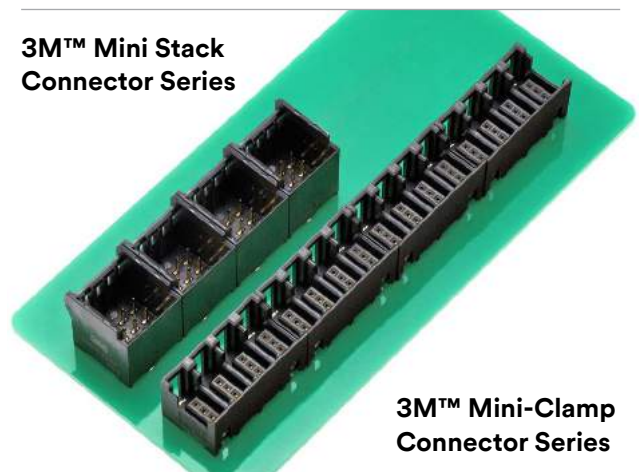
The 3M™ Mini Stack Connector Wiremount Socket 3S5 Series helps provide a simple, reliable termination process using Insulation-Displacement Contacts (IDC). This can help save 60% or more in wiring time vs. crimp-style connectors.



12 steps → **3 steps**

Space-saving

3M™ Mini-Stack Connectors Boardmount Header 3S6 Series helps reduce board footprint by 30% or more vs. 3M™ Mini-Clamp Connector Series.



Key features of 3M™ Mini Stack Connector Series:

Compact design.

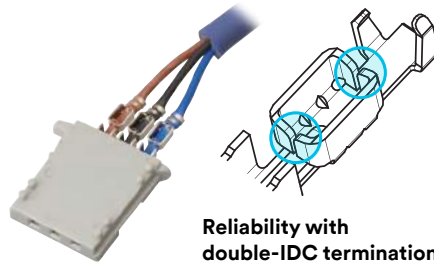
Miniature IDC wiremount connectors feature contacts integrated into housings for easy handling. They are available individually in non-stacking versions, or they can be stacked to form single block-style connectors.



Stack four connectors into a single block

Time-saving termination.

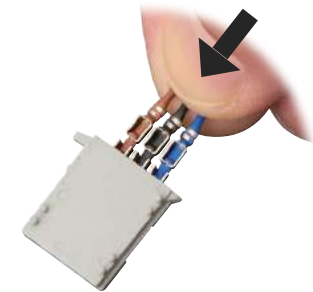
3M™ Mini Stack Connector Wiremount Socket 3S5 Series allows you to terminate multiple wires simultaneously. Then simply push the wired terminals all the way into the housing for reliable double IDC termination.



Reliability with double-IDC termination

Contact & housing are integrated, making handling easy

- No need to strip wires
- Connect wires simultaneously

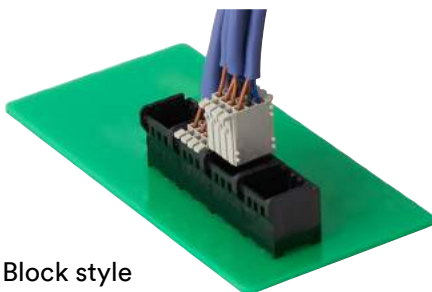


Insert terminals into housing

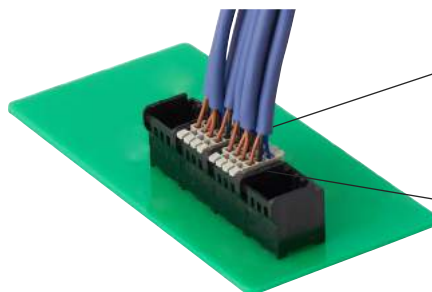
Easy mating and unmating.

Stack four stack-type 3M Mini Stack socket 3S5 series sockets together into one block-style connector. Then, simply plug it into the 3M Mini Stack header 3S6 series. It unplugs just as easily with two center latches.

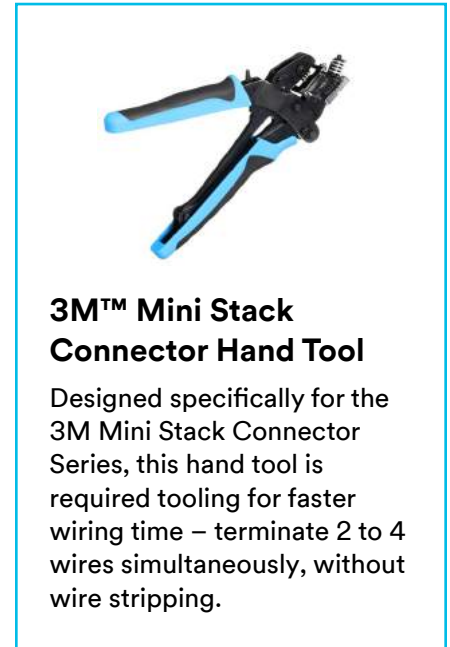
Easily mated even in hard-to-reach or see spaces.



Block style enables easy mating



Easy unmating features



3M™ Mini Stack Connector Hand Tool

Designed specifically for the 3M Mini Stack Connector Series, this hand tool is required tooling for faster wiring time – terminate 2 to 4 wires simultaneously, without wire stripping.

3M™ Mini Stack Connector Series product line up

3M™ Mini Stack Connector Wiremount Socket 3S5 Series

- IDC termination helps save up to 60% wiring time vs. crimp-style connectors when using 3M™ Mini Stack Connector Hand Tool
- Stack up to 4 connectors in a block for easy mating and unmating
- No pre-treatment of wire needed with IDC technology
- Terminates 2 to 4 wires in single action
- Integrated terminals and housing make handling easy
- Wide range of wire compatibility (AWG#22-30)



Stack type



Non-stack type

Connector type	Wire Accommodation		Positions		
	Wire OD mm (mil)	AWG	2	3	4
Stack type	0.6 to 1.5 (23.6 to 59.1)	30-25	3S502-S530-G00 PN	3S503-S530-G00 PN	3S504-S530-G00 PN
		24-22	3S502-S330-B00 PN	3S503-S330-B00 PN	3S504-S330-B00 PN
Non-stack type	0.6 to 1.5 (23.6 to 59.1)	30-25	3S502-N530-G00 PN	3S503-N530-G00 PN	3S504-N530-G00 PN
		24-22	3S502-N330-B00 PN	3S503-N330-B00 PN	3S504-N330-B00 PN

3M™ Mini Stack Connector Boardmount Header 3S6 Series

- Helps reduce board footprint up to 30% compared to 3M™ Mini-Clamp Connector Series
- Mates with up to 4 stacked connectors in one action
- Fixed tabs prevent lifting and secure fixation of the board during soldering
- Straight common type headers can be used with stack and non-stack type 3M Mini Stack socket 3S5 series
- 3M Mini Stack socket 3S5 series stack type can be unplugged by gripping the center latch



Straight type



Right angle type

PCB mounting type	Connector type	Applicable wiremount type	Rows	Positions per row		
				2	3	4
Straight	Common type	Stack type and Non-stack type	1	-	3S603-62C3-B00 PP	3S604-62C4-B00 PP
			4	-	3S612-62C3-B00 PP	3S616-62C4-B00 PP
	Stack type	Stack type	4	-	3S612-62S3-B00 PP	3S616-62S4-B00 PP
Right angle	Common type	Stack type and Non-stack type	2	-	3S606-42C3-B00 PP	3S608-42C4-B00 PP
			4	3S608-42C2-B00 PP	3S612-42C3-B00 PP	3S616-42C4-B00 PP
	Stack type	Stack type	4	3S608-42S2-B00 PP	3S612-42S3-B00 PP	3S616-42S4-B00 PP

3M™ Mini Stack Connector Junction Header 3S8 Series

- Allows for streamlined cable extensions in sensor wiring
- Panel mount type and free hanging type are available
- Stack type mates with 4 stacked connectors in one action
- Stack type wiremount connector can be unplugged by gripping the center latch
- Common type can be used with stack and common type 3M™ Mini Stack Connector Wiremount Socket 3S5 Series



Panel mount



Free hanging

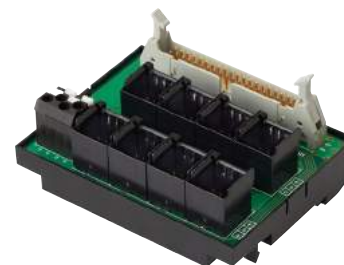
Mounting type	Connector type	Positions	Rows	Positions per row	
				3	4
Panel Mount	Stack type	12	4	3S812-OPS3-B00 PS	-
		16		-	3S816-OPS4-B00 PS
	Common type	12	4	3S812-OPC3-B00 PS	-
		16		-	3S816-OPC4-B00 PS
Free Hanging	Stack type	12	4	3S812-OHS3-B00 PS	-
		16		-	3S816-OHS4-B00 PS
	Common type	12	4	3S812-OHC3-B00 PS	-
		16		-	3S816-OHC4-B00 PS

3M™ Mini Stack Connector Interface Unit 3ST Series

- Consolidates multiple sensor connections into single cables
- Available with 16 channels and 32 channels
- Features on board discrete wire power and ground connections
- Vertical and horizontal DIN rail mounting without tools
- General 0.1 × 0.1 in pin spacing for connection to most common controllers
- Accepts 3M™ Mini Stack Connector Wiremount Socket 3S5 Series



16 Channels



32 Channels

Product	Number of I/O signal channels	Positions per channel	Positions of controller side connector
3ST16-C3A2-P00	16	3	20
3ST32-C3A4-P00	32	3	40

3M™ Mini Stack Connector Dust Cover 3SD Series

- Occupies open ports, helping keep debris out of boardmount headers
- Incorporates into stacked blocks of 3M Mini Stack socket 3S5 series
- For use with less than four sockets



Stack type



Non-stack type

Connector type	Positions per row		
	2	3	4
Stack type	3SD02-S01	3SD03-S01	3SD04-S01
Non-stack type	3SD02-N01	3SD03-N01	3SD04-N01

3M™ Mini Stack Connector Hand Tool

Designed specifically for simultaneous termination, the 3M™ Mini Stack hand tool maximizes efficiency.



Product Number	Wire OD Accommodation mm (mil)
3S900-13	0.6 to 1.0 (24 to 39)
3S900-16	over 1.0 to 1.5 (39 to 59)

3M™ Mini Stack Connector Wiremount Socket 3S5 Series

Stack type: 3S50x-Sx30-x00 PN

Non-Stack type: 3S50x-Nx30-x00 PN

- Stack up to 4 connectors (Sx versions) in a block for easy mating and unmating
- Non-stack connectors (Nx versions) provide individual mating
- Provides excellent wire connections in a compact form
- No pre-treatment of wire needed with IDC technology
- Terminates 2 to 4 wires in single action
- Integrated terminals and housing make handling easy
- Wide range of wire compatibility (AWG#22-30) with highly reliable double IDC termination
- UL and cUL recognized components



Stack type



Non-stack type

Product specifications: 3M™ Mini Stack Connector Wiremount Socket 3S5 Series, Stack type and Non-stack type

Material & Plating	Item	Material	Remarks
	Housing	PBT resin	
	Contact	Copper alloy	Wiping area: Gold plating over nickel plating IDC: Nickel plating
Wire Accommodation	See product table		
Ratings	Item	Rating	
	Voltage	AC/DC 32V Max.	
	Current	2.0A MAX. (AWG22-26), 1.5A MAX. (AWG27-28), 1.0A MAX. (AWG29-30)	
	Temperature	-20 to 85 degree C	

3M™ Mini Stack Connector

Wiremount Socket 3S5 Series

Stack type

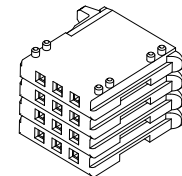
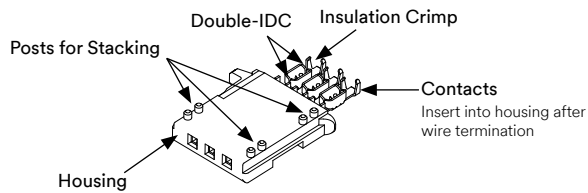
3S50x-Sx30-x00 PN



Product table

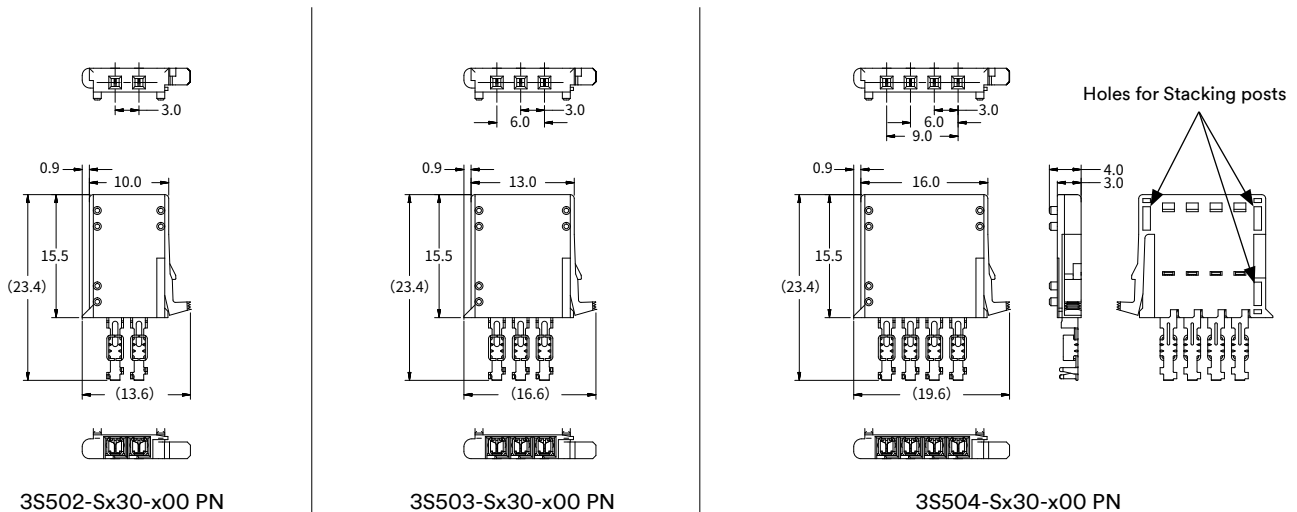
Positions	Wire Accommodation			Body Color	Product Number
	AWG No.	Nominal conductor cross-sectional area mm ² (mil ²)	Wire OD mm (mil)		
2	24-22	0.2 - 0.3 (310 - 465)	0.6 to 1.5 (23.6 to 59.1)	Black	3S502-S330-B00 PN
	30-25	0.05 - 0.19 (78 - 295)		Gray	3S502-S530-G00 PN
3	24-22	0.2 - 0.3 (310 - 465)	0.6 to 1.5 (23.6 to 59.1)	Black	3S503-S330-B00 PN
	30-25	0.05 - 0.19 (78 - 295)		Gray	3S503-S530-G00 PN
4	24-22	0.2 - 0.3 (310 - 465)	0.6 to 1.5 (23.6 to 59.1)	Black	3S504-S330-B00 PN
	30-25	0.05 - 0.19 (78 - 295)		Gray	3S504-S530-G00 PN

Product outline



Stacked Condition

Dimensions (mm)



3M™ Mini Stack Connector

Wiremount Socket 3S5 Series

Non-stack type

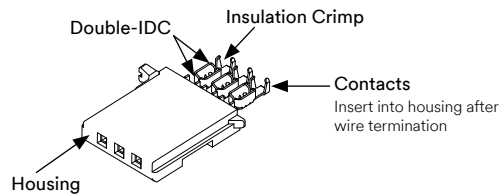
3S50x-Nx30-x00 PN



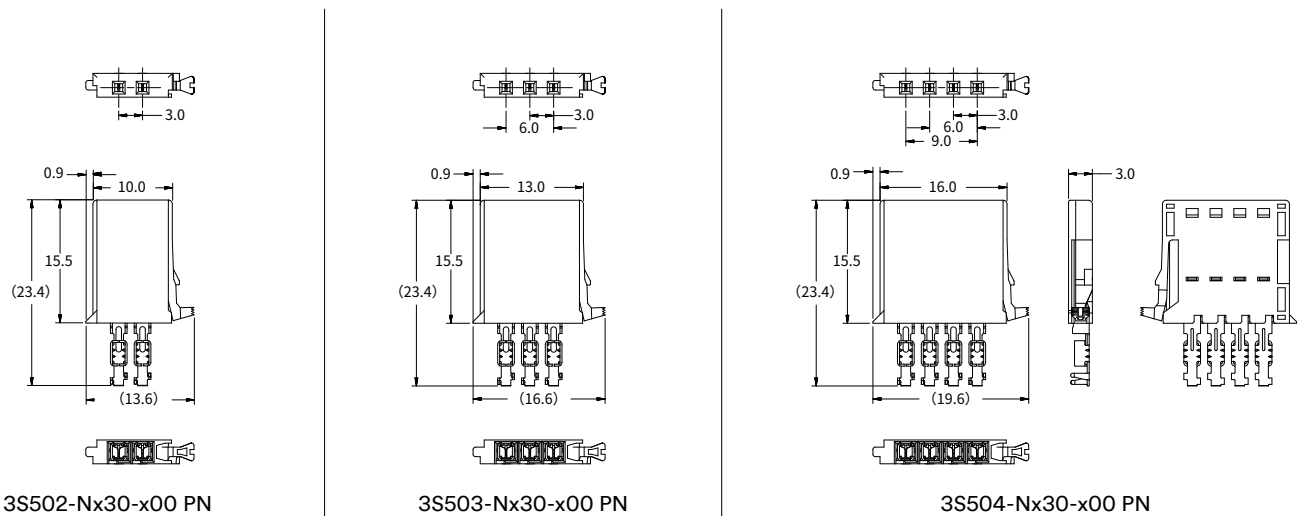
Product table

Positions	Wire Accommodation			Body Color	Product Number
	AWG No.	Nominal conductor cross-sectional area mm ² (mil ²)	Wire OD mm (mil)		
2	24-22	0.2 - 0.3 (310 - 465)	0.6 to 1.5 (23.6 to 59.1)	Black	3S502-N330-B00 PN
	30-25	0.05 - 0.19 (78 - 295)		Gray	3S502-N530-G00 PN
3	24-22	0.2 - 0.3 (310 - 465)	0.6 to 1.5 (23.6 to 59.1)	Black	3S503-N330-B00 PN
	30-25	0.05 - 0.19 (78 - 295)		Gray	3S503-N530-G00 PN
4	24-22	0.2 - 0.3 (310 - 465)	0.6 to 1.5 (23.6 to 59.1)	Black	3S504-N330-B00 PN
	30-25	0.05 - 0.19 (78 - 295)		Gray	3S504-N530-G00 PN

Product outline



Dimensions (mm)



3M™ Mini Stack Connector Boardmount Header 3S6 Series

Straight, Stack type: 3S6xx-62Sx-B00 PP

Straight, Common type: 3S6xx-62Cx-B00 PP

Right angle, Stack type: 3S6xx-42Sx-B00 PP

Right angle, Common type: 3S6xx-42Cx-B00 PP

- Helps save 30% more board space in comparison with 3M™ Mini-Clamp Connector Series
- Mates with 4 stacked connectors in one action
- Common type applies to both Common and stack types
- 3M™ Mini Stack Connector Wiremount Socket 3S5 Series stack type can be unplugged by gripping the center latch
- Fixed tabs prevent lifting and secure fixation of the board during soldering
- UL and cUL recognized components



Straight, Stack type



Straight, Common type



Right angle, Stack type



Right angle, Common type

Product specifications: 3M™ Mini Stack Connector Boardmount Headers 3S6 Series - Straight, Right Angle, Stack type, Common type

Material & Plating	Item	Material	Remarks
	Body	PBT resin	
	Header pin	Copper alloy	Wiping area: Gold plating over nickel plating Solder tails: Tin plating over nickel plating
	Fixture pin	Copper alloy	Tin plating over nickel plating
PCB Accommodation	Thickness: 1.0 to 1.6mm (39 to 63mil)		
Ratings	Item	Rating	
	Voltage	AC/DC 32V Max.	
	Current	2.0A MAX.	
	Temperature	-20 to 85 degree C	

3M™ Mini Stack Connector

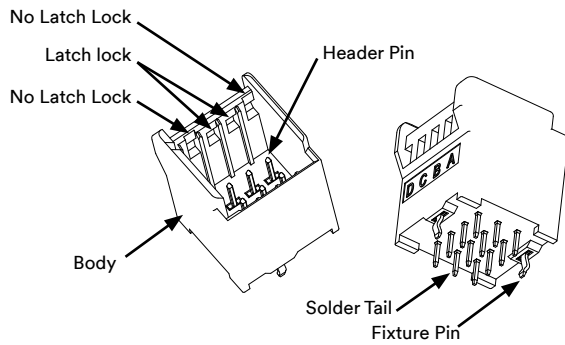
Boardmount Header 3S6 Series

Straight, Stack type

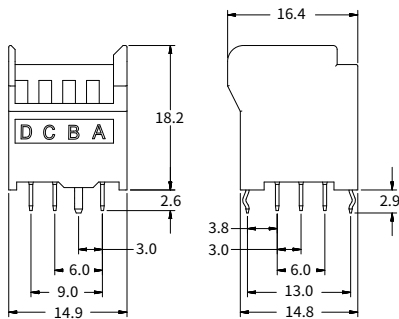
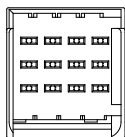
3S6xx-62Sx-B00 PP



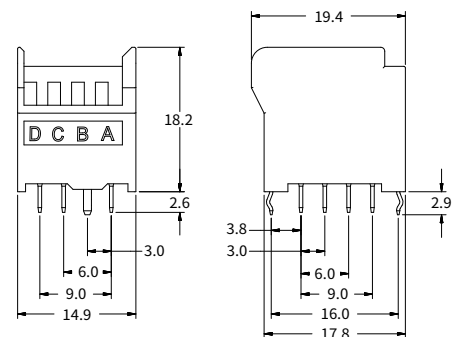
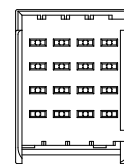
Product outline



Dimensions (mm)



3S612-62S3-B00 PP



3S616-62S4-B00 PP

3M™ Mini Stack Connector

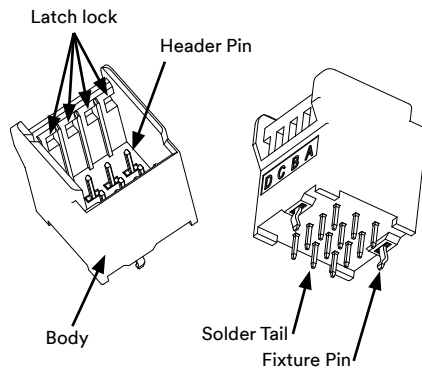
Boardmount Header 3S6 Series

Straight, Common type

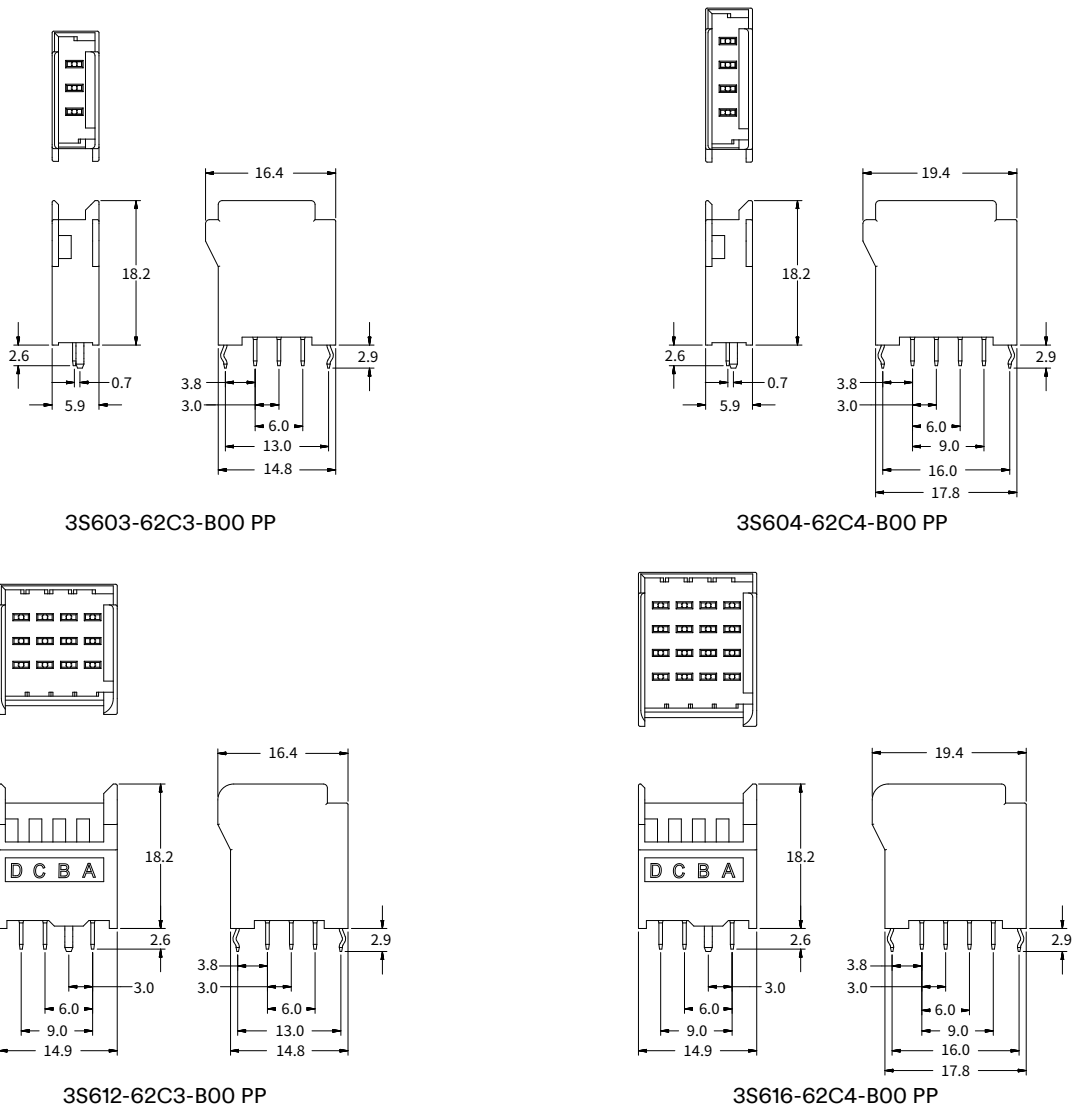
3S6xx-62Cx-B00 PP



Product outline



Dimensions (mm)



3M™ Mini Stack Connector

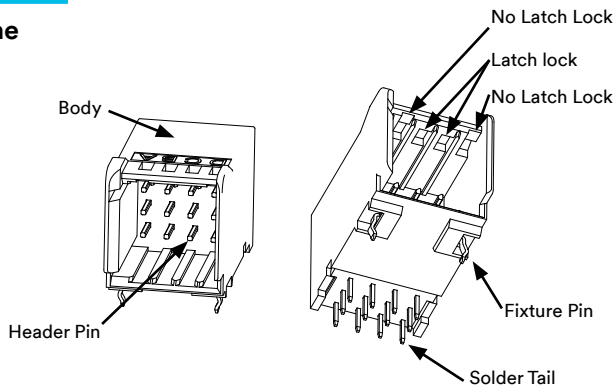
Boardmount Header 3S6 Series

Right Angle, Stack type

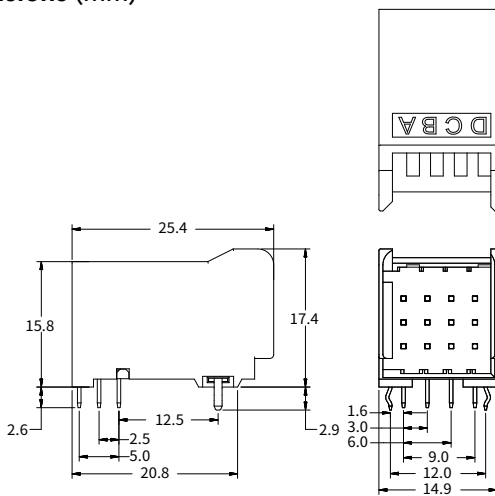
3S6xx-42Sx-B00 PP



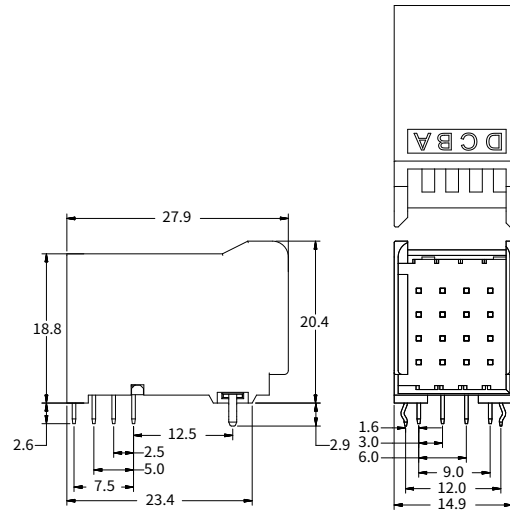
Product outline



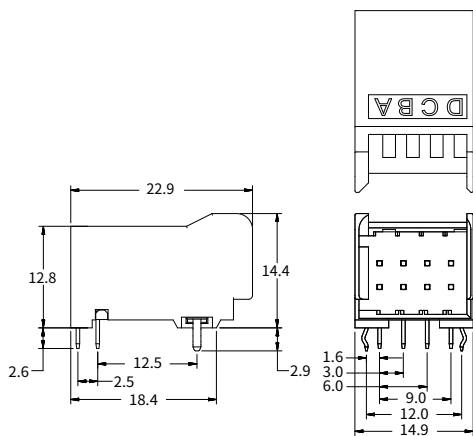
Dimensions (mm)



3S612-42S3-B00 PP



3S616-42S4-B00 PP



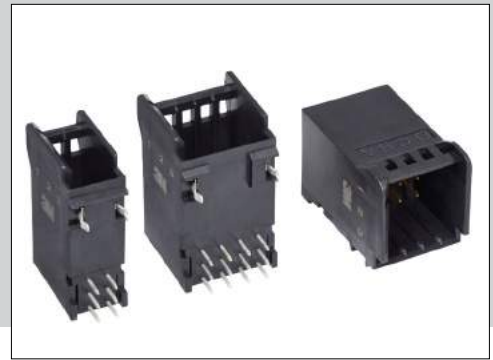
3S608-42S2-B00 PP

3M™ Mini Stack Connector

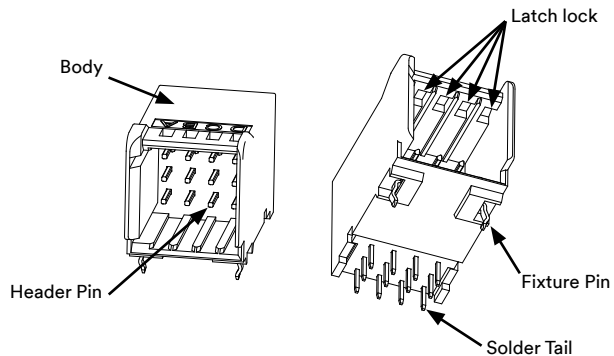
Boardmount Header 3S6 Series

Right Angle, Common type

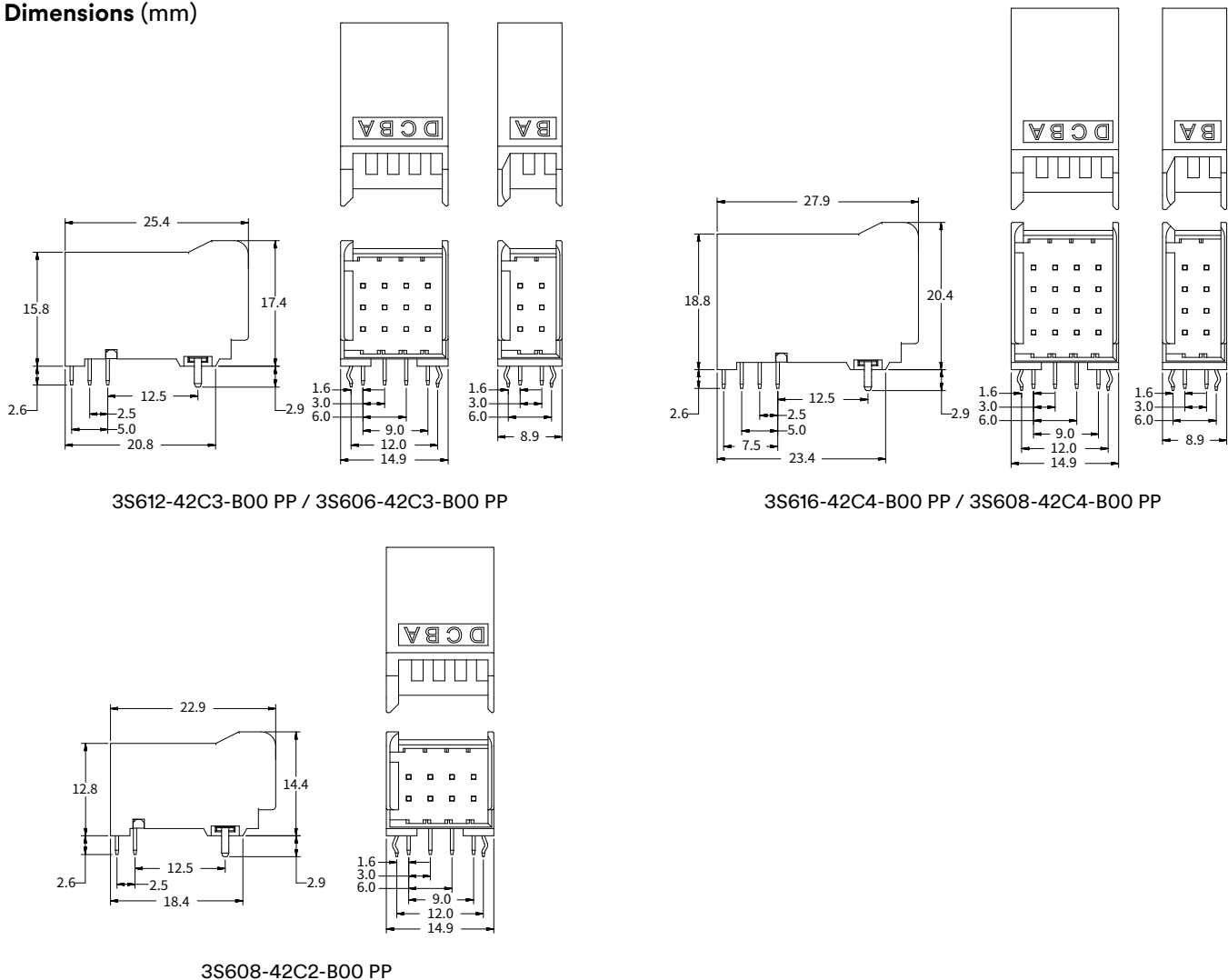
3S6xx-42Cx-B00 PP



Product outline



Dimensions (mm)



3M™ Mini Stack Connector Junction Header 3S8 Series

Free Hanging, Stack type: 3S8xx-0HSx-B00 PS

Free Hanging, Common type: 3S8xx-0HCx-B00 PS

Panel Mount, Stack type: 3S8xx-0PSx-B00 PS

Panel Mount, Common type: 3S8xx-0PCx-B00 PS

- Helps reduce board footprint up to 30% compared to 3M™ Mini-Clamp Connector Series
- Panel mount type and free hanging type are available
- Stack type mates with 4 stacked connectors one action
- Common type applies to both common and stack types
- 3M™ Mini Stack Connector Wiremount Socket 3S5 Series stack type can be unplugged by gripping the center latch
- Common type can be used with stack and common type 3M Mini Stack socket 3S5 series



Free Hanging,
Stack type



Free Hanging,
Common type



Panel Mount,
Stack type



Panel Mount,
Common type

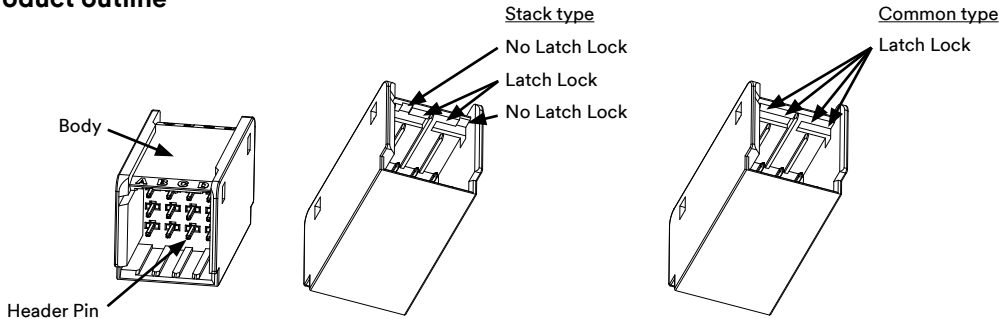
Product specifications: 3M™ Mini Stack Connector Junction Header 3S8 Series, Panel Mount, Free Hanging, Stack type, Common type

Material & Plating	Item	Material	Remarks
	Body	PBT resin	
	Header pin	Copper alloy	Wiping area: Gold plating over nickel plating Solder tails: Tin plating over nickel plating
	Fixture pin	Copper alloy	Tin plating over nickel plating
PCB Accommodation	Thickness: 1.0 to 1.6mm (39 to 63mil)		
Ratings	Item	Rating	
	Voltage	AC/DC 32V Max.	
	Current	2.0A MAX.	
	Temperature	-20 to 85 degree C	

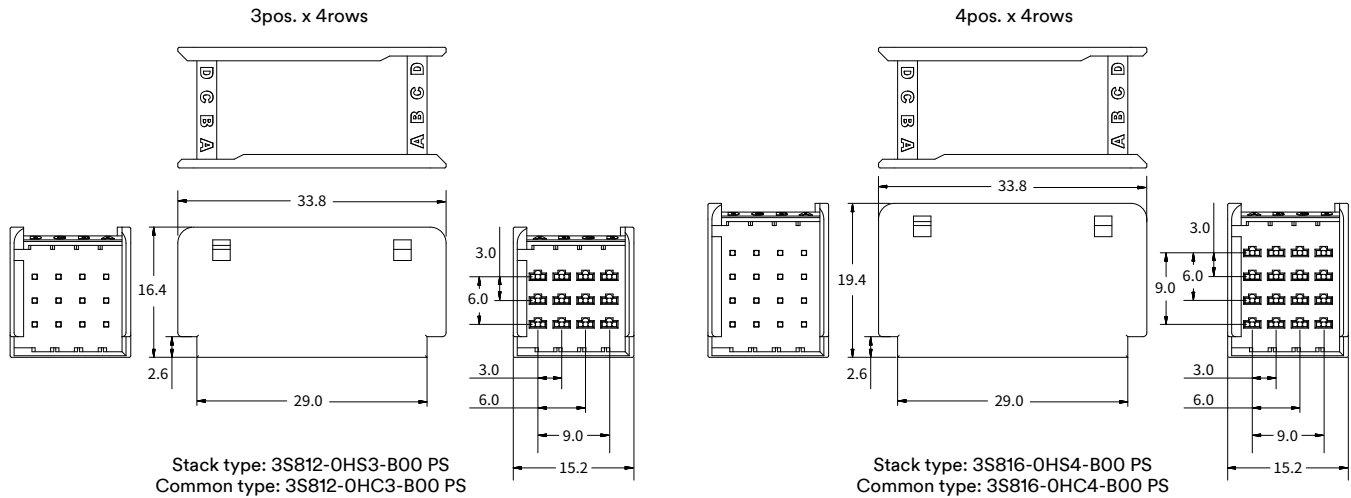
3M™ Mini Stack Connector Junction Header 3S8 Series Free Hanging Stack type: 3S8xx-0HSx-B00 PS Common type: 3S8xx-0HCx-B00 PS



Product outline



Dimensions (mm)



Application examples



Mate with 4 stacked connectors in one action

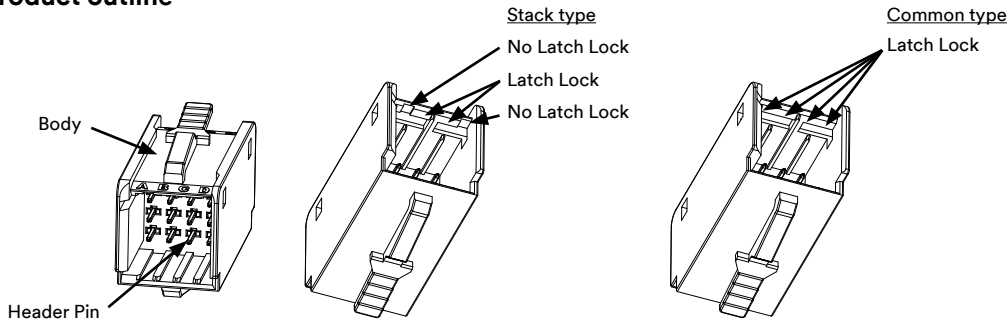


Mate with non-stack type wiremount connectors individually

3M™ Mini Stack Connector Junction Header 3S8 Series Panel Mount Stack type: 3S8xx-0PSx-B00 PS Common type: 3S8xx-0PCx-B00 PS



Product outline

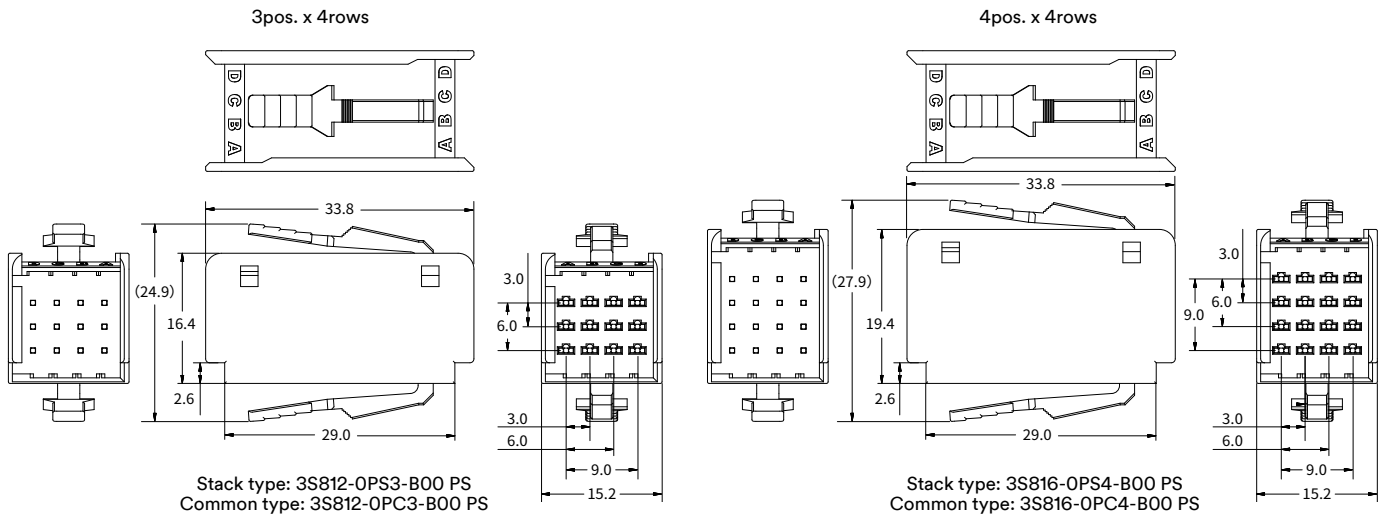


Application example

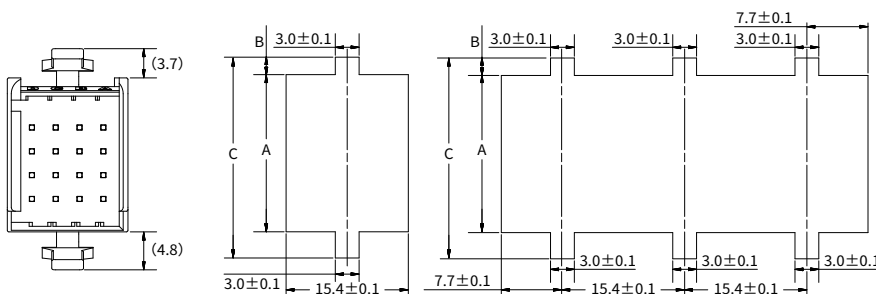


Panel mount

Dimensions (mm)



Panel Cutout



Product Number	3S812-0PS3-B00 PS 3S812-0PC3-B00 PS		
Panel Thickness	1.00 / 1.20	1.40 / 1.60	2.00
A	16.8 +/-0.1	16.8 +/-0.1	16.8 +/-0.1
B	1.8 +/-0.1	2.0 +/-0.1	2.2 +/-0.1
C	21.5 +/-0.1	21.9 +/-0.1	22.3 +/-0.1

Product Number	3S816-0PS4-B00 PS 3S816-0PC4-B00 PS		
Panel Thickness	1.00 / 1.20	1.40 / 1.60	2.00
A	19.8 +/-0.1	19.8 +/-0.1	19.8 +/-0.1
B	1.8 +/-0.1	2.0 +/-0.1	2.2 +/-0.1
C	24.5 +/-0.1	24.9 +/-0.1	25.3 +/-0.1

Note: Panel mount type connectors have upper and lower polarity. Please be careful when designing panel cuts and installing connectors.

3M™ Mini Stack Connector Interface Unit 3ST Series

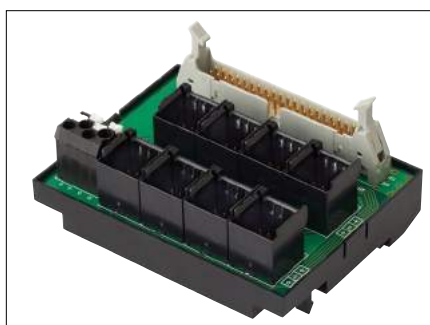
16 Channels: 3ST16-C3A2-P00

32 Channels: 3ST32-C3A4-P00

- Helps reduce board footprint up to 30% compared to 3M™ Mini-Clamp Connector Series
- Available with 16 channels and 32 channels
- Requires no external power supply unit
- Vertical and horizontal DIN rail mounting without tools
- General 0.1x 0.1 in pin spacing for connection to most common controllers
- Accepts 3M™ Mini Stack Connector Wiremount Socket Series 3S5



16 Channels

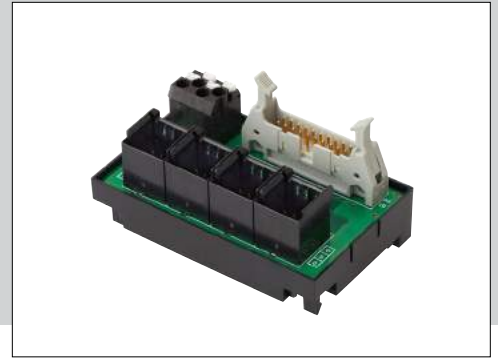


32 Channels

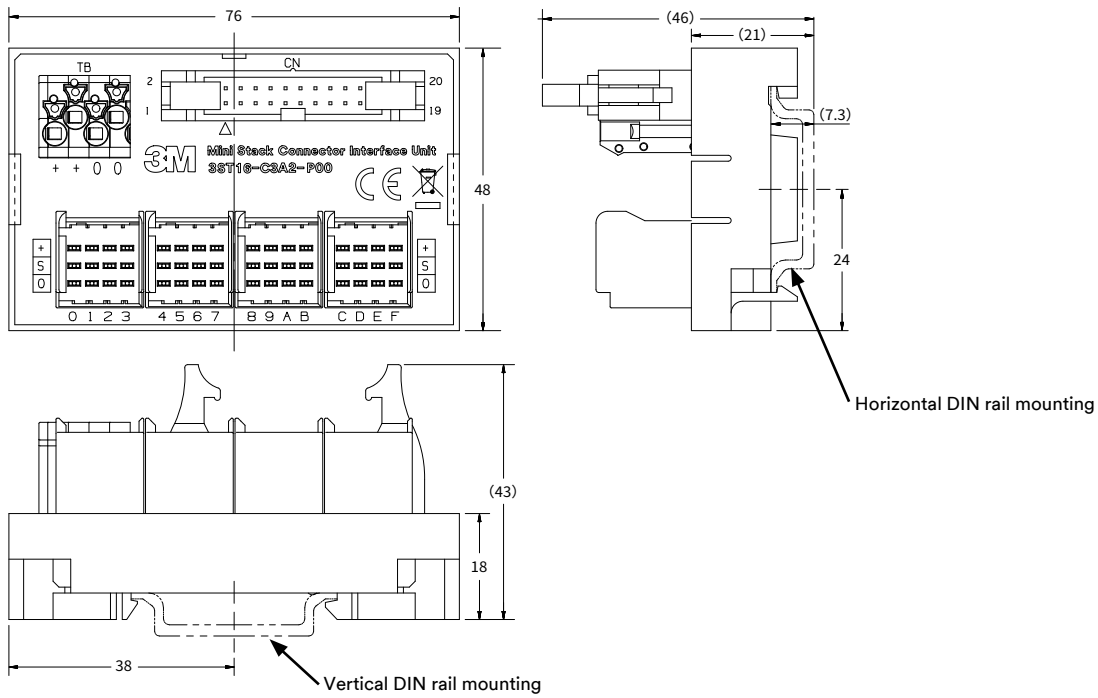
Product specifications - 3M™ Mini Stack Connector Interface Unit 3ST Series, 16 and 32 Channels

Components	Controller side connector	3M™ 0.1"×0.1" Standard Header Connector 16ch: 3428-6002 LCPL (20pos.) 32ch: 3432-6002 LCPL (40pos.)
	Device side connector	3M™ Mini Stack Connector Boardmount Header Common type 3pos. x 4rows 3S612-62C3-B00 PP
	For power supply	Push-in type terminal block
	PCB	Material: FR-4
	Case	Material: PPE
Applicable components	Controller side connector	3M™ 0.1"×0.1" Standard Socket 79xx series 16ch: 7920-x500 xx, Strain relief 3448-7920 / 3448-7920 LP 32ch: 7940-x500 xx, Strain relief 3448-7940 / 3448-7940 LP
	Device side connector	3M™ Mini Stack Connector Wiremount Socket 3S503-xx30-x00 PN
	Wire for terminal block	Solid wire: 0.5 to 1.2mm DIA., Stripping length of insulation: 9 to 10mm Stranded wire: 24 to 16AWG / 0.25mm ² to 1.5mm ² , Ferrule shall be used
	Ferrule for terminal block	Length: 8 to 12mm, Size: 24 to 16AWG / 0.25mm ² to 1.5mm ² 1.0mm ² Max. with hexagonal crimp shape Conforming to DIN 46228-4
	DIN rail	TH35 (IEC 60715/JIS C 2812)
Ratings	Voltage	AC/DC 32V
	Current	Connector: 1A/pin, Terminal block: 10A/pin
	Temperature	-20 to 60 degree C, 85%RH Max., No condensation

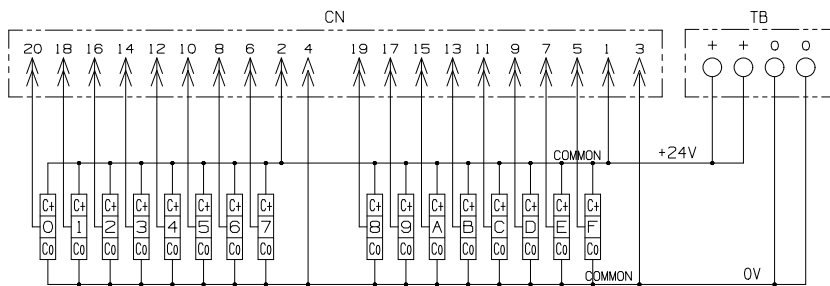
3M™ Mini Stack Connector Interface Unit 3ST Series 16 Channels 3ST16-C3A2-P00



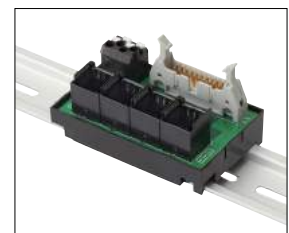
Product outline



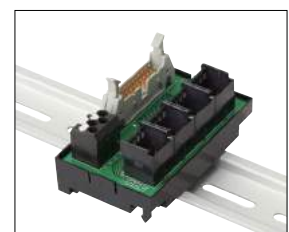
Circuit Diagram



Application images of 3ST16-C3A2-P00

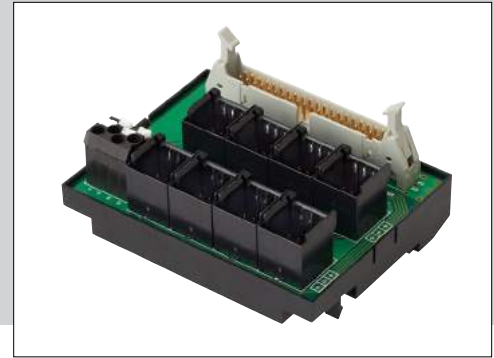


Horizontal DIN rail mounting

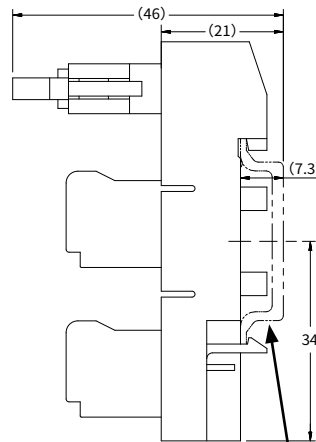
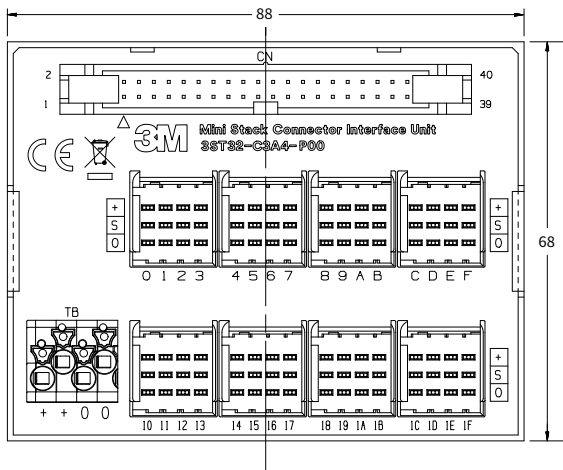


Vertical DIN rail mounting

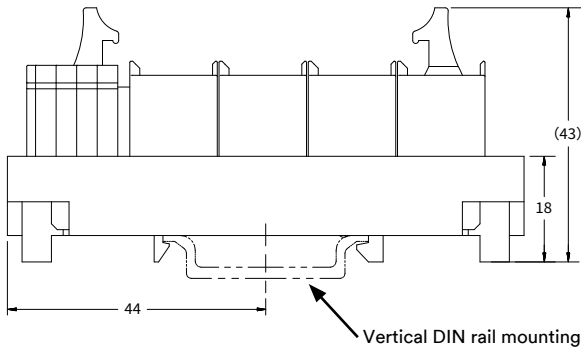
3M™ Mini Stack Connector Interface Unit 3ST Series 32 Channels 3ST32-C3A4-P00



Product outline

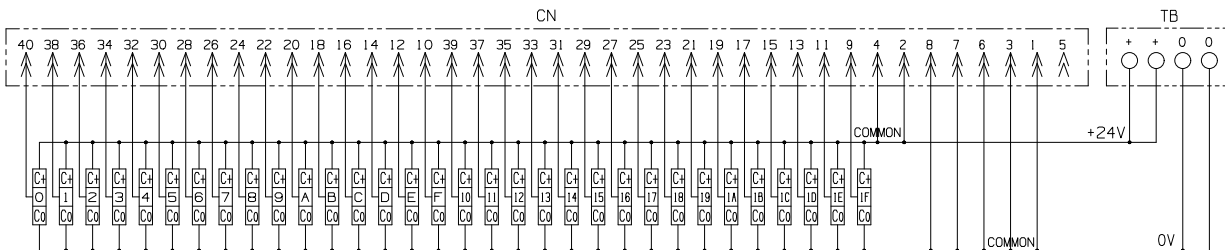


Horizontal DIN rail mounting



Vertical DIN rail mounting

Circuit Diagram

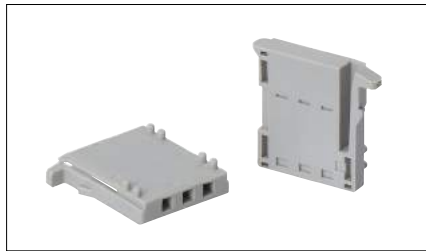


3M™ Mini Stack Connector Dust Cover 3SD Series

Stack type: 3SD0x-S01

Non-Stack type: 3SD0x-N01

- For use when there are less than four sockets. Creates a four-socket block to plug into the header
- Prevents debris from getting inside boardmount headers



Stack type



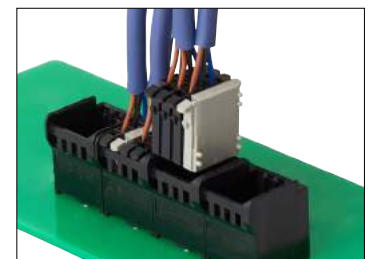
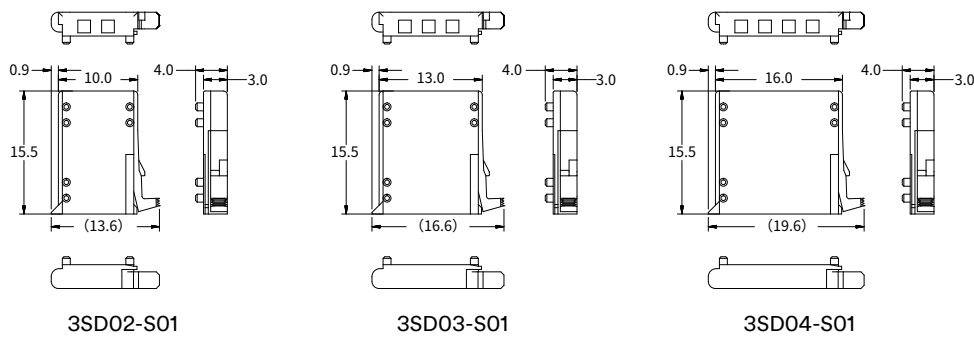
Non-stack type

Product specifications: 3M™ Mini Stack Connector Dust Cover 3SD Series, Stack type and Non-stack type

Material & Plating	Item	Material	Remarks
		Body	PBT resin

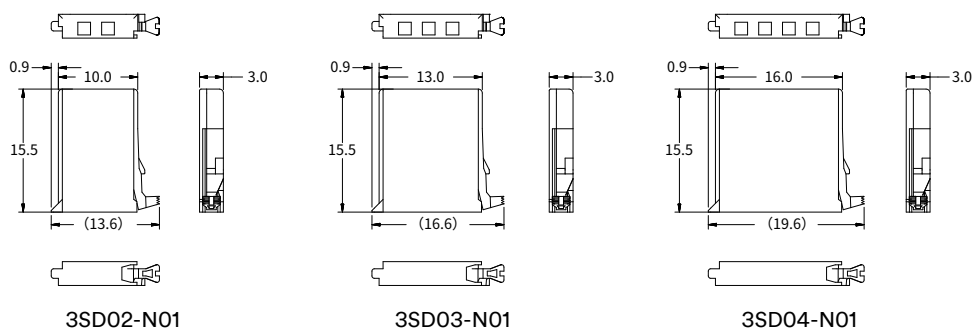
Ratings	Item	Rating
		Temperature

Dimensions: 3M™ Mini Stack Connector Dust Cover Stack type (mm)



Application example

Dimensions: 3M™ Mini Stack Connector Dust Cover Non-stack type (mm)



3M™ Mini Stack Connector Hand Tool 3S900-1x

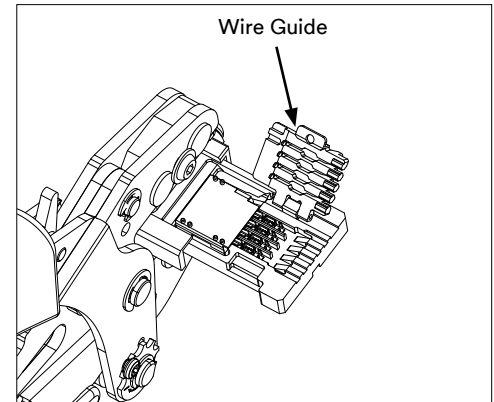
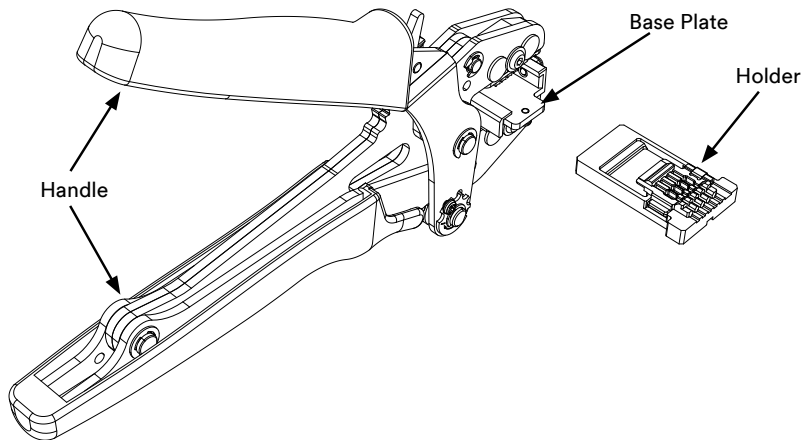
Designed specifically for simultaneous termination, the 3M™ Mini Stack Connector Hand Tool helps maximize efficiency.

Product specifications: 3M™ Mini Stack Connector Hand Tool

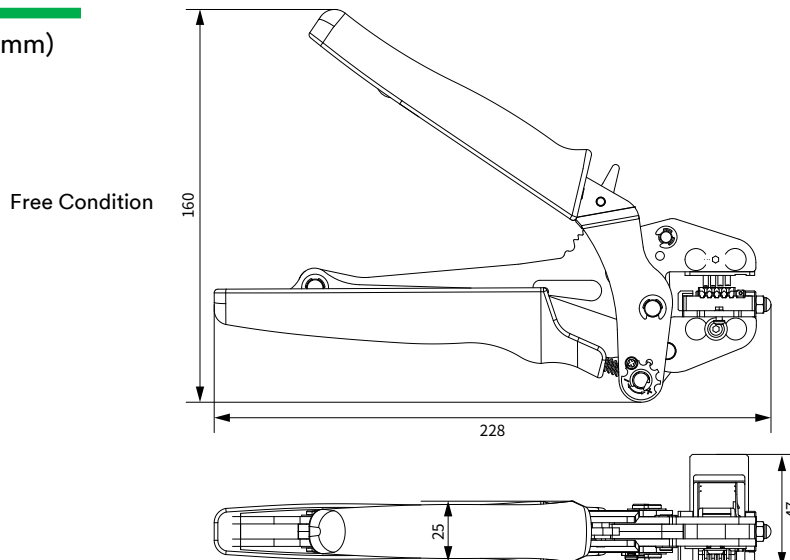
Product Number	Wire OD Accommodation mm (mil)
3S900-13	0.6 to 1.0 (24 to 39)
3S900-16	over 1.0 to 1.5 (39 to 59)



Product outline



Dimensions (mm)





Safety Data Sheet: Consult Safety Data Sheet before use.

Regulatory: For regulatory information about this product, contact your 3M representative.

Technical Information: The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use: Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

Warranty, Limited Remedy, and Disclaimer: Unless a different warranty is specifically stated on the applicable 3M product packaging or product literature, 3M warrants that each 3M product meets the applicable 3M product specifications on the Certificate of Analysis, which is established when the product is manufactured and deemed commercially available and is provided at the time 3M ships the product. **3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM, OR USAGE OF TRADE.** If a 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement or repair of the 3M product or refund of the purchase price.

Limitation of Liability: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental, or consequential, regardless of the legal or equitable theory asserted, including, but not limited to, warranty, contract, negligence, or strict liability.

Disclaimer: For industrial use only. Not intended, labeled or packaged for consumer sale or use.



Electronics Materials Solutions Division

3M Center 223-3S-32
St. Paul, MN 55144
United States

1-800-251-8634 phone
651-778-4244 fax
www.3M.com/factoryautomation

3M is a trademark of 3M Company.
Please recycle.
©3M 2023. All rights reserved.
60-5005-0261-6