

# Earth Leakage Relays TZS Series

## Ratings of Relays

Type	
Phase and wires	3ø3W, 1ø2W 3ø4W

Outside view

### RATINGS

Rated control voltage [V AC]	50/60Hz
Applicable range	120V AC 240V AC
Rated sensitivity current [mA]	

Rated operating time (sec)	
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Dimensions [mm] (surface mount) W/H/D	60/78/100
Weight [kg] (surface mount)	0.22

### MOUNTING

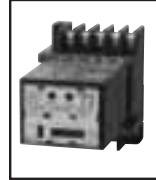
Surface mount	●
Flush mount	●

### STANDARD FEATURES

Earth leakage detection	⑤
Output contact	1C ⑥
Earth leakage indication	LED (Red)
Reset function	electrical ⑦
Power source required	1VA

### TZS-AD

●
●



120 ①②
240
96-132
192-264

30
100
300 ③
500
1000

below 0.04
0.3
0.5 ③④
1
2

60/78/100
0.22

●
●

⑤
1C ⑥
LED (Red)
electrical ⑦
1VA

NOTE ● : Standard, this configuration is used unless otherwise specified.

● : "yes" or "available".

① : Terminals for 120V AC and 240V AC are provided.

CAUTION : DO NOT APPLY 240V AC TO THE 120V AC TERMINAL.,  
BURNOUT CAN RESULT.

② : For 415V AC or 440V AC, Please contact to TERASAKI.

③ : Adjustable type by Dip slide swch.

④ : Operating time range and Non-operating time range.

Rated operating time (sec)	Operating time range (sec)	Non-operating time range (sec)
0.3	0.2~0.36	0.15
0.5	0.4~0.6	0.38
1	0.8~1.2	0.7
2	1.3~2	1.25

⑤ : Solied-state type, current operating type.

⑥ : Ratings of output contact.

	Resistance load cos $\theta$ = 1	Inductive load cos $\theta$ = 0.4 (L/R=7ms)	Min. load
120V AC	6A	3.5A	10mA at 5V DC
240V AC	6A	3.5A	
30V DC	6A	3A	

⑦ : The output contacts remain until the RESET button is operated.  
Provided the control power supply fails the contacts automatically reset.

## Ratings of ZCT (Core Balanced Current Transformers)

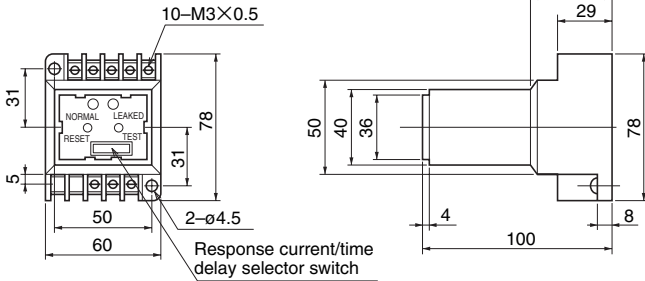
Type	
Outside view	

Diameter of transit part [mm]	
Weight [kg]	
Applicable numbers, size and continuous current of wires (IV cable wires)	
2 wires	max. continuous current max. wire size max.diameter of wire
3 wires	max. continuous current max. wire size max.diameter of wire
4 wires	max. continuous current max. wire size max.diameter of wire

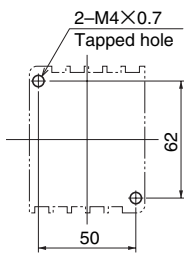
TZS-15	TZS-24	TZS-40	TZS-68	TZS-100	
ø15	ø24	ø40	ø68	ø100	
0.2	0.3	0.7	1.1	2.0	
61A	139A	298A	650A	1185A	
8mm <sup>2</sup>	30mm <sup>2</sup>	100mm <sup>2</sup>	325mm <sup>2</sup>	850mm <sup>2</sup>	
6mm	10.5mm	17mm	29mm	45mm	
61A	139A	298A	650A	1185A	
8mm <sup>2</sup>	30mm <sup>2</sup>	100mm <sup>2</sup>	325mm <sup>2</sup>	850mm <sup>2</sup>	
6mm	10.5mm	17mm	29mm	45mm	
49A	115A	257A	556A	992A	
5.5mm <sup>2</sup>	22mm <sup>2</sup>	80mm <sup>2</sup>	250mm <sup>2</sup>	600mm <sup>2</sup>	
5mm	9.5mm	15.5mm	26mm	38mm	

## Outline dimensions

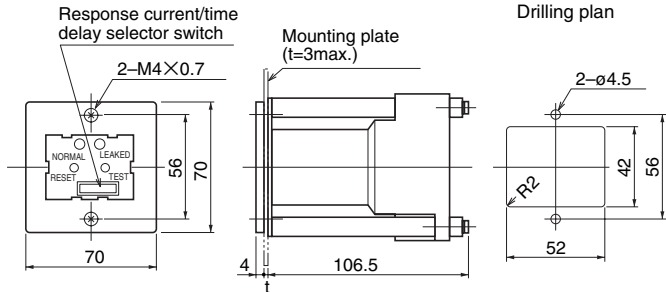
### • Earth Leakage Relay Surface mount Type



Drilling plan

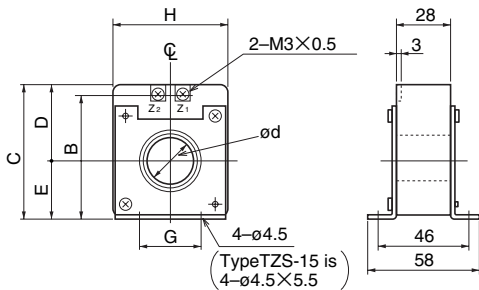


### Flush mount Type

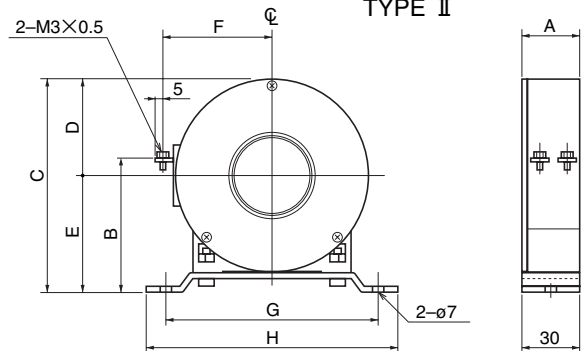


### • Earth Leakage Monitor (ZCT)

TYPE I



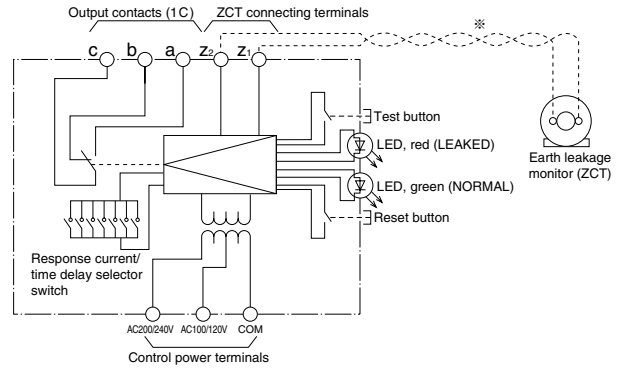
TYPE II



ZCT Type	TYPE	Relay Type	ød	A	B	C	D	E	F	G	H
TZS-15	I	TZS-15AD	15	—	55	60	32	28	—	25	46
TZS-24	I	TZS-24AD	24	—	67	72	40	32	—	34	58
TZS-40	II	TZS-40AD	40	30	71	113	51	62	57	110	130
TZS-68	II	TZS-68AD	68	42	85	141	65	76	70	134	150
TZS-100	II	TZS-100AD	100	45	105	181	85	96	90	150	170

## Connection Diagram

### • Earth Leakage Relay



※TZS-AD — ZCT wire length

30mA: less than 3m, 100, 300mA: less than 5m, 500, 1000mA: less than 10m

Note: The output contacts are hold until the reset button is pressed.

Loss of control power resets the contacts automatically.

Terminal screw tightening torque: 0.45–0.73 N.m (4.6–7.4 kgf.cm)

## Earth Leakage Trip Characteristic

