

Limit Switch Connectors

Connectors (SC Series)

Cabtire cables and flexible tubes with various diameters are used to connect machine tools and controllers with Limit Switches. To ensure the watertightness of the edges of the conduits, use an SC Connector that is suitable for the external diameter of cable and model of Limit Switch.

Ordering Information

Connector for Cabtire Cable

Conduit	Applicable cable	Inner diameter (D) of seal rubber	External diameter of cable		Model	Applicable model
			Min.	Max.		
JIS B 0202 G½	Cabtire cable (general-purpose)	7 dia. mm	5.5 dia. mm	7.5 dia. mm	SC-1M	WL, D4A-□N, ZE, ZV, ZV2, ZB, D4B-□N
		9 dia. mm	7.5 dia. mm	9.5 dia. mm	SC-2M	
		12.5 dia. mm	11 dia. mm	13 dia. mm	SC-3M	
		14 dia. mm	12 dia. mm	14 dia. mm	SC-4M	
		11 dia. mm	9 dia. mm	11 dia. mm	SC-5M	
	Cabtire cable (anti-corrosive)	7 dia. mm	5.5 dia. mm	7.5 dia. mm	SC-21	
		9 dia. mm	7.5 dia. mm	9.5 dia. mm	SC-22	
		12.5 dia. mm	11 dia. mm	13 dia. mm	SC-23	
		14 dia. mm	12 dia. mm	14 dia. mm	SC-24	
		11 dia. mm	9 dia. mm	11 dia. mm	SC-25	
½-14NPT	Cabtire cable	7 dia. mm	5.5 dia. mm	7.5 dia. mm	SC-1PT	D4A-□N
		9 dia. mm	7.5 dia. mm	9.5 dia. mm	SC-2PT	
		12.5 dia. mm	11 dia. mm	13 dia. mm	SC-3PT	
		14 dia. mm	12 dia. mm	14 dia. mm	SC-4PT	
		11 dia. mm	9 dia. mm	11 dia. mm	SC-5PT	

Note: 1. Use SC-21 to SC-25 together with the rubber ring and conduit washer for the SC-P2.

2. It is necessary to use sealing tape with SC Connectors. SC-1M to SC-5M, however, are provided with an O-ring (NBR) and therefore sealing tape is not necessary to ensure a proper seal.

Simple Connector

Conduit	Applicable cable	Inner diameter (D) of seal rubber	External diameter of cable		Model	Applicable model
			Min.	Max.		
JIS B 0202 G½	Cabtire cable	10.6 dia. mm	8.5 dia. mm	10.5 dia. mm	SC-P2	WL, D4A-□N, ZE, ZV, ZV2, D4B-□N
Pg13.5		9.6 dia. mm	7.5 dia. mm	9.5 dia. mm	SC-P3	WL□-G, D4B-□N
JIS B 0202 G½		9 dia. mm	7.5 dia. mm	9 dia. mm	SC-6	WL, D4A-□N, ZE, ZV, ZV2, D4N *, D4N-□R *, D4B-□N

Note: The casings for SC-P2, -P3 and -6 are made of resin. If more sealing capability is required, use one of SC-1M to SC-5M, which have metal casings. Models marked with an asterisk (*) however, can only be used with resin connectors.

Dimensions and Structure

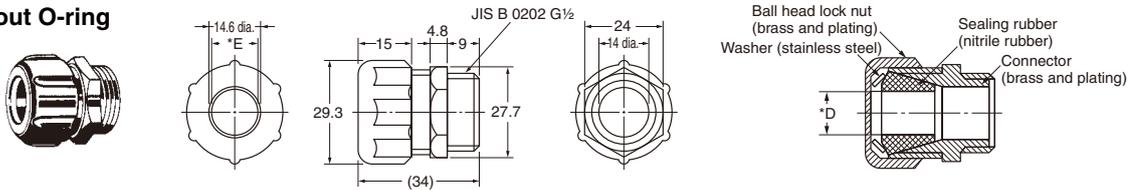
(Unit: mm)

Connectors for Cabtire Cable

SC-P2 accessories and sealing tape must be used together with models without an O-ring in order to prevent ingress of oil or water. Follow the instructions given under Conduits on page 4.

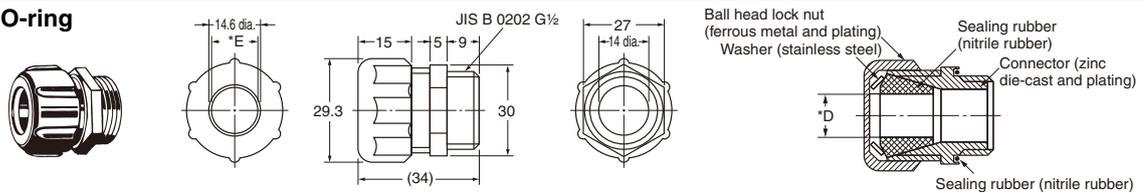
Metal Models without O-ring

G $\frac{1}{2}$
SC-21 to 25



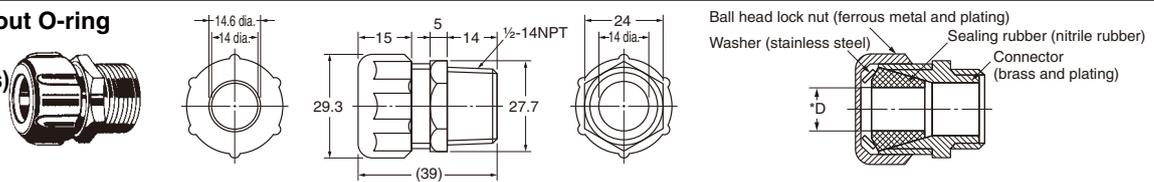
Metal Models with O-ring

G $\frac{1}{2}$
SC-1M to 5M



Metal Models without O-ring

$\frac{1}{2}$ -14NPT
(U.S.-standard screws)
SC-1PT to 5PT

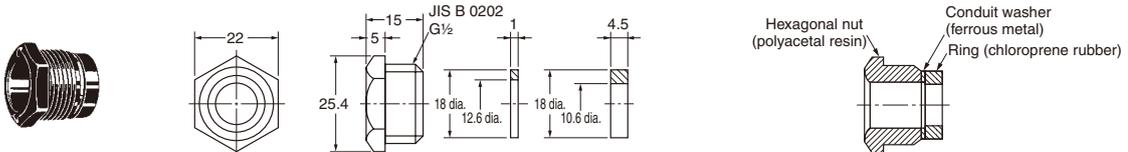


Note: Dimensions not shown in the above diagrams have a variation of ± 0.4 mm.

Simple Connectors (Not Suitable for Locations Subject to Oil or Water)

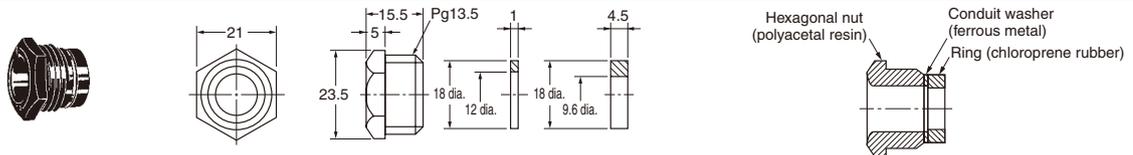
Resin Models

G $\frac{1}{2}$
SC-P2



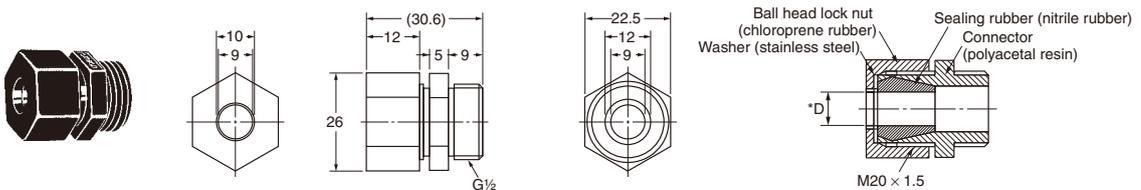
Resin Models

Pg13.5
SC-P3



Resin Models

G $\frac{1}{2}$
SC-6



Note: Dimensions not shown in the above diagrams have a variation of ± 0.4 mm.

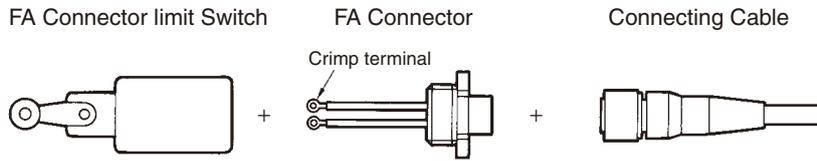
* Diameter of Part Marked with Asterisk

Model	Inner diameter (D) of sealed rubber	Internal diameter (E) of washer	Applicable cable
SC-21, -1M, -1PT	7 dia.	10.4 dia.	5.5 to 7.5 dia.
SC-22, -2M, -2PT	9 dia.	13.2 dia.	7.5 to 9.5 dia.
SC-23, -3M, -3PT	12.5 dia.	14.6 dia.	11 to 13 dia.
SC-24, -4M, 4PT	14 dia.	14.6 dia.	12 to 14 dia.
SC-25, -5M, -5PT	11 dia.	13.2 dia.	9 to 11 dia.
SC-6	9 dia.	10 dia.	7.5 to 9 dia.

SC-□F□ FA Connectors

The SC-□F□ is a snap-on connecting model that greatly reduces the time-consuming effort for wiring the Limit Switch. The SC-□F□ is easily and quickly connected or disconnected and its degree of protection is IP67.

Ordering Information



FA Connectors

Model	Number of conductors	Voltage specification	Size of conduit	Size of crimp terminal	Applicable model
SC-2F	2	125 VDC	JIS B 0202 G½	M4	WL
SC-2FAD	2	250 VAC			
SC-4F4D	4	125 VDC			
SC-4F4AD	4	250 VAC			

Connecting Cables



Voltage specification	Number of conductors	Cable length	Model
AC	2	2 m	XS2F-A421-DB0-A
		5 m	XS2F-A421-GB0-A
	4	2 m	XS2F-A421-D90-A
		5 m	XS2F-A421-G90-A
DC	2	2 m	XS2F-D421-DD0
		5 m	XS2F-D421-GD0
	4	2 m	XS2F-D421-D80-A
		5 m	XS2F-D421-G80-A

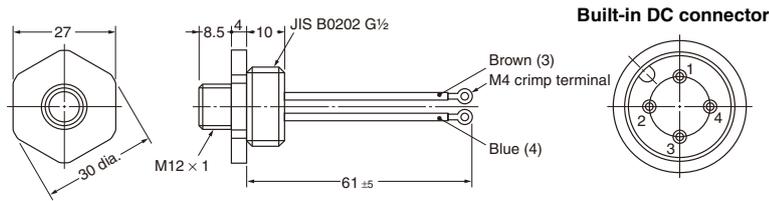
Connections to Sensor I/O Connectors

Voltage specification	Number of conductors	FA Connector	Sensor I/O Connector	Connection
AC	2	SC-2FAD	XS2F-A421-□B0-A ↑ D: 2-m cord G: 5-m cord	
	4	SC-4F4AD	XS2F-A421-□90-A ↑ D: 2-m cord G: 5-m cord	
DC	2	SC-2F	XS2F-D421-□D0 ↑ D: 2-m cord G: 5-m cord	
	4	SC-4F4D	XS2F-D421-□80-A ↑ D: 2-m cord G: 5-m cord	

Dimensions

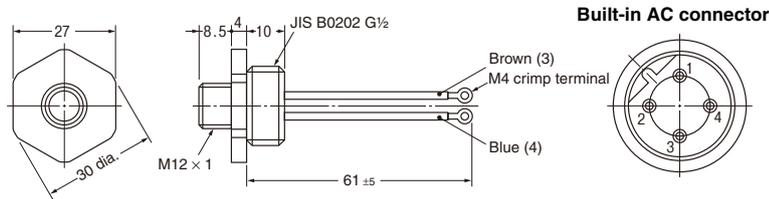
(Unit: mm)

SC-2F



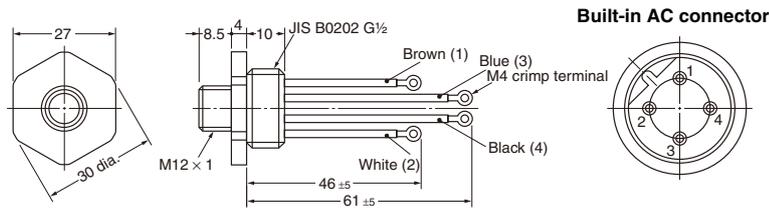
Built-in DC connector

SC-2FAD



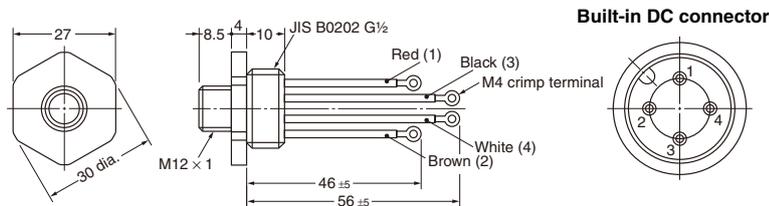
Built-in AC connector

SC-4F4AD



Built-in AC connector

SC-4F4D



Built-in DC connector

Note: 1. Each dimension has a tolerance of ± 0.4 mm unless otherwise specified.
2. Figures in parentheses are connector pin numbers.

Safety Precautions

Precautions for Correct Use

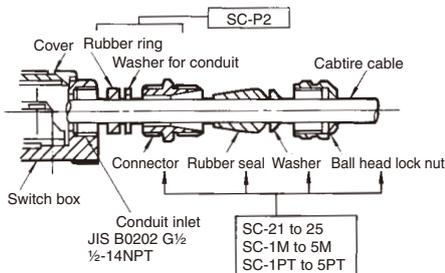
Conduits

Connector for Cabtire Cable/Flexible Tube

G $\frac{1}{2}$, $\frac{1}{2}$ -14NPT

To connect a Limit Switch with a connector, insert a rubber ring first and then a washer into the conduit inlet of the switch body, put a rubber seal, washer, and nut in this order onto the tapered part of the connector and tighten the nut securely. Then tighten the conduit inlet with the connector to maintain high sealing capability. Apply sealing tape to the edge of the connector on the conduit inlet side to increase sealing capability.

The SC-1M to SC-5M are provided with an O-ring, and so the rubber ring, conduit washer, and sealing tape are not required.



Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

Warranty and Limitations of Liability

WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS, OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

Application Considerations

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the product.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the product may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased product.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

ERRORS AND OMISSIONS

The information in this catalog has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

COPYRIGHT AND COPY PERMISSION

This catalog shall not be copied for sales or promotions without permission.

This catalog is protected by copyright and is intended solely for use in conjunction with the product. Please notify us before copying or reproducing this catalog in any manner, for any other purpose. If copying or transmitting this catalog to another, please copy or transmit it in its entirety.