
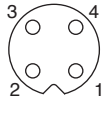
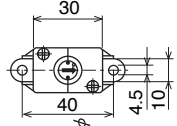

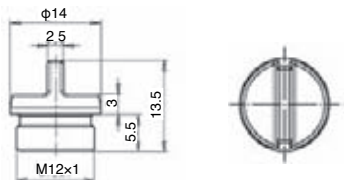

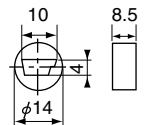



AS-Interface accessories

■ AS-i accessories


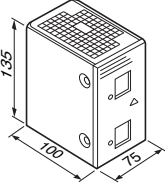

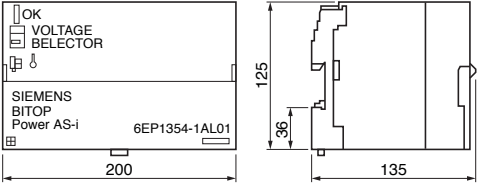


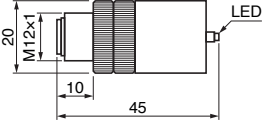

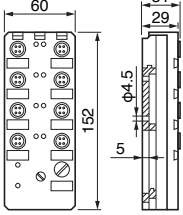

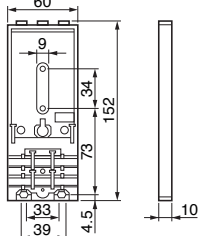
Description	Type															
<p>M12 branch connector</p> <ul style="list-style-type: none"> Adapts flat AS-i cable to round cable. Connection of AS-i cable by piercing  <p>AF97-580</p>  <table border="1" data-bbox="667 497 965 649"> <thead> <tr> <th>Pin No.</th> <th>Communications cable</th> <th>External power cable</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>AS-i +</td> <td>+ 24V</td> </tr> <tr> <td>2</td> <td>NC</td> <td>NC</td> </tr> <tr> <td>3</td> <td>AS-i -</td> <td>0V</td> </tr> <tr> <td>4</td> <td>NC</td> <td>NC</td> </tr> </tbody> </table> 	Pin No.	Communications cable	External power cable	1	AS-i +	+ 24V	2	NC	NC	3	AS-i -	0V	4	NC	NC	3RX9801-0AA00
Pin No.	Communications cable	External power cable														
1	AS-i +	+ 24V														
2	NC	NC														
3	AS-i -	0V														
4	NC	NC														
<p>Waterproof cap</p> <ul style="list-style-type: none"> Used to cover unused sockets of the waterproof slaves to satisfy IP67. Minimum order quantity: 10 pieces  <p>KK05-001</p> 	3RK1901-1KA00															
<p>Gasket Pg11 for AS-i cable</p> <ul style="list-style-type: none"> For insertion in Pg11 screwed glands Minimum order quantity: 10 pieces  <p>AF97-580</p> 	3RX9805-0AA00															
<p>Cable-end piece</p> <ul style="list-style-type: none"> Used when degree of protection IP67 is required. Minimum order quantity: 10 pieces  <p>KK04-096</p>	3RK1901-1MN00															

■ Output type of Fuji's FA sensor

Output	Description	Type
DC supply 3-wire NPN output	Inductive type proximity switch	Cylindrical type: PE1-C □ D, PE2-C □ D Square type: PE-B □ D Flat type: PE-T □ D Slot type: PE-U12D, PE-U25NT Compact square type: PE1B2P-D
	Photoelectric proximity switch	Optical fiber, amplifier built-in type: PH21A -P □ N Amplifier built-in type: PH1C □ - □, PH8AU- □
DC supply 3-wire PNP output	Inductive type proximity switch	Cylindrical type: PE1-C □ Q, PE2-C □ Q Square type: PE-B □ Q Flat type: PE-T □ Q
DC supply 2-wire	Inductive type proximity switch	Cylindrical type: PE1-C □ S, PE2-C □, PE2C-C □ S Square type: PE-B □ S Flat type: PE-T □ S
Contact output	Magnetically operated type	All types
	Photoelectric proximity switch	AC/DC input type: PH4C □ - □
	Limit switch	All types

Note: FA sensors with pre-wired connector are also available for connecting with waterproof slaves.

■ AS-i accessories (Manufacturer: Siemens)

Description	Type
<p>AS-i power supply</p> <p>Input voltage: 115/230V AC Output voltage: 30V DC Output current: 4A</p>  <p>KK04-093</p> 	<p>3RX9307-1AA00</p>
<p>AS-i power supply</p> <p>Input voltage: 120/230V AC Output voltage: 30V DC Output current: 4A</p>  <p>KK04-094</p> 	<p>6EP1354-1AL01</p>
<p>AS-i analyser</p> <p>Monitors and traces the AS-i network communications to reduce maintenance and analyzing cost greatly.</p> 	<p>3RK1904-3AB00</p>
<p>Extension plug</p> <p>Doubling of the cable length per AS-i segment from 100 to 200 meters Note: The AS-Interface Standard stipulates that the cable length per segment be max. 100m. It is recommended that you analyze your system with an AS-i analyser after you made system configuration.</p>  	<p>3RK1901-MX00</p>
<p>K60 compact module</p> <p>4-Input / 3-output PNP, A/B slave, Y-II assignment</p> <p>4-Input / 4-output PNP, Standard slave, Standard assignment</p>  	<p>3RK2400-1FQ03-0AA3</p> <p>3RK1400-1CQ00-0AA3</p>
<p>K60 mounting plate</p> <p>For wall mounting</p> <p>For rail mounting</p>  	<p>3RK1901-0CA00</p> <p>3RK1901-0CB00</p>

AS-Interface accessories

AS-Interface cables Siemens bland, 3RX90

■ Description

The AS-i cable is a two-core cable specially designed to connect AS-i devices. The yellow AS-i cable supplies 30V DC power to sensors and transfers data. The black AS-i cable can be used for 24V DC actuators (e.g., solenoid valves).

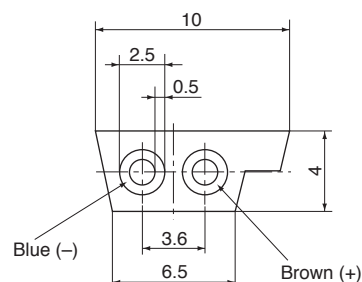
- A trapezoidal cross section is adopted to prevent polarity reversal.
- Three kinds of cable are available to suit environmental conditions: general-purpose (EPDM) and oil-tight (TPE, PUR) use.
- The connection uses the insulation piercing technology.
- The cable's insulation recovers after the connected slaves are detached.



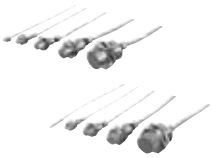






■ Ratings and specifications

Type	3RX9010-0AA00	3RX9013-0AA00	3RX9015-0AA00	3RX9020-0AA00	3RX9023-0AA00	3RX9025-0AA00
Application	AS-i communications, 30V DC			24V DC external power supply		
Environmental condition	General-purpose use	Oil-tight use		General-purpose use	Oil-tight use	
Cable color	Yellow			Black		
Cable sheath material (DIN VDE 0207)	Ethylene Propylene Diene Monomer (EPDM)	Thermoplastic Elastomers (TPE)	Polyurethane (PUR)	Ethylene Propylene Diene Monomer (EPDM)	Thermoplastic Elastomers (TPE)	Polyurethane (PUR)
Sheath color of core	Brown (AS-i (+)), Blue (AS-i (-))			Brown (24V DC (+)), Blue (0V)		
Core cross-section (DIN VDE 0295)	2 x 1.5mm ²			2 x 1.5mm ²		
Cable length per packing	100m roll			100m roll		
Operating temperature	-25 to +85°C	-30 to +105°C	-20 to +90°C	-25 to +85°C	-30 to +105°C	-20 to +90°C
Storage temperature	-40 to +85°C	-40 to +105°C	-40 to +90°C	-40 to +85°C	-40 to +105°C	-40 to +90°C
Smallest permissible bending radius (DIN VDE 0298 Part 300)	Fixed installed: 12mm Freely movable: 24mm			Fixed installed: 12mm Freely movable: 24mm		
Bending performance (DIN VDE 0472 Part 603)	No break after 30,000 back and forward movements			No break after 30,000 back and forward movements		
Behavior in fire (DIN VDE 0472 Part 804 test B)	Flammable	Flame-resistant		Flammable	Flame-resistant	
Halogen free	Yes	Halogen material contained		Yes	Halogen material contained	
Ozone and weather resistance	Non-resisting	Resisting		Non-resisting	Resisting	
Oil resistance	Non-resisting	Resisting		Non-resisting	Resisting	
Water soluble cutting fluid resistance	Resisting	Non-resisting	Resisting	Resisting	Non-resisting	Resisting
Approval	—	UL1581, UL758 CSA22.2 cUL No.210.2	—	—	UL1581, UL758 CSA22.2 cUL No.210.2	—

■ Dimensions, mm



Introduction to FUJI FA sensors

<p>Inductive proximity switches-Cylindrical type (PE1-C, Y, PE2-C, PE2C)</p>  <p>KK02-298A</p>	<ul style="list-style-type: none"> ■ PE1-C, Y type series <ul style="list-style-type: none"> • A compact, advanced-function series with a dedicated IC. • Provided with a short-circuit protection circuit as standard equipment (except for the 2-wire AC type and PE1-□08E type). • The 2-wire DC type suppresses leak current to 0.8mA max. and the 2-wire AC type suppresses leak current to 1.5mA max. ■ PE2-C type series <ul style="list-style-type: none"> • Four types are available: a 3-wire DC type with NPN output, a 3-wire DC type with PNP output, a 2-wire DC type, and a 2-wire AC/DC type. • Incorporates a two-color LED that ensures easy and reliable detection distance setting. ■ PE2 C-C type series (Connector type) <ul style="list-style-type: none"> • Allows sensor replacement without removing wires. 	<table border="1"> <thead> <tr> <th rowspan="2">Type</th> <th colspan="8">Operating distance (mm)</th> </tr> <tr> <th>0.8</th> <th>1.5</th> <th>2/3</th> <th>4/5</th> <th>7/8</th> <th>10</th> <th>14</th> <th>20</th> <th>24</th> </tr> </thead> <tbody> <tr> <td>PE1-□ D/Q</td> <td></td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> </tr> <tr> <td>PE1-□ S/A</td> <td></td> <td></td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> </tr> <tr> <td>PE1-□ S/D/Q</td> <td></td> <td></td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> </tr> <tr> <td>PE2-□ W</td> <td></td> <td></td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> </tr> <tr> <td>PE2C-□ S</td> <td></td> <td></td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> </tr> <tr> <td>PE2-CTS □ S</td> <td></td> <td></td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> </tr> </tbody> </table>	Type	Operating distance (mm)								0.8	1.5	2/3	4/5	7/8	10	14	20	24	PE1-□ D/Q		●	●	●	●	●	●	●	●	PE1-□ S/A			●	●	●	●	●	●	●	PE1-□ S/D/Q			●	●	●	●	●	●	●	PE2-□ W			●	●	●	●	●	●	●	PE2C-□ S			●	●	●	●	●	●	●	PE2-CTS □ S			●	●	●	●	●	●	●
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<p>Inductive proximity switches-Square type (PE-B, G, PE1B2P, PE-RS4P)</p>  <p>SK-584-7, AF94-163, AF90-850</p>	<ul style="list-style-type: none"> ■ PE-B series <ul style="list-style-type: none"> • The wide model range extends from a subminiature type with a detecting distance of 4mm to a long-distance type with a detecting distance of 50mm. • Four types are available: a 3-wire DC type with NPN output, a 3-wire DC type with PNP output, a 2-wire DC type, and a 2-wire AC/DC type. ■ PE-G series <ul style="list-style-type: none"> • The mounting space is 1/2 the required space of the PE-B. ■ PE1 B-2P series <ul style="list-style-type: none"> • The mounting space is 1/4 the required space of the PE-B. 	<table border="1"> <thead> <tr> <th rowspan="2">Type</th> <th colspan="7">Operating distance (mm)</th> </tr> <tr> <th>2.5</th> <th>4</th> <th>7</th> <th>10, 15*</th> <th>20</th> <th>30</th> <th>50</th> </tr> </thead> <tbody> <tr> <td>PE-B □ D/Q/S/A</td> <td></td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> </tr> <tr> <td>PE1-G4D</td> <td></td> <td>●</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>PE1B2P-D</td> <td>●</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>* PE-B □ D type only</p>	Type	Operating distance (mm)							2.5	4	7	10, 15*	20	30	50	PE-B □ D/Q/S/A		●	●	●	●	●	●	PE1-G4D		●						PE1B2P-D	●																																													
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<p>Inductive proximity switches-Slim type (PE-T)</p>  <p>SK-1161</p>	<ul style="list-style-type: none"> • Gang mounting is possible (in combination with PE-TS2 units that differ in frequency). • A thin profile of 12mm. • Side mounting and rear mounting are both possible. • The DC2 type suppresses leak current to 0.8mA max. 	<table border="1"> <thead> <tr> <th rowspan="2">Type</th> <th colspan="2">Operating distance (mm)</th> <th rowspan="2"></th> </tr> <tr> <th>2</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>PE-T □ D</td> <td>●</td> <td>●</td> <td>NPN output</td> </tr> <tr> <td>PE-T □ Q</td> <td>●</td> <td>●</td> <td>PNP output</td> </tr> <tr> <td>PE-T □ S</td> <td>●</td> <td>●</td> <td>DC supply/2-wire</td> </tr> <tr> <td>PE-T □ A</td> <td>●</td> <td>●</td> <td>AC supply/2-wire</td> </tr> </tbody> </table>	Type	Operating distance (mm)			2	4	PE-T □ D	●	●	NPN output	PE-T □ Q	●	●	PNP output	PE-T □ S	●	●	DC supply/2-wire	PE-T □ A	●	●	AC supply/2-wire																																																								
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<p>Optical fiber type photoelectric switches (PH21A)</p>  <p>AF90-790</p>	<ul style="list-style-type: none"> • The amplifier unit is as thin as 11mm (71% of the thickness of previous Fuji Electric models). • The fiber unit can be mounted and dismantled with a flip of the lever. • Equipped with a fine-tuning dial as standard equipment, for precise sensitivity adjustment. • Equipped with a logic switch as standard equipment, for dark-on/light-on selection. • Gang mounting is possible. The thin profile also saves considerable space. • Uses three types of LEDs (red, green, and infrared). 	<table border="1"> <thead> <tr> <th>Type</th> <th>Light emitting element</th> <th>Detecting distance function</th> <th>Output</th> </tr> </thead> <tbody> <tr> <td>Amplifier unit</td> <td></td> <td></td> <td></td> </tr> <tr> <td>PH21A-PRN</td> <td>Red LED</td> <td rowspan="2">Standard Timer, self-diagnosis output</td> <td>NPN output</td> </tr> <tr> <td>PH21A-PGN</td> <td>Green LED</td> <td>NPN output</td> </tr> <tr> <td>PH21A-PIN</td> <td>Infrared LED</td> <td></td> <td>NPN output</td> </tr> <tr> <td>PH21A-PRND</td> <td>Red LED</td> <td></td> <td></td> </tr> <tr> <td>PH21A-PGND</td> <td>Green LED</td> <td></td> <td></td> </tr> <tr> <td>PH21A-PIND</td> <td>Infrared LED</td> <td></td> <td></td> </tr> </tbody> </table>	Type	Light emitting element	Detecting distance function	Output	Amplifier unit				PH21A-PRN	Red LED	Standard Timer, self-diagnosis output	NPN output	PH21A-PGN	Green LED	NPN output	PH21A-PIN	Infrared LED		NPN output	PH21A-PRND	Red LED			PH21A-PGND	Green LED			PH21A-PIND	Infrared LED																																																	
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<p>Photoelectric switches with built-in amplifier (PH1C)</p>  <p>XX03-014A, XX03-015A</p>	<ul style="list-style-type: none"> • Downsized with higher performance in comparison with the previous PH2 type. • Logic changes can be easily made with the logic switch on the unit. • The degree of protection satisfies IEC IP67 requirements. • The retroreflective type includes a mirror surface detection function as standard equipment. 	<table border="1"> <thead> <tr> <th>Type</th> <th>Detecting method</th> <th>Detecting distance</th> <th>Output</th> </tr> </thead> <tbody> <tr> <td>PH1CT-□ D □</td> <td>Transmission type</td> <td>10mm</td> <td>NPN output</td> </tr> <tr> <td>PH1CR-□ D □</td> <td>Retroreflective type</td> <td>0.1 to 4m</td> <td>NPN output</td> </tr> <tr> <td>PH1CD-□ D □</td> <td>Diffuse reflection type</td> <td>1m</td> <td>NPN output</td> </tr> </tbody> </table>	Type	Detecting method	Detecting distance	Output	PH1CT-□ D □	Transmission type	10mm	NPN output	PH1CR-□ D □	Retroreflective type	0.1 to 4m	NPN output	PH1CD-□ D □	Diffuse reflection type	1m	NPN output																																																														
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<p>Slot-type photoelectric switches (PH8AU)</p>  <p>KK02-303A</p>	<ul style="list-style-type: none"> • A groove type suitable for conveyance applications, such as elevators. • Mounting is compatible with the PM1U groove-type magnetic proximity switch. • The degree of protection satisfies IEC IP66 requirements. • A free power supply type with a voltage range of 10 to 30V DC. 	<table border="1"> <thead> <tr> <th>Type</th> <th>Detecting method</th> <th>Detecting distance</th> <th>Output</th> </tr> </thead> <tbody> <tr> <td>PH8-AU</td> <td>Transmission type</td> <td>30mm (Slot width) Dark-ON Light-ON</td> <td>NPN open collector output</td> </tr> </tbody> </table>	Type	Detecting method	Detecting distance	Output	PH8-AU	Transmission type	30mm (Slot width) Dark-ON Light-ON	NPN open collector output																																																																						
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<p>Photoelectric switches with AC/DC input (PH4C)</p>  <p>XX03-003A</p>	<ul style="list-style-type: none"> • A free power supply type driven by AC or DC. • A retroreflective type with mirror surface detection function is available, which accurately detects glossy objects. • Bears CE markings. 	<table border="1"> <thead> <tr> <th>Type</th> <th>Detecting method</th> <th>Detecting distance</th> <th>Output</th> </tr> </thead> <tbody> <tr> <td>PH4CT-5 □</td> <td>Transmission type</td> <td>5m</td> <td>Contact output 1c</td> </tr> <tr> <td>PH4CR-4M □</td> <td>Retroreflective type</td> <td>4m</td> <td>Contact output 1c</td> </tr> <tr> <td>PH4CR-2H □</td> <td>Retroreflective type</td> <td>2.5m, Mirror surface rejection</td> <td>Contact output 1c</td> </tr> <tr> <td>PH4CD-3C □</td> <td>Diffuse reflection type</td> <td>30cm</td> <td>Contact output 1c</td> </tr> </tbody> </table>	Type	Detecting method	Detecting distance	Output	PH4CT-5 □	Transmission type	5m	Contact output 1c	PH4CR-4M □	Retroreflective type	4m	Contact output 1c	PH4CR-2H □	Retroreflective type	2.5m, Mirror surface rejection	Contact output 1c	PH4CD-3C □	Diffuse reflection type	30cm	Contact output 1c																																																										
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<p>Forced contact opening limit switches (AL, AL-S series)</p>	<ul style="list-style-type: none"> ■ AL type <ul style="list-style-type: none"> • A vertical general-purpose type. • Equipped with a contact forcible separation mechanism as standard equipment. • Provided with a double packing structure as an optimal oil and sludge countermeasure. ■ AL-S type <ul style="list-style-type: none"> • A vertical compact type. 	<table border="1"> <thead> <tr> <th>Type</th> <th>Standard</th> <th>Compact</th> </tr> </thead> <tbody> <tr> <td>AL-□</td> <td>●</td> <td></td> </tr> <tr> <td>AL-S □</td> <td></td> <td>●</td> </tr> </tbody> </table>	Type	Standard	Compact	AL-□	●		AL-S □		●																																																																					
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<p>Momentary-contact limit switches (K244 series)</p>	<ul style="list-style-type: none"> • Ideal as a safety control switch for machine tools and printing presses. • A variety of contact forms match a wide range of applications. 	<table border="1"> <thead> <tr> <th>Type</th> <th>Standard</th> <th>Reversing roller</th> <th>Scrubbing contact</th> <th>Bifurcated contact</th> </tr> </thead> <tbody> <tr> <td>K244 □ -2 □</td> <td>●</td> <td></td> <td></td> <td></td> </tr> <tr> <td>K244 □ A-2 □</td> <td></td> <td>●</td> <td></td> <td></td> </tr> <tr> <td>KH244 □ -2 □</td> <td></td> <td></td> <td>●</td> <td></td> </tr> <tr> <td>WK244 □ -2 □</td> <td></td> <td></td> <td></td> <td>●</td> </tr> </tbody> </table>	Type	Standard	Reversing roller	Scrubbing contact	Bifurcated contact	K244 □ -2 □	●				K244 □ A-2 □		●			KH244 □ -2 □			●		WK244 □ -2 □				●																																																					
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