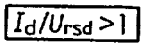
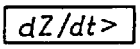
II.11.4 Various Relays (Continued)

No.	Name	Graphical symbol		Description
		Series 1	Series 2	
II.11.4.32	Directional short-circuit relay	 (IEC)	(a) DS (b) 	Symbol of series 1 denotes an overcurrent relay operated by energy flow away from a busbar.
II.11.4.33	Directional ground-fault relay	 (IEC)	(a) DG (b) 	Symbol of series 1 denotes a ground-fault overcurrent relay operated by energy flow away from a busbar.
II.11.4.34	Short-circuit selection relay	 (IEC)	(a) SS (b) 	
II.11.4.35	Ground-fault selection relay	 (IEC)	(a) SG (b) 	
II.11.4.36	Step-out relay	 (IEC)	SO	Symbol of series 1 denotes a relay which utilizes a method of detecting the variation of impedance viewed from the relay.
II.11.4.37	Frequency relay	 (IEC)	F	①
II.11.4.38	Time limit relay	 (IEC)	(a) TL (b) 	
II.11.4.39	Auxiliary relay		(a) Ax (b) 	
II.11.4.40	Blocking relay		L	

II.11.4 Various Relays (Continued)

No.	Name	Graphical symbol		Description
		Series 1	Series 2	
II.11.4.41	Synchronizing relay		Sy	Synchronization detecting relay is included.
II.11.4.42	Polarity relay		Pl	
II.11.4.43	Auto-reclose relay	0→1 07-18-02	(a) Rec (b) ⊕	
II.11.4.44	Flicker relay		Fc	
II.11.4.45	Fault indicator		FI	
II.11.4.46	Temperature relay	θ (IEC)	T	
II.11.4.47	Pressure relay	p (IEC)	Pr	1. In series 1, p is written in small letter. 2. Following graphical symbol may be used in series 2: vacuum relay Vc
II.11.4.48	Shock pressure relay	dp/dt> (IEC)	SP	

II.11.4 Various Relays (Continued)

No.	Name	Graphical symbol		Description
		Series 1	Series 2	
II.11.4.49	Flow relay	 (IEC)		In series 2, the following graphical symbols may be used according to the kind of fluid: Oil-flow relay  Water-flow relay 
II.11.4.50	Gas-flow relay	 (IEC)		
II.11.4.51	Position relay	 (IEC)		Symbol of series 1 denotes a liquid level relay.
II.11.4.52	Velocity relay	 (IEC)		In series 1, v is written in a small letter.
II.11.4.53	Buchholtz relay	 07-18-01		
II.11.4.54	Carrier relay (carrier relay system)			
II.11.4.55	Carrier receiving relay			
II.11.4.56	Directional comparison carrier relay			

II.11.4 Various Relays (Continued)

No.	Name	Graphical symbol		Description
		Series 1	Series 2	
II.11.4.57	Phase comparison carrier relay		CrΦ	
II.11.4.58	Transfer-tripping carrier relay		CrTT	
II.11.4.59	Pilot-wire relay (Pilot-wire relay system)		Pw	
II.11.4.60	Directional-comparison pilot-wire relay		PwD	
II.11.4.61	Differential pilot-wire relay		PwDf	
II.11.4.62	Transfer-tripping pilot-wire relay		PwTT	
II.11.4.63	Pilot-wire monitoring relay		PwMo	
II.11.4.64	Microwave relay (microwave carrier relay system)		M	
II.11.4.65	Directional-comparison microwave relay		MD	②

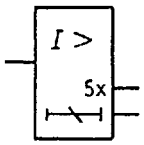
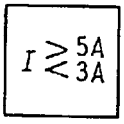
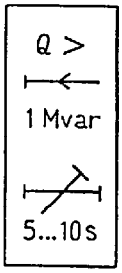
II.11.4 Various Relays (Continued)

No.	Name	Graphical symbol		Description
		Series 1	Series 2	
II.11.4.66	Phase-comparison microwave relay	—	MΦ	②
II.11.4.67	Transfer-tripping microwave relay		MTT	②
II.11.4.68	Transfer-tripping relay		TT	②
II.11.4.69	Optical transmission relay (Optical transmission system)		PCM	

II.11.5 Examples of Relay Function Combination (Series 1)

No.	Name	Graphical symbol		Description
		Series 1	Series 2	
II.11.5.1	Under-voltage relay	U < 50...80V 130% 07-17-07		An example of: Setting range 50 to 80 V, Resetting ratio 130 %
II.11.5.2	Over-current relay	I > 07-17-04		Time-lag type is exemplified.
II.11.5.3		2(I >) 5...10A 07-17-05		A relay with two current elements and a setting range from 5 to 10 A is exemplified.

II.11.5 Examples of Relay Function Combination (Series 1) (Continued)

No.	Name	Graphical symbol		Description
		Series 1	Series 2	
II.11.5.4	Over-current relay (continued)	 07-17-14		A relay with two outputs, one active at current above five times the setting value, the other with inverse time-lag characteristic is exemplified.
II.11.5.5		 07-17-13		Locked-rotor detection relay operating by current sensing is exemplified.
II.11.5.6	Over and under current relay	 07-17-08		A relay operating above 5 A and below 3 A is exemplified.
II.11.5.7		 07-17-06		A relay in which, energy flow is towards busbar, operation is at reactive power 1 Mvar and time-lag is adjustable from 5 to 10 s, is exemplifield.
II.11.5.8	Interturn short-circuit relay	 07-17-10		A relay detecting interturn short-circuits is exemplified.

II.12 Measuring Instrument

(1) Letter T is prefixed to the symbol for totalizing type.

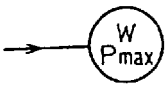
(2) Letter Pt is prefixed to the symbol for printing type.

(3) Letter M is prefixed to the symbol for instruments which can indicate the maximum and minimum values.

II.12.1 Indicating Instrument

No.	Name	Graphical symbol	Description
II.12.1.1	Indicating instrument (general)	 08-01-01	1. See I.2.5.1 (indicating instrument). 2. Letter or graphical symbol which indicates the kind of instrument is entered in  . 3. Identification of a.c. or d.c., if necessary, is done as follows: D.C.  A.C.  4. Deflection of pointer, if necessary, is indicated as follows: When deflection is on one side  When deflection is on both sides 
II.12.1.2	Voltmeter	 08-02-01	
II.12.1.3	Ammeter	 (IEC)	

II.12.1 Indicating Instrument (Continued)

No.	Name	Graphical symbol	Description
II.12.1.4	Ohm meter		
II.12.1.5	High-low voltmeter		
II.12.1.6	Watt-meter	 (IEC)	
II.12.1.7	Totalizing wattmeter		
II.12.1.8	Maximum demand wattmeter	 08-02-03	1. A type actuated by an integrating meter is shown. 2. Meters which utilize an operating principle other then the mentioned above is expressed as  . 3. In the case of maximum demand ammeter (including meters with maximum and minimum indicators),  is used.
II.12.1.9	Varmeter	 08-02-04	
II.12.1.10	Power-factor meter	 08-02-05	

II.12.1 Indicating Instrument (Continued)

No.	Name	Graphical symbol	Description
II.12.1.11	Reactive-factor meter		
II.12.1.12	Frequency meter	 08-02-07	
II.12.1.13	Velocity meter	 (IEC)	v is written in a small letter.
II.12.1.14	Tacho-meter	 08-02-15	
II.12.1.15	Position indicator		
II.12.1.16	Water level indicator	 (IEC)	
II.12.1.17	Ground detector		
II.12.1.18	Voltage detector		Luminous voltage detector is included.

II.12.1 Indicating Instrument (Continued)

No.	Name	Graphical symbol	Description
II.12.1.19	Galvano-meter	 08-02-12	
II.12.1.20	Distribu-tion line fault section indicator		
II.12.1.21	Synchro-scope	 08-02-08	
II.12.1.22	Thermo-meter	 08-02-14	θ may be replaced by t°.
II.12.1.23	Phase meter	 08-02-06	
II.12.1.24	Maximum-minimum voltmeter or maximum voltmeter		
II.12.1.25	Maximum ammeter		

II.12.1 Indicating Instrument (Continued)

No.	Name	Graphical symbol	Description
II.12.1.26	Zero-phase-sequence voltmeter		
II.12.1.27	Maximum zero-phase-sequence voltmeter		
II.12.1.28	Zero-phase-sequence ammeter		
II.12.1.29	Maximum zero-phase-sequence ammeter		
II.12.1.30	Flow meter	 (IEC)	
II.12.1.31	Oscillo-scope	 08-02-10	
II.12.1.32	Wavemeter	 08-02-09	
II.12.1.33	Differ-ential voltmeter	 08-02-11	