

SCHOTT  
glass made of ideas

SCHOTT®  
e-Compressor  
Terminals



# Enabling Development of High-Performance and High-Reliability e-Compressors

## The challenge

The requirements for compressors in electric and hybrid electric vehicles are demanding: they must function reliably to support comfortable air conditioning while handling high power consumption and high pressure loads. To work efficiently and reliably, e-Compressors must be hermetically sealed. The compressor terminals needed to feed the internal motors of electric compressors with power represent a potential weak point. The terminal seals must prevent refrigerant leakage while also enabling transfer of large amounts of energy from the battery to the air conditioning compressor.

## SCHOTT® e-Compressor Terminals

### The solution

SCHOTT's e-Compressor terminals are made using proven hermetic glass-to-metal sealing technology. They offer durable gas-tightness to be able to continuously function even under extreme environmental conditions such as high temperature, high pressure, high humidity, and vibration over a long period of time.

### Product Designs

Our flexible design enables SCHOTT compressor terminals to support various refrigerants, including R134a and R1234yf as well as R744(CO<sub>2</sub>) which requires high pressure resistance. SCHOTT uses glass, rubber, and / or ceramic as insulation materials to enable superior electrical insulation under adverse conditions and also offer optimal designs for preventing leakage.

### Advantages

#### High performance



High voltage capability  
800 V



High current capability  
30 A ~ 150 A



High pressure resistant  
20 MPa (CO<sub>2</sub>)

#### High reliability

- SCHOTT's **unique rubber insulation** design provides highly reliable electrical insulation and prevents harmful condensation
- SCHOTT is an **experienced supplier and partner**: more than 50 years of compressor terminal know-how and over 75 years of hermetic sealing expertise



Extended sealing glass insulation



Rubber insulation



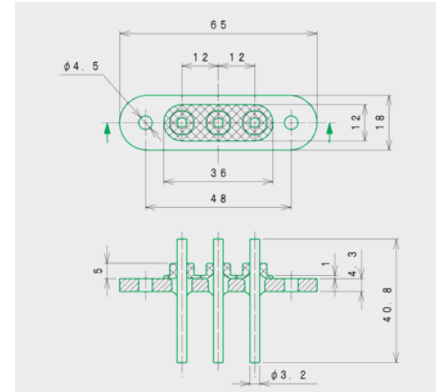
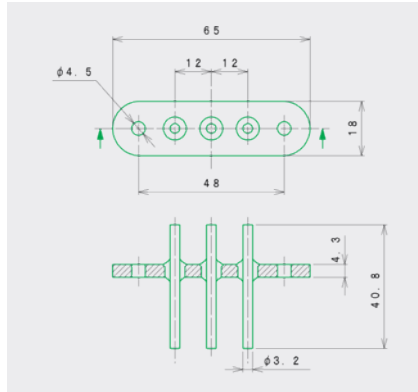
Ceramic insulation

### Characteristics

- Insulation Resistance:  
1000 M $\Omega$  min. at DC 500 V
- Pressure Resistance (air): 3.5 MPa min.
- Control of base surface roughness:  
Ra 1.6~3.2, Rz 12.5 ~

### Materials

- Pin: Fe-Cr, Copper cored Fe-Cr
- Eyelet: Fe
- Glass: Soda barium
- Insulation Material: Glass, Rubber, Ceramic



### Typical Conditions

Voltage	Electric Current	Pin Material	Insulation Material	
			Rubber	Ceramic
24 V ~ 48 V	30 A ~ 50 A	Cu Cored Fe-Cr	Optional	Optional
	50 A ~ 150 A	Cu	Optional	Optional
200 V ~ 500 V	20 A ~ 30 A	Fe-Cr	Yes	Yes
	30 A ~ 50 A	Cu Cored Fe-C	Yes	Yes
800 V	15 A ~ 30 A	Fe-Cr	Yes	Yes

SCHOTT offers terminal designs that meet exact customer specifications, so please contact us in this regard. e.g. Designs to high voltage (800 V-), Designs to support high current (150 A-), Pressure resistance (air) to 20 MPa min, etc.

## SCHOTT – A premier supplier for custom-designed, high-quality electric compressor terminals

**Trusted:** SCHOTT utilizes technologies and know-how accumulated in automotive applications, commercial air conditioning, and refrigeration compressors over many years and has been a leading developer and manufacturer of e-Compressor Terminals. SCHOTT's e-Compressor Terminals are used by world-leading automotive manufacturers and electric compressor manufacturers.

**Proven:** SCHOTT has been manufacturing hermetic housings and other components for the reliable, long-term protection of sensitive electronics based on SCHOTT's experience in glass-to-metal sealing technology since 1939. SCHOTT's compression glass-to-metal sealing technology is also proven in other safety-critical applications, such as automotive safety systems (airbags) and nuclear power plants.

**Custom design:** Working closely with customers, SCHOTT develops optimal solutions that meet specific product requirements. SCHOTT utilizes top-quality materials and offers customized electric compressor terminals.

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