

## ModICE® & SHS

Industrial and Commercial  
Transportation



**cinch**  
CONNECTIVITY SOLUTIONS  
a bel group

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[cinch.com](http://cinch.com)



## 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.

### ModICE & SHS

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# ModICE® Modular Connector Enclosures



ModICE® is a complete line of connector enclosures that offer 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



### 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:** 500 Hrs @ 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



# 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

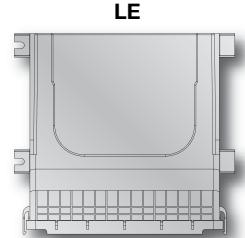
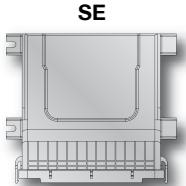
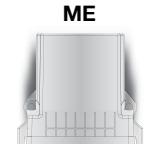
## LE

	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 Enclosures.



SE/LE Enclosure



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

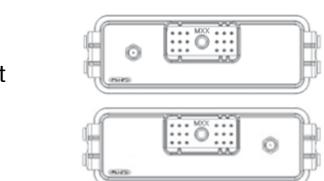
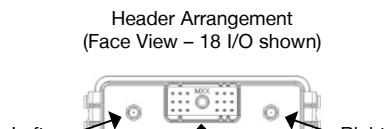
I/O	With Ferrite	Without Ferrite
30 I/O	581 01 30 051	581 01 30 045
48 I/O	581 01 48 008	581 01 48 006
60 I/O	581 01 60 006	581 01 60 005
Blank		581 00 00 028



# 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.



Features include:

- Main connector - 18 or 30 I/O (with or without ferrite)
- 1 or 2 SMA
- Standard or Reverse Polarity SMA ( $50\Omega$ )

## ME-RF Headers

# SMA	I/O	Left RF	Right RF	With Ferrite	Without Fer- rite
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

See page 6 for ME Enclosure part numbers



## ModICE® Tooling

ModICE Tooling	
Tool to assemble ModICE® SE	599 11 11 687
Tool to assemble ModICE® LE	599 11 11 688
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		Connector Mate 1	Connector Mate 2
581 01 18 xxx	ME, 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:** 500 Hrs @ 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

## 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



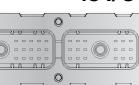
18 I/O



30 I/O



48 I/O



60 I/O



For dimensions visit [cinch.com](http://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:** 500 Hrs @ 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

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40 – 8 Hrs cycles -40°C to +125°C

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



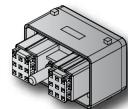
# SHS Harness Connector



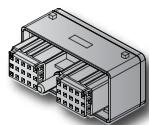
## Harness Connectors

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.



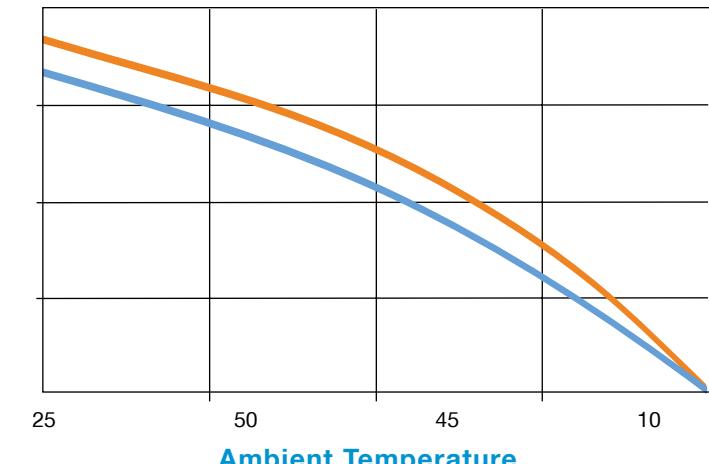
Connector 30 pos.



# SHS Harness Connector

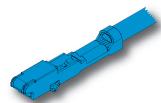


## Terminal Derating



## 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 Application

### 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 [cinch.com](http://cinch.com)



## Custom Capabilities

### 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



## Proven Excellence

For over 70 years, Cinch has been a supplier of quality connector and interconnect products to the computer, telecom, aerospace military and transportation industries. We are a multi-national manufacturer with facilities in the US, Mexico and the UK supplying global customers.

Cinch applies its extensive expertise in interconnection technology to engineer and manufacture connectors, cables and harnesses using state of the art technology and tooling. Mechanical design is accomplished using Pro/E 3D solid modeling supported by nonlinear and linear Finite Element Analysis and Mold Flow software.

Our engineers utilize in-house capabilities in high frequency interconnect simulation, SPICE model generation and high frequency testing to develop the optimum product.

All products are validated in Cinch's first article, mechanical, electrical, and environmental test facilities ensuring the finished products meet our customers' most stringent specifications.

Simply stated, your connectors are manufactured in state of the art facilities that are committed to customer satisfaction and continuous improvement.

### Cinch Connectivity Solutions

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