

PHOTOELECTRIC NON-CONTACT METER RELAY

EF

EF SERIES LIST

Product		Operation Principle	Type	Class	Max. scale value/ rated value	Internal resistance / Voltage fall / Consumption current / Consumption VA		Accessory Transducer	Diagram	Note
DC Current		Permanent Magnet Moving Coil Type	MEF-17 MEF-15	1.0	100μA	4500Ω		—	C-1	—
					200μA	1400Ω				
					1mA	130Ω				
					5mA	9.1Ω				
					10mA	6.8Ω				
					20mA	6Ω				
					30~500mA	60mV				
					1A~10kA	60mV		Shunt		50mV, 100mV can manufactured
DC Voltage		Permanent Magnet Moving Coil Type	MEF-17 MEF-15	1.0	50~900mV	5mA		—	C-2	—
					1~600V	1mA				
					750V~25kV	1mA		Series resistor		
DC Receiving meter		Permanent Magnet Moving Coil Type	XEF-17 XEF-15	1.0	1mA	130Ω		—	C-1 C-2	—
					4~20mA	6.3Ω				
					1~300V	1mA				
AC Current		Rectifier Type	CEF-17 CEF-15	1.5	10~300mA	0.5VA		—	C-3	—
					0.35~100A	1VA		MR-CTN		
AC Voltage		Rectifier Type	CEF-17 CEF-15	1.5	3~600V	1mA		—	C-4	—
					750~25kV	1mA		Series resistor		
AC Receiving meter		Rectifier Type	YEF-17 YEF-15	1.5	1mA	1350Ω		—	C-3 C-4	—
					3~300V	1mA				
Watt Meter	Single phase	Transducer Type	WEF-17-12 WEF-15-12	1.5	110V, 5A 220V, 5A	Voltage 2VA Voltage 3.5VA	Current 1VA Current 1VA	WT-62M-12	C-8	* Refer to accessory transducer outline drawing. * Refer to meter manufacturing limit, max. scale value.
	Single phase 3 wire		WEF-17-13 WEF-15-13	1.5	110V, 5A	Voltage each phase 2VA	Current each phase 1VA	WT-83M-13	C-5	
	3 phase		WEF-17-33 WEF-15-33	1.5	110V, 5A 220V, 5A	Voltage each phase 2VA Voltage each phase 3.5VA	Current each phase 1VA Current each phase 1VA	WT-83M-33	C-5	
	3 phase 4 wire		WEF-17-34 WEF-15-34	1.5	110/ $\sqrt{3}$ V, 5A 220/ $\sqrt{3}$ V, 5A	Voltage each phase 1.5VA Voltage each phase 3VA	”	WT-83M-34	C-6	
Var Meter	single phase	Transducer Type	WVEF-17-12 WVEF-15-12	1.5	110V, 5A 220V, 5A	Voltage 3.5VA Voltage 3.5VA	Current each phase 1.5VA Current each phase 1.5VA	* WVT-62M-12	C-8	* Specify frequency (50/60Hz). * Scale: Lead□var~0~Lag□var. * Refer to accessory transducer outline drawing. * Refer to meter manufacturing limit, max. scale value.
	3 phase (balanced)		WVBEF-17-33 WVBEF-15-33	1.5	110V, 5A 220V, 5A	Voltage each phase 3.5VA Voltage each phase 3.5VA	Current each phase 1.5VA Current each phase 1.5VA	WVBT-83M-33	C-5	
	3 phase (unbalanced)		WVEF-17-33 WVEF-15-33	1.5	110V, 5A 220V, 5A	”	”	* WVT-83M-33	C-5	
	3 phase 4 wire		WVEF-17-34 WVEF-15-34	1.5	110V, 5A 220V, 5A	”	”	WVT-83M-34	C-7	
Power Factor Meter	single phase	Rectifier Type	PEF-17-12 PEF-15-12	5.0	110V, 5A 220V, 5A	Voltage 1VA Voltage 2VA	Current 1VA Current 1VA	* PT-62M-12	C-8	* Specify frequency (50/60Hz). * Scale: Lead 0.5~1~Lag 0.5 * Refer to accessory transducer outline drawing.
	3 phase (balanced)		PBEF-17-33 PBEF-15-33		110V, 5A 220V, 5A	Voltage each phase 1VA Voltage each phase 2VA	Current each phase 1VA Current each phase 1VA	PBT-62M-33	C-9	
	3 phase (unbalanced)	Transducer Type	PEF-17-33 PEF-15-33		110V, 5A 220V, 5A	”	”	* PT-63M-33	C-10	
	3 phase 4 wire (balanced)	Rectifier Type	PBEF-17-34 PBEF-15-34		110V, 5A 220V, 5A	”	”	PBT-62M-34	C-11	
	3 phase 4 wire (unbalanced)	Transducer Type	PEF-17-34 PEF-15-34		110V, 5A 220V, 5A	”	”	* PT-64M-34	C-12	
Frequency		Transducer Type	AEF-17 AEF-15	1.0	110V 220V	45~55Hz 55~65Hz 45~65Hz 350~450Hz	For 110V, 1.7VA For 220V, 2.5VA	FT-62M	C-13	



DAIICHI ELECTRONICS CO., LTD

<http://www.daiichi-ele.co.jp>

Electrical Measuring Instruments Catalogue e-No.99-024

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COMMON STANDARD SPECIFICATION

Item		Specification	
Class		Please refer to [EF Series List]	
Support System		Pivot system	
Meter deflection angle		49°	
Dimension meter from front		EF-17C: 170 × 40mm ; EF-15C: 150 × 40mm	
Scale length		F-17, 15:86mm	
Scale plate		White paint	
Pointer		Triangle (red)	
Meter mounting position		Vertical ; 1T: Vertical ; 2T: Horizontal	
Material panel		Iron plate or non-iron plate	
Mounting panel thickness		7mm or less	
Type according to output signal		Continuance output type	
Pointer moving range		Passing full scale type	
Setting range		Full scale	
Tolerance of pick up value		±1.0% of scale length	
Dead band		0.5% of scale length	
Min. setting width		3% of scale length	
Relay operation control system		H (upper limit), L (lower limit), HL (upper and lower limit)	
Setting index		Triangle type, H: Orange L: Green	
Relay control power		AC110V, 220V (2VA): +10% -15% (50/60Hz) DC24V (2.5W), 48V (5W), 110V (12W) ±15%	
Contact configuration		2C contact for HL	
Contact capacity		AC200V, 0.25A (resistance load) DC30V, 0.8A (resistance load)	
Color of mounting frame (F-17,15)		Dark blue: (Munsell 7.5BG) Black: (Munsell N1.5)	
Material of mouting frame		Almi-diecast	
Insulation resistance		Between electric circuit and outer case	DC500V, 50MΩ or more
Voltage test		Between electric circuit and outer case	AC2230V, between 5sec.
Safety requiment	Standard	JISC 1010-1	
	Insulation	Between electric circuit and outer case: Base of insulation	
	Use	For indoor use (Cubicle etc.)	
	High altitude	2000m or less	
	Pollution	Pollution level 2	
	Measure Category	CATⅢ	
	Max. circuit voltage	600V (Ammeter)	
Operation temperature / Humidity range		-10~55℃, Average day temperature is 40℃ or less, 25~85% RH	
Storage temperature range		-20~70℃	

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COMMON SPECIAL SPECIFICATION

Item		Specification	
Measurement Frequency		Please specify	
Scale	Extend scale	2~5-time extend (Please specify)	
	Color line	Red, Green, Yellow (Please specify)	
	Color area (bar)	Red, Green, Yellow (Please specify)	
	Double scale	Please specify	
	Double seal	Please specify	
	Max. scale section	F-17,15: 100 sections; F-10: 75 sections	
	Special scale	Please specify	
Indicator manufacturing limit		DC50μA, DC15mV	
DC relay control power		DC50V up to 350V (specify for variation range).	
Relay operation control system		HH (upper limit 2 steps) ; LL (lower limit 2 steps)	
Tropical specification		Rust preventative, 「FOR TROPICS」 will display at the name plate.	
Pointer		Stick-type (Black), combine use with multiple scale etc.	
Meter mounting position		Horizontal, inclination installation (angle specified)	
Flame-retarded material		Cover	Polycarbonate resin
Protection circuit of meter		Overcurrent	Specify for necessary tolerated dose.
		Overvoltage	Specify for necessary tolerated dose.
Extended part of scale		Voltmeter	±10%、±20%、±30% of central scale value 75% or more of scale length
		Am meter	up to 20% of upper limit value of effective measuring range. 95% or more of scale length.
			up to 50% of upper limit value of effective measuring range. 75% or more of scale length.
For RMS value rectifier type		AC Current, AC Voltage	
For SCR control waves use		AC Current, AC Voltage, Wattmeter, Var Meter, Frequency	

STANDARD SCALE SECTION

Max. Scale Value (10 times)	1	1.5	2	2.5	3	4	5	6	7.5	8	9
EF-17, 15	50	75	40	50	60	40	50	60	75	40	45

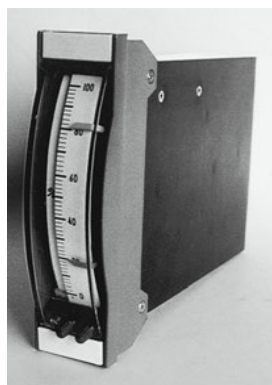
ITEMS TO SPECIFY WHEN PURCHASE

- | | |
|--------------------------------|--|
| (1) Type | (6) Start current protection circuit |
| (2) Setting formal | (7) Protection and attested circuit |
| (3) Rated (max. scale / input) | (8) Terminal cover |
| (4) Relay control power | (9) Quantity |
| (5) Material panel | (10) Option (refer to special specification) |

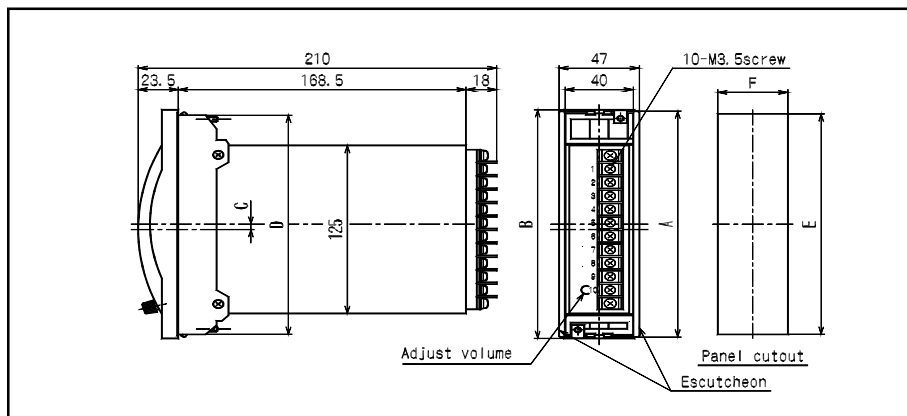
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EF

Outline Drawing



EF-15-1T



* n = unit meter



EF-15-1Y

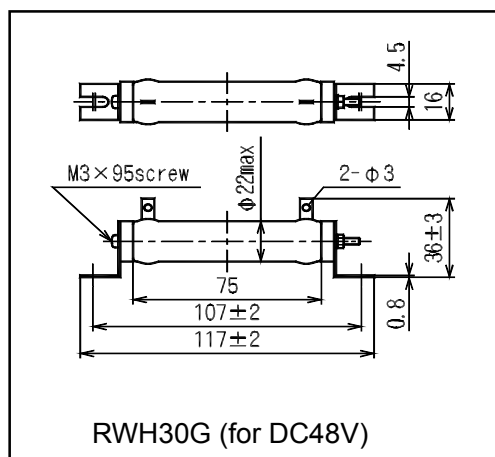
Rated value	A	B	C	D	E	F	
						1 unit	2 units or more
EF-17	168	170	4	163	164 ± 0.5	41 $\begin{smallmatrix} +1 \\ -0 \end{smallmatrix}$	(41 $\times$ n) $\begin{smallmatrix} +1 \\ -0 \end{smallmatrix}$
EF-15	148	150	0	145	146 ± 0.5	41 $\begin{smallmatrix} +1 \\ -0 \end{smallmatrix}$	(41 $\times$ n) $\begin{smallmatrix} +1 \\ -0 \end{smallmatrix}$

Please assemble the meter in the center of the panel if you need continuous assemble.
Or please contact and discuss with us if you need to continuous assemble more than 10 units.

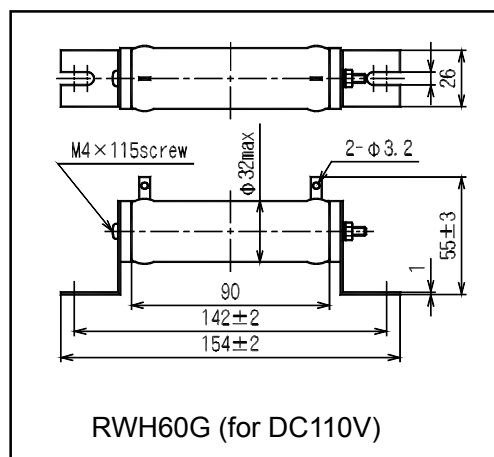
EXTERNAL SERIES RESISTOR (DC Control Power)

Rated value	Series resistor	Note
DC48V	CRH 30G	
DC110V	CRH 60G	

Outline Drawing



RWH30G (for DC48V)



RWH60G (for DC110V)