



# ModICE™ - SHS

Industrial and Commercial Transportation



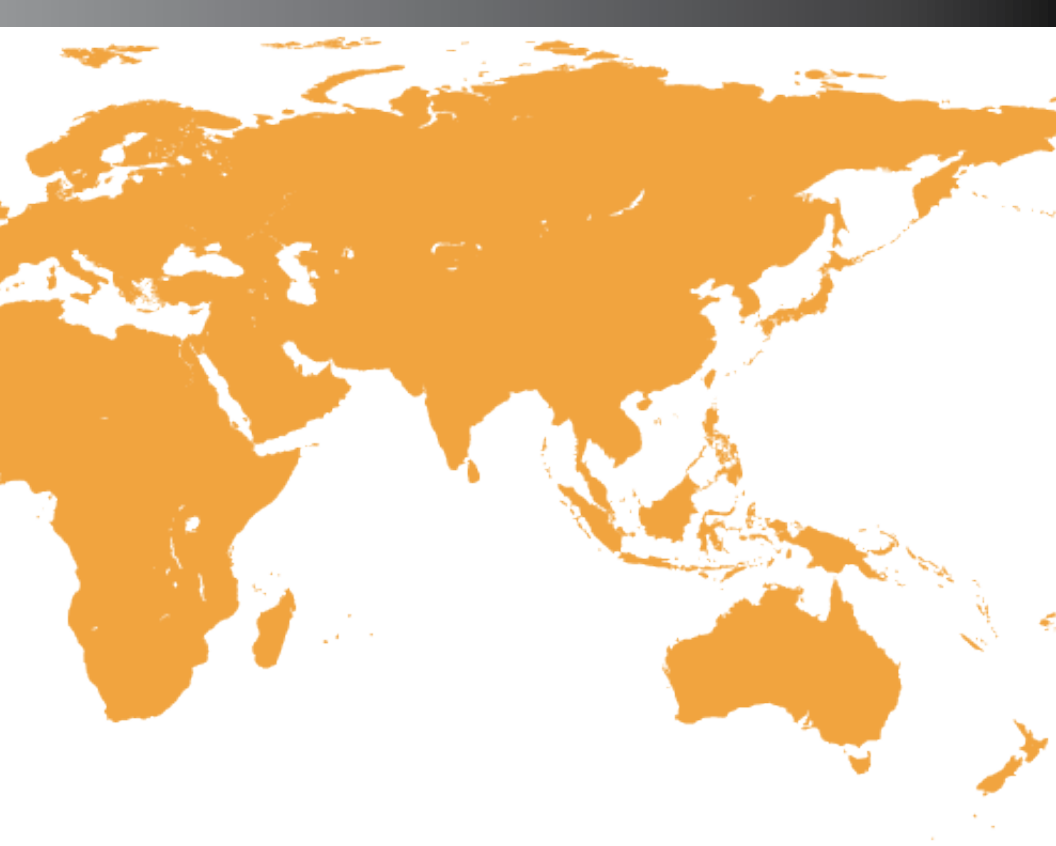


## **Cinch Connectors. Innovative interconnect solutions across the world.**

Cinch Connectors designs and manufactures a broad range of interconnect products with facilities around the world.

In operation since 1917, Cinch supplies high quality, high performance connectors and cables globally to the Commercial Transportation, Aerospace, Military and Defense, High End Computer, Oil & Gas and other industrial markets.

We aim to exceed our customer's expectations, and to continually provide innovative solutions to the rapidly changing needs of the markets, and customers, we serve.



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# ModICE™ Modular Connector Enclosures

ModICE™ is a complete line of connector enclosures that offers sealed packaging solutions for rugged electronic control modules. The Cinch 1.5mm SHS system is the base interconnect technology.

The ModICE™ Advantage:

- 3 distinct enclosure sizes (ME, SE, LE)
- Multiple header configurations (18, 30, 48 and 60 I/O)
- Available Options:
  - ME Header with integrated RF Ports (SMA, RP-SMA)
  - Headers with integrated ferrite filtering
  - Blank headers for specific customer applications
  - Enclosures with integrated heat sink (SE and LE)
  - Vented enclosures (Breather vent)
- Simple module assembly with snap-in header/PCB



LE Enclosure  
(PCB not provided by Cinch)



ME-RF Enclosure



ME Enclosure



SE Enclosure with Vent

## Product Specification

**Operating Temperature:** -40°C to +85°C

**Current:** 10 Amp @ 85°C

**Contact Resistance:** < 10mΩ

**Insulation Resistance:** > 1000 MΩ

**Sealing:** IP67, IP69K

**Temperature Life:** 1000 Hrs @ 85°C

**Current Cycling:** 500Hrs @ 10 Amp

500 cycles 45 min ON – 15 min OFF

**Vibration:** 10 to 2000 to 10 Hz with 15 g's peak level

**Shock:** 50 g's – 20 pulses

**Salt Spray:** 96 Hrs

**Temperature Humidity Cycling:** 320 Hrs

40 – 8 Hrs cycles -40°C to +85°C

**Fluid Resistance:** Resists to most fluids used in industrial applications



# ModICE™ Enclosures



## ME

	Enclosure	With Breather
Without Heat Sink	581 01 30 065	581 01 30 075

## SE

	Enclosure	With Breather
Without Heat Sink	581 01 30 043	581 01 30 059
With One Heat Sink	581 01 30 042	581 01 30 058
With Two Heat Sinks	581 01 30 041	581 01 30 057

## LE

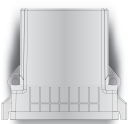
	Enclosure	With Breather
Without Heat Sink	581 01 60 033	581 01 60 039
With One Heat Sink	581 01 60 032	581 01 60 038
With Two Heat Sinks	581 01 60 031	581 01 60 037

## SE & LE Spring Plate for Heat Sink Option

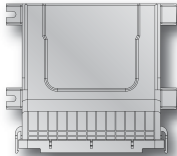
	Spring Plates
One Heat Sink	581 00 00 021
Two Heat Sinks	581 00 00 020 and 581 00 00 021

\* The heat sink option is only available on the SE and LE Enclosure.

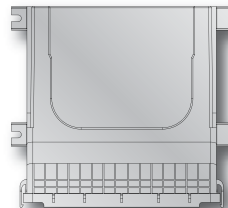
ME



SE



LE



SE/LE Enclosure



For dimensions visit [www.cinch.com](http://www.cinch.com)

# ModICE™ Headers



## ME

I/O	With Ferrite	Without Ferrite
18 I/O	581 01 18 039	581 01 18 038
30 I/O	581 01 30 072	581 01 30 064
48 I/O	581 01 48 010	581 01 48 009
Blank		581 00 00 055



## SE

I/O	With Ferrite	Without Ferrite
18 I/O	581 01 18 033	581 01 18 032
30 I/O	581 01 30 046	581 01 30 044
48 I/O	581 01 48 007	581 01 48 005
Blank		581 00 00 027



## LE

I/O	With Ferrite	Without Ferrite
30 I/O	581 01 30 051	581 01 30 045
48 I/O	581 01 48 008	581 01 48 006
60 I/O	581 01 60 006	581 01 60 005
Blank		581 00 00 028





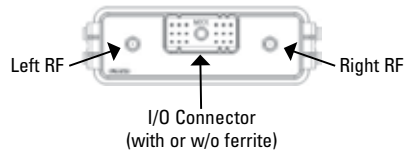
# ModICE™ ME-RF



ModICE® ME-RF offers a unique enclosure cover (header) with integrated SMA connectors for quick connect of antenna and other RF devices.



Header Arrangement  
(Face View – 18 I/O shown)



Features include:

- Main connector - 18 or 30 I/O (with or without ferrite)
- 1 or 2 SMA
- Standard or Reverse Polarity SMA (50Ω)
- SMA soldered to PC board

## ME-RF Headers

# SMA	I/O	Left RF	Right RF	With Ferrite	Without Ferrite
1	18 I/O	n/a	SMA	5810618004	5810618003
1	18 I/O	RP-SMA	n/a	5810618006	5810618005
1	30 I/O	n/a	SMA	5810630004	5810630003
1	30 I/O	RP-SMA	n/a	5810630006	5810630005
2	18 I/O	RP-SMA	SMA	5810618002	5810618001
2	18 I/O	RP-SMA	RP-SMA	5810618008	5810618007
2	18 I/O	SMA	SMA	5810618010	5810618009
2	30 I/O	RP-SMA	SMA	5810630002	5810630001
2	30 I/O	RP-SMA	RP-SMA	5810630008	5810630007
2	30 I/O	SMA	SMA	5810630010	5810630009

See page 6 for or ME Enclosure part numbers





# ModICE™ Tooling

ModICE Tooling	
Tool to assemble ModICE™ SE & LE	599 11 11 650
Tool to assemble ModICE™ ME	599 11 11 652
Tool to open ModICE™ SE	599 11 11 611
Tool to open ModICE™ LE	599 11 11 612
Tool to open ModICE™ ME	599 11 11 440

See [www.cinch.com](http://www.cinch.com) for ModICE™ Assembly Instructions

# ModICE™ Header/ SHS Harness Connector Matrix

ModICE™ Header	Size	I/O	Connector Mate 1	Connector Mate 2
581 01 18 xxx	SE, SE	18	581 01 18 023	N/A
581 01 30 xxx	ME, SE	30	581 01 30 029	N/A
581 01 48 xxx	ME, SE, LE	48	581 01 18 023	581 01 30 029
581 01 60 xxx	LE	60	581 01 30 028	581 01 30 029
581 06 18 xxx	ME-RF	18	581 01 18 023	SMA
581 06 30 xxx	ME-RF	30	581 01 30 029	SMA

See page 15 for SHS Harness Connectors





# SHS Headers

SHS is a complete line of sealed rugged I/O connectors. This product family is designed to perform on electronic control modules that function in extreme environmental conditions commonly found on commercial and off-road vehicles and industrial equipment.

The SHS Header Advantage:

- Robust panel-mount PCB connector
- 4 header sizes (18, 30, 48 and 60 I/O)
- Integrated ferrite filtering available
- 1.5mm connector technology
- Multiple colors and keying configurations available

SHS Header 48 I/O



SHS Header 30 I/O



## Product Specification

**Operating Temperature:** -40°C to +125°C

**Current:** 10 Amp @ 85°C

**Contact Resistance:** < 10mΩ

**Insulation Resistance:** > 1000 MΩ

**Sealing:** IP67, IP69K

**Temperature Life:** 1000 Hrs @ 125°C

**Current Cycling:** 500Hrs @ 10 Amp

500 cycles 45 min ON – 15 min OFF

**Vibration:** 10 to 2000 to 10 Hz with 15 g's peak level

**Shock:** 50 g's – 20 pulses

**Salt Spray:** 96 Hrs

**Temperature Humidity Cycling:** 320 Hrs

40 – 8 Hrs cycles -40°C to +125°C

**Fluid Resistance:** Resists to most fluids used in industrial applications

# SHS Headers



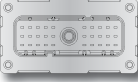
I/O	With Ferrite	Without Ferrite	Color
18 I/O	581 01 18 001	581 01 18 011	Black
18 I/O	581 01 18 002	581 01 18 012	Natural
30 I/O	581 01 30 001	581 01 30 011	Grey
30 I/O	581 01 30 002	581 01 30 013	Black
48 I/O	581 01 48 001	581 01 48 011	Black
48 I/O	581 01 48 002	581 01 48 012	Natural
48 I/O	581 01 48 003	581 01 48 013	Grey
60 I/O	581 01 60 001	581 01 60 011	Black
60 I/O	581 01 60 002	581 01 60 012	Natural



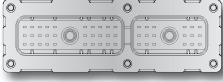
**18 I/O**



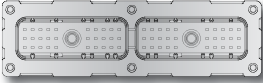
**30 I/O**



**48 I/O**



**60 I/O**



For dimensions visit [www.cinch.com](http://www.cinch.com)



# SHS Headers/SHS Harness Connector Matrix

SHS Header	I/O	SHS Harness Connector Mate 1	SHS Harness Connector Mate 2
581 01 18 001	18	581 01 18 023	N/A
581 01 18 002	18	581 01 18 024	N/A
581 01 18 011	18	581 01 18 023	N/A
581 01 18 012	18	581 01 18 024	N/A
581 01 30 001	30	581 01 30 027	N/A
581 01 30 002	30	581 01 30 028	N/A
581 01 30 011	30	581 01 30 027	N/A
581 01 30 013	30	581 01 30 028	N/A
581 01 48 001	48	581 01 18 023	581 01 30 029
581 01 48 002	48	581 01 18 024	581 01 30 030
581 01 48 003	48	581 01 18 023	581 01 30 027
581 01 48 011	48	581 01 18 023	581 01 30 029
581 01 48 012	48	581 01 18 024	581 01 30 030
581 01 48 013	48	581 01 18 023	581 01 30 027
581 01 60 001	60	581 01 30 028	581 01 30 029
581 01 60 002	60	581 01 30 030	581 01 30 031
581 01 60 011	60	581 01 30 028	581 01 30 029
581 01 60 012	60	581 01 30 030	581 01 30 031

See page 15 for SHS Harness Connectors





# SHS Harness Connector

The SHS Harness Connector is the mate to ModICE™ and SHS Headers.

The SHS Connector Advantage:

- 2 connector sizes (18, 30 way)
- 1.5mm terminal technology
- Push-to-seat terminals
- Integrated wire grommet seals with protective back-plate
- Terminal position assurance
- Robust jack-post mating to the header



## Product Specification

**Operating Temperature:** -40°C to +125°C

**Current:** 10 Amp @ 85°C

**Contact Resistance:** < 10mΩ

**Insulation Resistance:** > 1000 MΩ

**Sealing:** IP67, IP69K

**Temperature Life:** 1000 Hrs @ 125°C

**Current Cycling:** 500Hrs @ 10 Amp

500 cycles 45 min ON – 15 min OFF

**Vibration:** 10 to 2000 to 10 Hz with 15 g's peak level

**Shock:** 50 g's – 20 pulses

**Salt Spray:** 96 Hrs

**Temperature Humidity Cycling:** 320 Hrs

40 – 8 Hrs cycles -40°C to +125°C

**Fluid Resistance:** Resists to most fluids used in industrial applications





# SHS Harness Connector



## Harness Connectors

Position	Connector	Color
18	581 01 18 023	Black
18	581 01 18 024	Natural
30	581 01 30 027	Grey
30	581 01 30 028	Black
30	581 01 30 029	Black
30	581 01 30 030	Natural
30	581 01 30 031	Natural

Connector 18 pos.

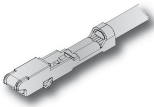


Connector 30 pos.



## Terminals

Wire Size	Terminal
20GXL, 18TXL	425 00 00 872
18GXL, 16TXL, 16GXL	425 00 00 873

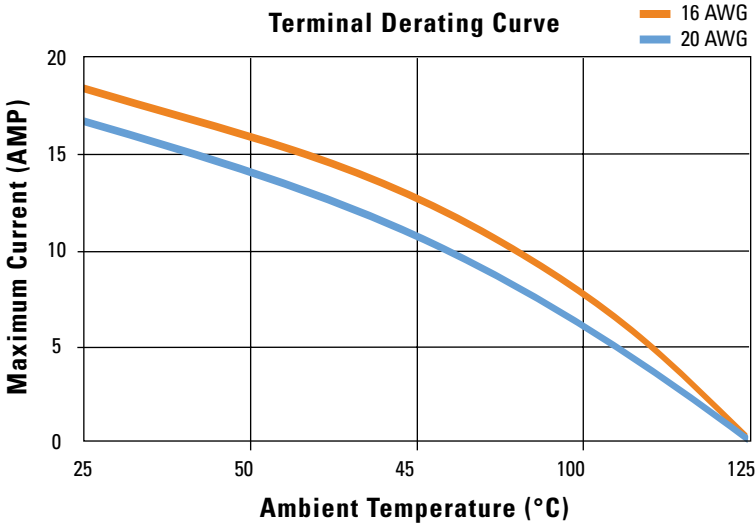


## Seal Plug

	Seal Plug
For connector 18 & 30 pos.	581 00 00 011



# SHS Harness Connector



## SHS Application Tooling

SHS Harness Connector Repair Tooling		
599 11 11 628	Secondary Lock removal Tool (Tweezer)	For connector 18 & 30 pos.
581 01 18 920	Terminal Removal Tool	For connector 18 & 30 pos.

SHS Harness Connector Crimp Tooling		
599 11 11 615	Hand Crimp Tool	For terminal 425 00 00 872
599 11 11 616	Hand Crimp Tool	For terminal 425 00 00 873
599 11 11 621	Applicator	For terminal 425 00 00 872
599 11 11 622	Applicator	For terminal 425 00 00 873
599 11 11 623	Punch/Anvil kit	For terminal 425 00 00 872
599 11 11 624	Punch/Anvil kit	For terminal 425 00 00 873

Crimp specification and connector assembly information is available at [www.cinch.com](http://www.cinch.com)



# Custom Products

## Connectors and Cable Assemblies

Over the years, Cinch has developed capabilities to support its customers most demanding applications. Our custom range of products include connectors and cable assemblies used in the Commercial Aircraft, Military/Aerospace, Supercomputing, On/Off Highway, Agriculture, and Industrial markets.

Please contact Cinch for your special connector and connectivity requirements.



**Connector Enclosure  
for Engine Controller**



**Cable Assemblies for 4WD  
Transmission Actuators**



**High Pin-Count Connector for  
Electronic Controller**



**RF Enclosure  
Telematics**



**Diesel Pressure Sensor Cap  
CIN::APSE Compression Technology**

# Cinch Products

## Cinch Capabilities

Cinch specializes in providing specialty interconnect and system solutions to the Commercial Transportation, Aerospace, Military and Defense, High End Computer, Oil & Gas and other industrial markets.. We provide custom solutions with our creative, hands on engineering and end to end approach.

### Industrial and Commercial Transportation



### MIL-C-26500 – Cylindrical Connectors: Omega



- Meets all requirements of MIL-C-26500.
- Qualified to “9” Boeing BACC45/BACC63 specifications.
- Satisfies general requirements and unique product challenges for shielding, environmental sealing, fluid resistance, and vibration.

### Fuel Quantity Indicating Systems



- ISO9001, AS9100, BQMS D6-82479 Approved
- Certificate of Compliance
- Airworthiness Approval Tag (FAA Form 8130-3)

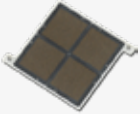


## Expanded Beam Fiber Optics



- Patented Active alignment production process to give superior performance
- Suitable for harsh environments
- Superior optical performance

## CIN::APSE Compression Interconnects



- High-speed electrical performance
- Multi-point contact design
- Custom configurations

## Microminiature-D Connectors: Dura-Con



- Meets and exceeds requirements for Mil-DTL-83513, available in all standard shell sizes and configurations.
- Available as part of harness assemblies manufactured by Cinch. Highly customizable to meet any application requirement.
- Hermetics available that meet 1X10<sup>-8</sup> at half the cost and time of traditional hermetic solutions.

## Military Cable Assemblies



- Designed to operate in harsh environmental conditions when subjected to high vibrations, shock and temperature extremes
- Available in simple point-to-point to more complex harnesses with multiple branches as well as flex circuitry
- Over 25 years experience in designing custom micro harnesses

## Commercial Connectors



Standard Products include: D-Subminiature, Circular Mini DIN Plugs, Edge Connectors, Jones/J Plugs and Sockets, and Barriers.

