

## Product Discontinuation Notices

Photoelectric Sensors

Issue Date  
April 12<sup>th</sup>, 2024

20240325\_DOP\_00002

### Discontinuation Notice of Photoelectric Sensors E3F1 series

#### Product Discontinuation

##### PHOTOELECTRIC SWITCH

E3F1-TN11 2M  
E3F1-RN11 2M  
E3F1-DN11 2M  
E3F1-DN12 2M  
E3F1-TN21  
E3F1-RN21  
E3F1-DN21  
E3F1-DN22  
E3F1-TP11 2M  
E3F1-RP11 2M  
E3F1-DP11 2M  
E3F1-DP12 2M  
E3F1-TP21  
E3F1-RP21  
E3F1-DP21  
E3F1-DP22  
E3F1-DP22-10  
E3F1-DP21-10  
E3F1-RP21-10



#### Recommended Replacement

##### PHOTOELECTRIC SWITCH

E3FA-TN11 2M  
E3FA-RN11 2M  
E3FA-DN11 2M  
E3FA-DN12 2M  
E3FA-TN21  
E3FA-RN21  
E3FA-DN21  
E3FA-DN22  
E3FA-TP11 2M  
E3FA-RP11 2M  
E3FA-DP11 2M  
E3FA-DP12 2M  
E3FA-TP21  
E3FA-RP21  
E3FA-DP21  
E3FA-DP22  
Plan to release  
No recommended replacement  
Plan to release

#### [ Final order entry date ]

The end of January, 2025

#### [ Date of The Last Shipping ]

The end of April, 2025

#### [ Difference from discontinued product ]

Recommended replacement Model	Body Color	Dimensions	Wire connection	Characteristics
E3FA series	**	**	**	**

\*\* : Compatible

\* : The change is a little/Almost compatible



-- : Not compatible

- : No corresponding specification

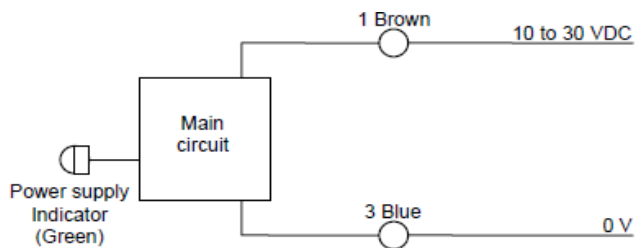
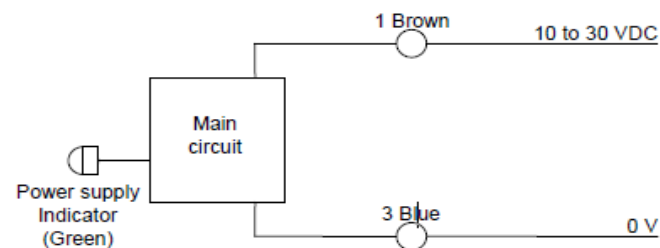
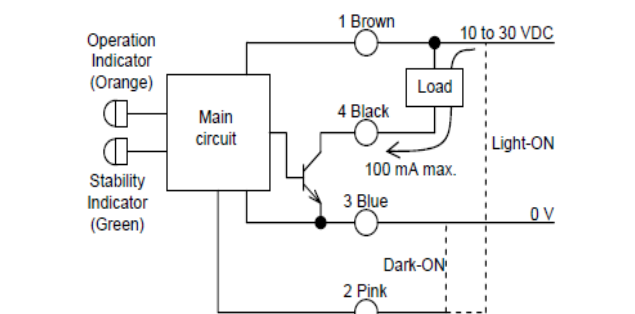
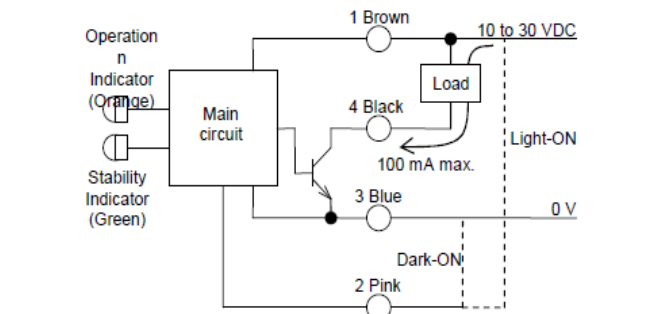
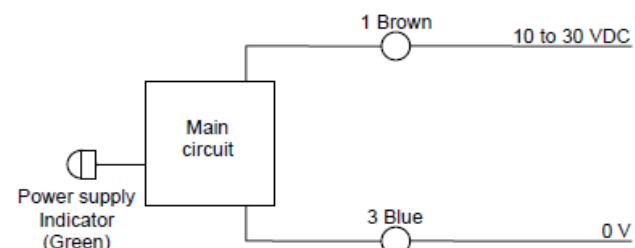
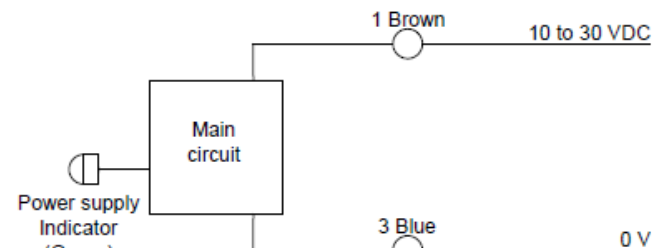
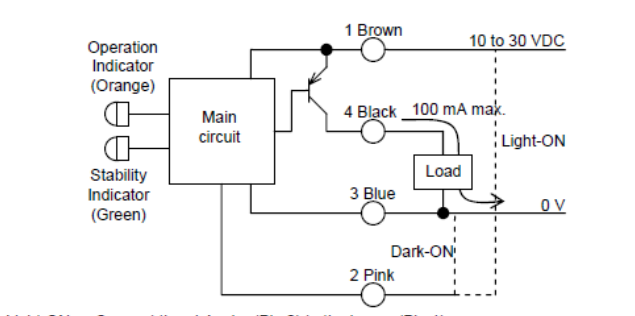
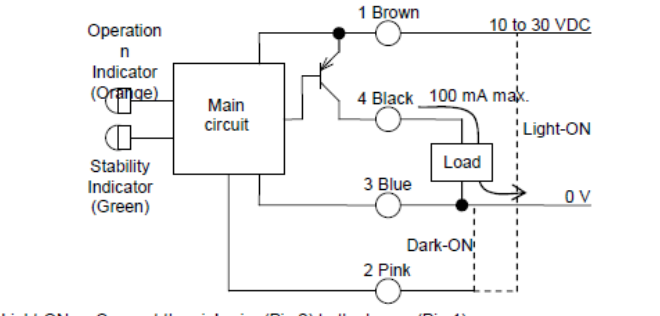
**[Product Discontinuation and recommended replacement ]**

Product discontinuation	Recommended replacement
E3F1-TN11 2M	E3FA-TN11 2M
E3F1-RN11 2M	E3FA-RN11 2M
E3F1-DN11 2M	E3FA-DN11 2M
E3F1-DN12 2M	E3FA-DN12 2M
E3F1-TN21	E3FA-TN21
E3F1-RN21	E3FA-RN21
E3F1-DN21	E3FA-DN21
E3F1-DN22	E3FA-DN22
E3F1-TP11 2M	E3FA-TP11 2M
E3F1-RP11 2M	E3FA-RP11 2M
E3F1-DP11 2M	E3FA-DP11 2M
E3F1-DP12 2M	E3FA-DP12 2M
E3F1-TP21	E3FA-TP21
E3F1-RP21	E3FA-RP21
E3F1-DP21	E3FA-DP21
E3F1-DP22	E3FA-DP22
E3F1-DP22-10	Plan to release
E3F1-DP21-10	No recommended replacement
E3F1-RP21-10	Plan to release

**[ Body color ]**

Product discontinuation E3F1 series	Recommendable replacement E3FA series
<p>Case: black</p> 	<p>Case: black</p> 

**[Wire connection ]**

<p align="center"><b>Product discontinuation E3F1 series</b></p>	<p align="center"><b>Recommendable replacement E3FA series</b></p>
<p>NPN type Through-beam Emitter type: E3F1-TN**-L</p> 	<p>NPN type Through-beam Emitter type: E3FA-TN**-L</p> 
<p>Through-beam Receiver type: E3F1-TN**-D Diffuse-reflective type: E3F1-DN** Retro-reflective type E3F1-RN**</p>  <p>Light-ON --- Connect the pink wire (Pin 2) to the brown (Pin 1) or open the pink wire (Pin 2) Dark-ON --- Connect the pink wire (Pin 2) to the blue (Pin 3)</p>	<p>Through-beam Receiver type: E3FA-TN**-D Diffuse-reflective type: E3FA-DN** Retro-reflective type E3FA-RN**</p>  <p>Light-ON --- Connect the pink wire (Pin 2) to the brown (Pin 1) or open the pink wire (Pin 2) Dark-ON --- Connect the pink wire (Pin 2) to the blue (Pin 3)</p>
<p>PNP type Through-beam Emitter type: E3F1-TP**-L</p> 	<p>PNP type Through-beam Emitter type: E3FA-TP**-L</p> 
<p>Through-beam Receiver type: E3F1-TP**-D Diffuse-reflective type: E3F1-DP** Retro-reflective type E3F1-RP**</p>  <p>Light-ON --- Connect the pink wire (Pin 2) to the brown (Pin 1) Dark-ON --- Connect the pink wire (Pin 2) to the blue (Pin 3) or open the pink wire (Pin 2)</p>	<p>Through-beam Receiver type: E3FA-TP**-D Diffuse-reflective type: E3FA-DP** Retro-reflective type E3FA-RP**</p>  <p>Light-ON --- Connect the pink wire (Pin 2) to the brown (Pin 1) Dark-ON --- Connect the pink wire (Pin 2) to the blue (Pin 3) or open the pink wire (Pin 2)</p>

**[ Characteristics ]**

Item	Product discontinuation E3F1 series	Recommendable replacement E3FA series
<b>Sensing distance</b>	E3F1-TN11/TN21/TP11/TP21:15 m E3F1-RN11/RN21/RP11/RP21: 0.1 to 3 m (with E39-R1S) E3F1-DN11/DN21/DP11/DP21: 100 mm (white paper: 300×300 mm) E3F1-DN12/DN22/DP12/DP22: 300 mm (white paper: 300×300 mm)	E3FA-TN11/TN21/TP11/TP21:20m E3FA-RN11/RN21/RP11/RP21: 0.1 to 4 m (with E39-R1S) E3FA-DN11/DN21/DP11/DP21:100 mm (white paper:300×300 mm) E3FA-DN12/DN22/DP12/DP22: 300 mm (white paper:300×300mm)
<b>Light source (wavelength)</b>	Red LED (624 nm)	Red LED (624 nm)
<b>Power supply voltage</b>	10 to 30 VDC (include voltage ripple of 10%(p-p) max.)	10 to 30 VDC (include voltage ripple of 10%(p-p) max.)
<b>Current consumption</b>	E3F1-TN11/TN21/TP11/TP21: 40 mA max (Emitter 25 mA max. Receiver 15 mA max.) E3F1-RN11/RN21/RP11/RP21:25 mA max. E3F1-DN11/DN21/DP11/DP21:25mA max. E3F1-DN12/DN22/DP12/DP22:25mA max.	E3FA-TN11/TN21/TP11/TP21: 40 mA max. (Emitter 25 mA max. Receiver 15 mA max.) E3FA-RN11/RN21/RP11/RP21:25 mA max. E3FA-DN11/DN21/DP11/DP21:25mA max. E3FA-DN12/DN22/DP12/DP22:25mA max.
<b>Control output</b>	NPN/PNP (open collector) Load current: 100 mA max. (Residual voltage: 3 V max.), Load power supply voltage: 30 VDC max.	NPN/PNP (open collector) Load current: 100 mA max. (Residual voltage: 3 V max.), Load power supply voltage: 30 VDC max.
<b>Operation mode</b>	Light-ON/Dark-ON selectable by wiring	Light-ON/Dark-ON selectable by wiring
<b>Indicator</b>	Operation indicator (orange) Stability indicator (green) Power indicator (green): only Emitter of Through-beam	Operation indicator (orange) Stability indicator (green) Power indicator (green): only Emitter of Through-beam
<b>Protection circuits</b>	Reversed power supply polarity protection, Output short-circuit protection and Reversed output polarity protection	Power supply reverse polarity protection, Output short-circuit protection, and Output reverse polarity protection
<b>Response time</b>	0.5 ms	0.5 ms
<b>Sensitivity adjustment</b>	One-turn adjuster	One-turn adjuster
<b>Ambient illumination (Receiver side)</b>	--	Incandescent lamp: 3,000 lx max./ Sunlight: 10,000 lx max.
<b>Ambient temperature range</b>	Operating: -25 to 55°C/ Storage: -30 to 70°C (with no icing or condensation)	Operating: -25 to 55°C/ Storage: -40 to 70°C (with no icing or condensation)
<b>Ambient humidity range</b>	Operating: 35 to 85%RH/ Storage: 35 to 95%RH (with no condensation)	Operating: 35 to 85%/ Storage: 35 to 95% (with no condensation)
<b>Insulation resistance</b>	20 MΩ min. at 500 VDC	20 MΩ min. at 500 VDC
<b>Dielectric strength</b>	1,000 VAC at 50/60 Hz for 1 min between charged parts and the case	1,000 VAC at 50/60 Hz for 1 min between current-carrying parts and case

Item	Product discontinuation E3F1 series	Recommendable replacement E3FA series
Vibration resistance	Destruction: 10 to 55 Hz, 1.5 mm double amplitude for 2 hours each in X, Y and Z directions	Destruction: 10 to 55 Hz, 1.5 mm double amplitude for 2 hours each in X, Y and Z directions
Shock resistance	Destruction: 500 m/s <sup>2</sup> 3 times each in X, Y and Z directions	Destruction: 500 m/s <sup>2</sup> 3 times each in X, Y and Z directions

[ Dimensions ]

Product discontinuation E3F1 series	Recommendable replacement E3FA series																				
<p>E3F1-TN11/TP11, E3F1-RN11/RP11 E3F1-DN11/DP11, E3F1-DN12/DP12 <b>Pre-wired Models</b></p> <p><b>Suitable models</b> E3F1-T□11 E3F1-R□11 E3F1-D□11</p> <p><b>* Suitable models</b> E3F1-T□11-D E3F1-R□12 E3F1-D□11</p>	<p>E3FA-TN11/TP11, E3FA-RN11/RP11 E3FA-DN11/DP11, E3FA-DN12/DP12 <b>Pre-wired Models</b></p> <p><b>Suitable models</b> E3FA-T□1□ E3FA-R□1□ E3FA-B□11</p> <p><b>* Suitable models</b> E3FA-T□1□-D E3FA-R□1□ E3FA-D□1□</p>																				
<p>E3FA-TN21/TP21, E3FA-RN21/RP21 E3FA-DN21/DP21, E3FA-DN22/DP22 <b>M12 Connector Models</b></p> <p><b>Suitable models</b> E3F1-T□21 E3F1-R□21 E3F1-D□21</p> <p><b>* Suitable models</b> E3F1-T□21-D E3F1-R□22 E3F1-D□21</p> <table border="1"> <thead> <tr> <th>Terminal No.</th> <th>Specification</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>+V</td> </tr> <tr> <td>2</td> <td>L/on · D/on selectable</td> </tr> <tr> <td>3</td> <td>0V</td> </tr> <tr> <td>4</td> <td>Output</td> </tr> </tbody> </table>	Terminal No.	Specification	1	+V	2	L/on · D/on selectable	3	0V	4	Output	<p>E3FA-TN21/TP21, E3FA-RN21/RP21 E3FA-DN21/DP21, E3FA-DN22/DP22 <b>M12 Connector Models</b></p> <p><b>Suitable models</b> E3FA-T□2□ E3FA-R□2□ E3FA-B□21</p> <p><b>* Suitable models</b> E3FA-T□2□-D E3FA-R□2□ E3FA-D□2□</p> <table border="1"> <thead> <tr> <th>Terminal No.</th> <th>Specification</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>+V</td> </tr> <tr> <td>2</td> <td>L/on · D/on selectable</td> </tr> <tr> <td>3</td> <td>0V</td> </tr> <tr> <td>4</td> <td>Output</td> </tr> </tbody> </table>	Terminal No.	Specification	1	+V	2	L/on · D/on selectable	3	0V	4	Output
Terminal No.	Specification																				
1	+V																				
2	L/on · D/on selectable																				
3	0V																				
4	Output																				
Terminal No.	Specification																				
1	+V																				
2	L/on · D/on selectable																				
3	0V																				
4	Output																				

Specifications and prices in this product news are as of the issue date and are subject to change without notice. Only main changes in specifications are described in this document. Please be sure to read the relevant catalogs, datasheets, product specifications, instructions, and manuals for precautions and necessary information when using products.