

Appendix 2

ANSI/IEC Relay Symbols



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There are two methods for indicating protection relay functions in common use. One is given in ANSI Standard C37-2, and uses a numbering system for various functions. The functions are supplemented by letters where amplification of the function is required. The other is given in IEC 60617, and uses graphical symbols. To assist the Protection Engineer in converting from one system to the other, a select list of ANSI device numbers and their IEC equivalents is given in Figure A2.1.

Description	ANSI	IEC 60617	Description	ANSI	IEC 60617
Overspeed relay	12	$\omega >$	Inverse time earth fault overcurrent relay	51G	$I_{\perp} >$
Underspeed relay	14	$\omega <$	Definite time earth fault overcurrent relay	51N	$I_{\perp} >$
Distance relay	21	$Z <$	Voltage restrained/controlled overcurrent relay	51V	$U \nearrow I >$
Overtemperature relay	26	$\theta >$	Power factor relay	55	$\cos \varphi >$
Undervoltage relay	27	$U <$	Overvoltage relay	59	$U >$
Directional overpower relay	32	$\rightarrow P >$	Neutral point displacement relay	59N	$U_{rsd} >$
Underpower relay	37	$P <$	Earth-fault relay	64	$I_{\perp} >$
Undercurrent relay	37	$I <$	Directional overcurrent relay	67	$\rightarrow I >$
Negative sequence relay	46	$I_2 >$	Directional earth fault relay	67N	$\rightarrow I_{\perp} >$
Negative sequence voltage relay	47	$U_2 >$	Phase angle relay	78	$\varphi >$
Thermal relay	49	L	Autoreclose relay	79	$O \rightarrow I$
Instantaneous overcurrent relay	50	$I >>$	Underfrequency relay	81U	$f <$
Inverse time overcurrent relay	51	$I >$	Overfrequency relay	81O	$f >$
			Differential relay	87	$I_d >$

Figure A2.1 – ANSI number/IEC symbol comparison