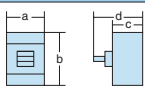


# 2

## Ratings and Specifications

### Earth Leakage Circuit Breakers

#### 14 Economical series (Harmonics/surge with countermeasure)

Frame size (A)	30	30	50	60	100	125	225	250
Type	<b>TZD-32EA</b>	<b>PZE30-NF</b>	<b>PZE50-NF</b>	<b>PZE60-NF</b>	<b>PZE125-NF</b>		<b>ZE250-SF</b>	
Number of poles	2	3	3	3	3	3	3	3
Phase and wires	1φ2W (14)	●	●	●	●	●	●	●
	3φ3W, 1φ3W (15)	● (1φ3W)	●	●	●	●	●	●
	3φ4W	—	—	—	—	—	—	—
<b>■ Ratings</b>								
Rated impulse withstand voltage [ $U_{imp}$ ] kV	6	6	6	6	6	6	8	8
Rated current, A	15	5 20	15 40	60	60	125	125 200	250
Calibrated at 40°C	20	10 30	20 50	—	75	—	150 225	—
	30	15	30	—	100	—	175	—
Rated operational voltage AC V	Instantaneous tripping type	100-100/200 common	100-440 common	100-440 common	100-440 common	100-440 common	100-440 common	100-440 common
	Operable voltage fluctuation range V	80-242	80-484	80-484	80-484	80-484	80-484	80-484
	Time delay tripping type	—	—	—	—	—	—	100-440 common
	Operable voltage fluctuation range V	—	—	—	—	—	80-484	80-484
Rated sensitivity current mA	Instantaneous tripping type	15	15	15 (33)	30	30	30	30
		30	30	30	100/200/500 selectable	100/200/500 selectable	100/200/500 selectable	100/200/500 selectable
		—	—	100/200/500 selectable (41)	—	—	—	—
	Max. operating time sec	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Time delay tripping type	—	—	—	—	—	100/200/500 selectable	100/200/500 selectable
	Max. operating time sec	—	—	—	—	—	0.45/1.0/2.0 selectable	0.45/1.0/2.0 selectable
	Non-operating time sec	—	—	—	—	—	0.1/0.5/1.2 or more	0.1/0.5/1.2 or more
<b>■ Rated breaking capacity, kA</b>								
JIS C 8201-2-2 Ann.2	—	1.5	2.5	2.5	10	10	15	15
$I_{cu}(sym)$	AC 440V	—	1.5	2.5	2.5	10	10	25
	415V	—	1.5	2.5	2.5	10	10	25
	240V	1.5/220V (Ground 110V)	2.5	7.5	7.5	30	30	35
	100V	1.5	2.5	7.5	7.5	30	30	35
<b>■ External dimensions, mm</b>								
	a	60	75	75	75	75	105	105
	b	80	130	130	130	130	165	165
	c	40.5	68	68	68	68	68	68
	d	63	90	90	90	90	90	95
Weight (● marked standard type) kg	0.19	0.8	0.8	0.9	0.9	0.9	1.7	1.7
<b>■ Connections and Mountings</b>								
Front-connected (FC)	Terminal screws	● 45	● 45	● 45	●	●	●	●
	With extension bars	—	○ 53	○ 53	○ 53	○ 53	○ 53	○ 53
Rear-connected (RC)	Flat bar studs	—	○	○	○	○	○	○
Plug-in (PM) For switchboards	High-performance (PMB)	—	—	—	—	—	—	—
	Standard (PMC)	—	—	—	—	—	—	—
	For distribution boards (PMC)	—	—	—	—	—	—	—
	(PMD)	—	—	—	—	—	—	—
Flush-mounted (FP)	With flat bar studs	—	○	○	○	○	○	○
Draw-out type (DR)	—	—	—	—	—	—	—	—
TemPlug70 (PG)	—	—	—	—	—	—	○	○
DIN rail mount	—	○ 11	○ 11	○ 11	○ 11	○ 11	—	—
<b>■ Accessories (optional)</b>								
	<b>Symbol</b>							
Internally mounted	Auxiliary switch	A X	●	●	●	●	●	●
	Alarm switch	A L	—	●	●	●	●	●
	Shunt trips	S H	—	—	—	—	—	—
	Undervoltage trips	U V	—	—	—	—	—	—
	Test lead	T L	●	—	—	—	—	—
	Leakage alarm switch	L A	● 49	—	—	—	—	—
Externally mounted	Megger test switch	M G	● 37	—	—	—	—	—
	Motor operator	M C	—	—	—	—	—	—
	External operating handle	Breaker-mounted	H B	—	●	●	●	●
		Door-mounted (variable depth)	H P	—	●	●	●	●
	Toggle extension	H A	—	—	—	—	—	
	Mechanical interlock	Slide type	M S	—	●	●	●	●
		Link type	M L	—	—	—	—	—
		Wire type	M W	—	—	—	—	—
	Toggle holder	H H	—	●	●	●	●	
	Toggle lock	H L	—	●	●	●	●	
	Terminal cover	For front-connected	C F	● (Standard)	●	●	●	●
		For rear-connected and plug-in	C R	—	●	●	●	●
Terminal block for lead		T F	—	●	●	●	●	
Door flange	D F	—	—	—	—	—		
CE marking	Non	Non	Non	Non	Non	Non	Non	
Earth leakage trip mechanism (Current operation type)	Electronic	Electronic	Electronic	Electronic	Electronic	Electronic	Electronic	
Overcurrent trip mechanism	Thermal	Thermal-magnetic (7)	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	Thermal-magnetic	
Earth leakage indication	Mechanical button	Mechanical button	Mechanical button	Mechanical button	Mechanical button	Mechanical button	Mechanical button	
Colour of cover	Black	Grey Blue	Grey Blue	Grey Blue	Grey Blue	Grey Blue	Grey Blue	
Trip button (Colour)	Non	Yes (Red)	Yes (Red)	Yes (Red)	Yes (Red)	Yes (Red)	Yes (Red)	
Suitability for isolation	Non	Yes	Yes	Yes	Yes	Yes	Yes	
Reverse connection	Non	Non	Non	Non	Non	Non	Yes	
Page of characteristics and outline dimensions	7-178	7-180	7-180	7-184	7-184	7-184	7-192	7-192

**Notes:**

● : Standard. This configuration used unless otherwise specified. ○ : Optional standard. Specify when ordering. ● : "yes" or "available".  
 — : "no" or "not available". (7) : Hydraulic-magnetic type for below 10A rating. (11) : Please order the DIN rail adapter separately. See page 6-156.

(14) : When applying 3-pole type to a 1φ2W circuit, use both ends and do not use the central pole.

(15) : When applying 3-pole type to a 1φ3W circuit, apply voltage to both ends and connect the neutral wire to the central pole. (33) : Applicable to 15A to 30A.

(37) : If the megger test switch is mounted, the auxiliary switch cannot be mounted. (41) : Not applicable to 20 A or less. (49) : A wire clamping terminal is provided.

(49) : If an earth leakage alarm switch is mounted, the megger test switch cannot be mounted. (53) : For the extension bars, please place the order separately in parts.

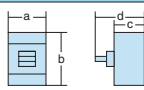
Remarks: The rated sensitivity current is set to 100mA and the time delay tripping type's operating time is set to 0.45 seconds before delivery.

# 2

## Ratings and Specifications

### Earth Leakage Circuit Breakers

#### 14 Economical series (Harmonics/surge with countermeasure)

Frame size (A)	400									
Type	ZE400-NF									
Number of poles	3									
Phase and wires	1φ2W (14)	●								
	3φ3W, 1φ3W (15)	●								
	3φ4W	—								
<b>■ Ratings</b>										
Rated impulse withstand voltage [ $U_{imp}$ ] kV	8									
Rated current, A Calibrated at 40°C	250 400									
	300									
	350									
Rated operational voltage AC V	Instantaneous tripping type	100-440 common								
	Operable voltage fluctuation range V	80~484								
	Time delay tripping type	100-440 common								
	Operable voltage fluctuation range V	80~484								
Rated sensitivity current mA	Instantaneous tripping type	30								
		100/200/500 selectable								
		—								
	Max. operating time sec	0.1								
	Time delay tripping type	100/200/500 selectable								
	Max. operating time sec	0.45/1.0/2.0 selectable								
	Non-operating time sec	0.1/0.5/1.2 or more								
<b>■ Rated breaking capacity, kA</b>										
JIS C 8201-2-2 Ann.2 AC	440V	22								
$I_{cu}$ (sym)	415V	25								
	240V	35								
	100V	35								
<b>■ External dimensions, mm</b>										
	a	140								
	b	260								
	c	103								
	d	145								
Weight (● marked standard type) kg		5.2								
<b>■ Connections and Mountings</b>										
Front-connected (FC)	Terminal screws	●								
	With extension bars	○								
Rear-connected (RC)	Flat bar studs	○								
Plug-in (PM)	For switchboards High-performance (PMB)	—								
	Standard (PMC)	—								
	For distribution boards (PMC)	—								
	(PMD)	—								
Flush-mounted (FP)	With flat bar studs	○								
Draw-out type (DR)		○								
TempPlug70 (PG)		○								
DIN rail mount		—								
<b>■ Accessories (optional)</b>										
Internally mounted	Auxiliary switch	A X	●							
	Alarm switch	A L	●							
	Shunt trips	S H	—							
	Undervoltage trips	U V	—							
	Test lead	T L	●							
	Leakage alarm switch	L A	—							
	Megger test switch	M G	●							
	Motor operator	M C	●							
	Externally mounted	External operating handle	Breaker-mounted	H B	●					
		Door-mounted (variable depth)	H P	●						
Externally mounted	Toggle extension	H A	●							
	Mechanical interlock	Slide type	M S	●						
		Link type	M L	—						
		Wire type	M W	—						
	Toggle holder	H H	●							
	Toggle lock	H L	—							
Terminal cover	For front-connected	C F	●							
	For rear-connected and plug-in	C R	●							
Terminal block for lead	T F	●								
Door flange	D F	—								
CE marking		Non								
Earth leakage trip mechanism (Current operation type)		Electronic								
Overcurrent trip mechanism		Thermal-magnetic								
Earth leakage indication		Mechanical button								
Colour of cover		Grey Blue								
Trip button (Colour)		Yes (Red)								
Suitability for isolation		Yes								
Reverse connection		Yes (72)								
Page of characteristics and outline dimensions		7-198								

**Notes:**  
 ● : Standard. This configuration used unless otherwise specified. ○ : Optional standard. Specify when ordering.  
 ● : "yes" or "available". — : "no" or "not available".  
 (14) : When applying 3-pole type to a 1φ2W circuit, use both ends and do not use the central pole.  
 (15) : When applying 3-pole type to a 1φ3W circuit, apply voltage to both ends and connect the neutral wire to the central pole. (72) : There are some limitations. See page 5-23 for details.  
 Remarks: The rated sensitivity current is set to 100mA and the time delay tripping type's operating time is set to 0.45 seconds before delivery.