TFP・TTFP・TFE Series
Product Line-up/ Common Specifications/ Materials

Screw terminal block（Rail-mount）

Product Line-up

■Finger ProtectionTerminal block

The Finger Protection terminal block is designed with safety in mind and does not require a separate terminal cover. Its finger-protect structure completely shields the live parts of the terminals, making it ideal when enhanced safety is required.
・A globally compliant product conforming to cULus and EN/IEC standards. In addition, it meets UL field wiring requirements and is certified by TÜV for IP20 protection.
・The protection grade by IEC 60529 protection grade is IP20.
・A version that can be grounded to a steel rail (TFE series) is also available. The body color is two-tone green and amber, making it easy to distinguish from standard terminals.
・The terminal screws employ a spring-loaded type (not touch-lock type).

Series Name	Abstract	Rated Insulation Voltage	Ratings[Note1]	Terminal screw[Note2]	Product Name	Rough Weight per 1 pole
TFP	A finger-protect type terminal block compliant with UL field wiring requirements and TÜV IP20 standards. The body color is gray.	800V	1.25mm² [15A]	M3×8 ⊕ Spring-loaded screw terminal	TFP15	7g
			2mm² [20A]	M3.5×8 ⊕ Spring-loaded screw terminal	TFP20	9g
			5.5mm² [40A]	M4×8.5 ⊕ Spring-loaded screw terminal	TFP40	14g
			14mm² [80A]	M5×10 ⊕ Spring-loaded screw terminal	TFP80	29g
TTFP	A two-tier finger-protect type terminal block. The body color is gray.	800V	2mm² [20A]	M3×8 ⊕ Spring-loaded screw terminal	TTFP203	20g
				M3.5×8 ⊕ Spring-loaded screw terminal	TTFP2035	21g
TFE	A finger-protect type grounding terminal block that can be grounded through the rail. Comes with a PE marking label. The body color is two-tone green and amber.	600V	2mm²	M3.5×8 ⊕ Spring-loaded screw terminal	TFE20	26g
			5.5mm²	M4×8.5 ⊕ Spring-loaded screw terminal	TFE40	33g

Note1 Ratings are recommended values with usage in compliance to JIS standards.
Note2 As for the Symbols inTerminal screw colums, ⊕ is plus/minus screw.

Common Specifications

Operational Ambience Temperature Range	−25～+55℃ (without Freezing nor Dew condensation)
Relative Humidity	45～85%RH
Temperature rise	Max. 45℃ of temperature rise at conducting metals
Insulating Resistance	Between each live part and between each live part and the mounting metal plate: Min. 100 MΩ
Commercial Frequency Withstanding Voltage	2500V 1 Min.
Impulse Withstanding Voltage	6000V(TFP15, TFP20, TTFP203, TTFP2035)[Note1] 8000V(TFP40, TFP80)
Conformed Standards	JIS C8201-7-1[Note2] JIS C8201-7-2, NECA C2811 (JIS C2811)[Note3], UL1059, EN/IEC60947-7-1, EN/IEC60947-7-2

Note 1: When the crimped section of the solderless terminal is insulated, the Impulse Withstanding voltage becomes 8,000 V.
Note 2: As of May 2010, JIS C2811 has been replaced by JIS C8201-7-1.
Note 3: NECA C2811 is a standard conforming to the contents of JIS C2811.

Materials

Name	Materials	Flame retardance grade
Terminal Base	Polycarbonate	UL94V-0
Terminal screws	Steel (Zinc plated Chromate Treatment)	—
Conducting Plate	Brass (Nickel plating)	—
Seal for legends	Fiber Vinyl chloride Polypropylene	—

Precausions for PE Terminal Block (TFE Series)

・When mounted on the rail, the terminal is electrically connected to the rail (using an IEC 35 mm steel rail).
・When repositioning the terminal, remove it from the rail first, then reinstall it.
・Do not route shield grounding wires and protective grounding wires on the same rail, as surge current may cause malfunction.
・This terminal block is intended for use as a PE (Protective Earth).
It must not be used as a PEN (a combined Protective Earth and Neutral conductor).

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Ratings Compliant to Overseas Standards

■The Ratings used as comforming products to UL/cULus

TFP, TTFP, and TXU series of Terminal Blocks are certified products by cULus.
The ratings in using products as the cULus conformed ones are as shown below:

c UL us File No.:E114903

Product Name Note3	UL Standard (UL1059)						cULus Standard (CSA Standard C22・2 No.158)			
	Ratings Voltage (V)	Ratings Current (A)	Applicable wires (AWG/MCM) Note1		FW Note2	Tightening Torque (N・m)	Ratings Voltage (V)	Ratings Current (A)	Applicable wires Note1 (AWG/MCM)	Tightening Torque (N・m)
			Single wire	Stranded wire						
TFP15	600	10	20～16	20～16	2	0.9	600	10	20～16	0.9
TFP20	600	20	20～14	＊20～14	2	1.3	600	20	20～＊14	1.3
TFP20＋	600	15	20～14	20～14	2	1.3	—	—	—	—
TFP40	600	30	18～10	＊18～10	2	1.8	600	30	18～＊10	1.8
TFP40＋	600	25	18～12	18～12	2	1.8	—	—	—	—
TFP80	600	65	16～6	＊16～6	2	2.7	600	65	16～＊6	2.7
TFP80＋	600	30	14～12	—	2	2.7	—	—	—	—
TTFP203	600	15	20～14	20～14	2	0.9	600	15	20～14	0.9
TTFP2035	600	15	20～14	20～14	2	1.3	600	15	20～14	1.3
TFE20	600	—	20～14	＊20～14	2	1.3	600	—	20～＊14	1.3
TFE20＋	600	—	20～16	18～14	2	1.3	—	—	—	—
TFE40	600	—	18～10	＊18～10	2	1.8	600	—	18～＊10	1.8
TFE40＋	600	—	16～12	16	2	1.8	—	—	—	—

Note1 The above list applies to connection by bare copper or by crimp terminals. As for Applicable Wires, however, values with * are only for connection by crimp terminals. Please use only crimp terminals with UL or cULus conformance.
Note2 FW1: Wirings at factory, FW2:Wirings at factory and in-field
Note3 As forTFP20,TFP40,TFP80,TFE20, and TFE40 used without crimp terminals, apply ratings for the product names with (＋) at the end.
Note4 If products are used at ULRatings, connect only one wire to one terminal.

■The Ratings used as comforming products to EN/IEC

The TFP, TTFP and TFE series terminal blocks are certified by TÜV, an international third-party certification organization, to conform to EN/IEC standards, enabling smoother verification of CE marking compliance for machinery.
The ratings when used as EN/IEC-compliant products are as follows:

TÜV Rheinland
CE

License No.:R2050847、R2050848、R9551560

Product Name	Ratings Voltage (V)	Impulse Withstanding Voltage (V)	Ratings Current (A)	Applicable wires (AWG/MCM) Note1		Tightening torque (N・m)	Connectable Wires	Protection Grade IP Note2
				Single wire	Stranded wire			
TFP15	600	6000	15	20～16 ($0.5\text{-}1.5mm^2$)	20～16 ($0.5\text{-}1.5mm^2$)	0.9	1 or 2	IP20
TFP20	600	6000	20	20～14 ($0.5\text{-}2.5mm^2$)	20～14 ($0.5\text{-}2.5mm^2$)	1.3	1 or 2	IP20
TFP40	600	6000	40	18～10 ($0.75\text{-}6mm^2$)	18～10 ($0.75\text{-}6mm^2$)	1.8	1 or 2	IP20
TFP80	600	6000	60	16～10 ($1.5\text{-}6mm^2$)	16～8 ($1.5\text{-}10mm^2$)	2.8	1 or 2	IP20
			80	—	＊6 ($16mm^2$)			
TTFP203	600	6000	20	20～14 ($0.5\text{-}2.5mm^2$)	20～14 ($0.5\text{-}2.5mm^2$)	0.9	1 or 2	IP20
TTFP2035	600	6000	20	20～14 ($0.5\text{-}2.5mm^2$)	20～14 ($0.5\text{-}2.5mm^2$)	1.3	1 or 2	IP20
TFE20	600	6000	—	20～14 ($0.5\text{-}2.5mm^2$)	20～14 ($0.5\text{-}2.5mm^2$)	1.3	1 or 2	IP20
TFE40	600	6000	—	18～10 ($0.75\text{-}6mm^2$)	18～10 ($0.75\text{-}6mm^2$)	1.8	1 or 2	IP20

Note 1: The above table applies to both bare copper wire connections and crimp terminal connections. However, wire types marked with an asterisk (*) are for crimp terminal connections only.
Please note the following points:
For crimp terminal connections: Use insulated crimp terminals, or insulate bare crimp terminals with sleeves, tubes, or tape.
When connecting two bare wires: Use wires of the same size and type (solid or stranded). Do not connect wires of different sizes or types.
Note 2: The TFP, TTFP, and TFE series are compliant with IP20 protection for both the screw head side and the wire insertion side. However, when using wire terminals, always ensure insulation by using insulated crimp terminals or applying insulation to bare crimp terminals with sleeves, tubes, or similar materials.