

Overcurrent Relays

Edison Relay Cross Reference Guide Including ABB, Basler, GE and Multilin

R150-05-4

This cross reference guide was developed to provide you with an easier way to select the proper Edison protective relays for your application. It includes a cross reference to Cooper Edison relays for most models of the popular brands available.

The guide is organized by manufacturer and then by relay model. All Cooper Edison relays are microprocessor multifunction relays. Many of the manufacturer's devices are single function units. In some cases, multiple units are necessary for the manufacturer being compared. Therefore, for a given manufacturer's model, a listing of all Cooper Edison relays is given which include the specific protective function.

For example, the breaker failure function is included in several Cooper Edison relays. As a result, all relays that include this function are listed. If Cooper does not have a comparable relay, the field is left blank,

Because of the nature of microprocessor technology, multifunction relays designed for a given purpose (e.g., feeder protection) includes various protective functions based on what the manufacturer deemed appropriate. An exact comparison of these features is outside the scope of this guide. However, a reference for an Edison model with the closest comparable features is given.

If you have questions regarding the functionality of any Edison relay or need more specific comparison data, please contact your local representative or Cooper Power Systems.

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DESCRIPTION	ABB	COOPER
Synch Check, Single shot reclosing	25 + 79S	
Synch Check	25S	SCM21
Synch Check with Voltage Monitoring	25V	SCM21
Undervoltage	27 (1)	UM30, IM3GV
Under/Overvoltage	27/59 (1)	UM30, IM3GV
Undervoltage, Definite Time	27D (1)	UM30
Ground Overvoltage with Third Harmonic Undervoltage	27G + 59N (1)	
Undervoltage, Instantaneous	27H (1)	UM30, UFD3, UFD14, IM3GV, SCM21, SPM21
Voltage Controlled Overcurrent	27H + 51 (1)	
Undervoltage, Definite Time or Instantaneous	27N (1)	UM30, UFD3, UFD14, IM3GV, SCM21, SPM21
Directional Power	32 (1)	IM30G
Directional Power	32 (1)	IM3GV
Directional Overcurrent	32 (1) + 51	DM30E
Directional Overcurrent	32 (1) + MICRO51	DM30E
Directional Overcurrent	32 (1) + MMCO	DM30E
Ground Directional Overcurrent, dual polarized	32D (1) + 51	IM30DE
Ground Directional Overcurrent, dual polarized	32D (1) + MICRO51	IM30DE
Directional Power	32R (1)	IM30G, IM3GV
Loss of Excitation	40	IM30G, IM3GV
Negative Sequence Overcurrent, Definite Time	46D	IM30DRE, MM30, MM30D, IM30G, IM3GV
Negative Sequence Overcurrent, Instantaneous	46H	IM30DRE, MM30, MM30D, IM30G, IM3GV
Negative Sequence Overcurrent, Inverse Time	46Q	IM30DRE, MM30, MM30D, IM30G, IM3GV
Negative Sequence Voltage, Inverse Time	47	UM30
Negative Sequence Voltage, Inverse Time	47D	UM30
Negative Sequence Voltage, Inverse Time	47H	UM30
Instantaneous Overcurrent	50	IM30AE, IM30BE, IM30DE, DM30E, MM30, MM30D, IM3GV, IM30G

DESCRIPTION	ABB	COOPER
Fault Detector, Two-phase & ground	50B	IM30AE, IM30BE, IM30DE, DM30E, MM30, MM30D, IM3GV, IM30G
Breaker Failure	50B + 62B	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM30C, MD32G, IM3GV, IM30G
Breaker Failure	50B + 62B	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM30C, MD32G, IM3GV, IM30G
Overcurrent, Definite Time	50D	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM3GV, IM30G
Overcurrent, Instantaneous	50H	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, MM30, MM30D, IM3GV, IM30G
Breaker Failure	50H + 62B	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM30C, MD32G, IM3GV, IM30G
Overcurrent, Instantaneous	50I	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, MM30, MM30D, IM3GV, IM30G
Time Overcurrent, multiple curve families	51 Family	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM3GV, IM30G
Torque Controlled Overcurrent	51 Torque Cont.	
Overvoltage	59 (1) Family	UM30, UFD3, UFD14, IM3GV
Overvoltage	59F (1)	UM30
Overvoltage	59G (1)	UM30
Voltage Balance	60	
Phase Unbalance	60Q	UM30
Reclosing, Multi-shot	79M	IM30DRE

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DESCRIPTION	ABB	COOPER
Over/Under Frequency	81	UM30, UFD3, UFD14, IM3GV, IM30G
Percentage Differential	87M	MD32G
Transformer Differential	87T	MD32T
Percentage Differential - Generator	CA	MD32G
Percentage Differential - Bus	CA16	MD32G
Percentage Differential - Transformer	CA26	MD32T
Current Phase Balance	CM	IM30DRE, MM30, MM30D, IM30G, IM3GV
Overcurrent, Timed and Instantaneous	CO Family	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM3GV, IM30G
Overcurrent, Timed and Instantaneous	CO HILO Family	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM3GV, IM30G
Overcurrent, Torque Controlled	CO Torque Cont.	
Overcurrent, Timed and two Instantaneous	COM Family	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM3GV, IM30G
Negative Sequence Overcurrent	COQ	IM30DRE, MM30, MM30D, IM30G, IM3GV
Voltage Controlled Overcurrent	COV Family	
Reverse Phase Voltage	CP	UM30
Directional Phase Overcurrent	CR Family	DM30E
Ground Directional Overcurrent - current polarized	CRC Family	DM30E, IM30DRE, MM30D
Ground Directional Overcurrent - dual polarized	CRD Family	IM30DE
Directional Power	CRN	IM30DE, DM30E, IM30DRE, MM30D
Ground Directional Overcurrent - voltage polarized	CRP Family	IM30DE
Undervoltage	CV1, CV2	UM30, UFD3, UFD14, IM3GV, SCM21, SPM21
Overvoltage	CV4, CV5	UM30, UFD3, UFD14, IM3GV
Over/Under Voltage	CV6, CV7	UM30, IM3GV
Ground Overvoltage	CV8	UM30
Over/Under Voltage	CVD	UM30, IM3GV

DESCRIPTION	ABB	COOPER
Negative Sequence Overvoltage	CVQ	UM30
Synch Check with Single Shot Reclosing	CVX + SGR	
Synch Check with Single Shot Reclosing	CVX, CVX-1	SCM21
Directional Power	CW	IM3GV, IM30G
Directional Overcurrent - Current Polarized	CWC	MD32G
Directional Power	CWD	IM3GV, IM30G
Distribution Feeder Protection	DPU	IM30DRE
Distribution Feeder Protection	DPU2000	IM30DRE
Directional Power Flow	H3	IM3GV, IM30G
Transformer Differential	HU	MD32T
Ground Directional Overcurrent - current polarized	IRC Family	IM30DE, DM30E, IM30DRE, MM30D
Ground Directional Overcurrent - dual polarized	IRD Family	IM30DE, DM30E, IM30DRE, MM30D
Ground Directional Overcurrent - voltage polarized	IRP Family	IM30DE, DM30E, IM30DRE, MM30D
Directional Overcurrent	IRV Family	DM30E
Overcurrent - Instantaneous	IT	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, MM30, MM30D, IM3GV, IM30G
Overcurrent - Instantaneous w/Time Delay	ITHT	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, MM30, MM30D, IM3GV, IM30G
Breaker Failure	KC + TD	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM30C, MD32G, IM3GV, IM30G
Overcurrent - Instantaneous	KC Family	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, MM30, MM30D, IM3GV, IM30G
Loss of Excitation	KLH	IM30G, IM3GV
Over/Under Voltage	KP	UM30
Ground Directional Overcurrent - current polarized	KRC	IM30DE, DM30E, IM30DRE, MM30D
Ground Directional Overcurrent - dual polarized	KRD	IM30DE, DM30E, IM30DRE, MM30D
Ground Directional Overcurrent - voltage polarized	KRP	IM30DE, DM30E, IM30DRE, MM30D

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DESCRIPTION	ABB	COOPER
Directional Overcurrent	KRV	DM30E
Over/Under Voltage	KV1	UM30, IM3GV
Overcurrent, Microprocessor	MCO (1)	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM3GV, IM30G
Over/Under Frequency	MDF	UM30
Overcurrent, Microprocessor	MICRO51 (1)	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM3GV, IM30G
Torque Controlled Overcurrent, Microprocessor	MICRO51TC	
Transformer Differential	-	MD32T
Overcurrent, Microprocessor	MMC (1)	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM3GV, IM30G
Overcurrent, Microprocessor	MMCO	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM3GV, IM30G
Torque Controlled Overcurrent, Microprocessor	MMCO-TC	
Reclosing, Multi-shot	MRC	IM30DRE
Overexcitation	MVH	UM30
Negative Sequence Overcurrent	POQ	IM30DRE, MM30, MM30D, IM30G, IM3GV
Reclosing, Multi-shot	RC	IM30DRE
Reclosing, Multi-shot	RCL	IM30DRE
High Speed Differential - Generator	SA1	MD32G
Breaker Failure	SBF1	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM30C, MD32G, IM3GV, IM30G
Breaker Failure	SBFU	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM30C, MD32G, IM3GV, IM30G

DESCRIPTION	ABB	COOPER
Overcurrent - Instantaneous	SC, SC-1	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, MM30, MM30D, IM3GV, IM30G
Overcurrent - Instantaneous	SIT	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, MM30, MM30D, IM3GV, IM30G
Negative Sequence Overcurrent	SOQ	IM30DRE, MM30, MM30D, IM30G, IM3GV
Directional Overcurrent	SW	IM3GV, IM30G
Over/Undervoltage	SSVT	UM30, IM3GV
Over/Undervoltage	SV, SV-1	UM30, IM3GV
Current Differential	TPU, TPU2000	MD32G, MD32T

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DESCRIPTION	BASLER	COOPER
Overvoltage	24	UM30
Synch Check, Single shot reclosing	25/79S	
Synch Check	25	SCM21
Synch Check with Voltage Monitoring	25	SCM21
Automatic Synchronizing	25A	SPM21
Undervoltage	27	UM30, UFD3, UFD14, IM3GV, SCM21, SPM21
Undervoltage, Definite Time	27	UM30
Undervoltage, Instantaneous	27	UM30, UFD3, UFD14, IM3GV, SCM21, SPM21
Under/Overvoltage	27/59	UM30, IM3GV
Directional Power	32 O/U	IM3GV, IM30G
Directional Power	32R	IM3GV, IM30G
Loss of Excitation	40Q	IM30G, IM3GV
Negative Sequence Overcurrent	46N	IM30DRE, MM30, MM30D, IM30G, IM3GV
Negative Sequence Voltage	47N	UM30
Instantaneous Overcurrent	50	IM30AE, IM30BE, IM30DE, DM30E, MM30, MM30D, IM3GV, IM30G
Breaker Failure	50BF	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM30C, MD32G, IM3GV, IM30G
Breaker Failure	BPR	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM30C, MD32G, IM3GV, IM30G
Overcurrent, Definite Time	50/51B	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM3GV, IM30G
Overcurrent, Timed and Instantaneous	50/51B-219	
Overcurrent, Timed and Instantaneous	50/51B-214	
Overcurrent, Definite Time	50/51M	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM3GV, IM30G

DESCRIPTION	BASLER	COOPER
Time Overcurrent	51	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM3GV, IM30G
Distribution Feeder Protection	851	IM30DRE
Distribution Feeder Protection w/Voltage	951	IM30DRE
Distribution Feeder Protection w/Voltage	DFPR	IM30DRE
Torque Controlled Overcurrent	51TC	
Voltage Controlled Overcurrent	51/27C	
Voltage Restrained Overcurrent	51/27R	IM3GV
Overvoltage	59	UM30, UFD3, UFD14, IM3GV
Ground Overvoltage with Third Harmonic Undervoltage	59N	
Ground Overvoltage	59N	UM30
Voltage Balance	60	
Directional Overcurrent	67	DM30E
Ground Directional Overcurrent, dual polarized	67N	IM30DE, DM30E, IM30DRE, MM30D
Reclosing, ACR Retrofit	79A	
Reclosing, Multi-shot	79M	IM30DRE
Over/Under Frequency	81 O/U	UM30, UFD3, UFD14, IM3GV, IM30G
Percentage Differential - Generator	87G	MD32G
Percentage Differential - Transformer	87T	MD32T
Current Differential	CDS200	MD32G, MD32T
Motor Protection	MPS	MM30, MM30D

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DESCRIPTION	GE	COOPER
Torque Controlled Overcurrent	AC60	
Reclosing, ACR Retrofit	ACR11	
Transformer Differential	BDD	MD32T
Directional Power	CAP, CCP	IM30G
Loss of Excitation	CEH	IM30G, IM3GV
Percentage Differential	CFD	MD32G
Negative Sequence Voltage, Inverse Time	CFV	UM30
Voltage Balance	CFVB	
Instantaneous Overcurrent	CHC	IM30AE, IM30BE, IM30DE, DM30E, MM30, MM30D, IM3GV, IM30G
Directional Overcurrent	CJC15	DM30E
Ground Directional Overcurrent, dual polarized	CJC15K	IM30DE, DM30E, IM30DRE, MM30D
Ground Directional Overcurrent, dual polarized	CLPG12	IM30DE, DM30E, IM30DRE, MM30D
Distribution Feeder Protection	DDP	IM30DRE
Transformer Differential	DTP	MD32T
Automatic Synchronizing	GES	SPM21
Automatic Synchronizing	GES + GTL + SASB	SPM21
Directional Power	GGP	IM30G, IM3GV
Automatic Synchronizing	GXS	SPM21
Automatic Synchronizing	GXS + GTL + SASB	SPM21
Fault Detector, Two-phase & ground	HFC	IM30AE, IM30BE, IM30DE, DM30E, MM30, MM30D, IM3GV, IM30G
Overcurrent, Timed and Instantaneous	IAC	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM3GV, IM30G
Overvoltage	IAV51, 52	UM30, UFD3, UFD14, IM3GV
Under/Overvoltage	IAV53, 69, 70	UM30, IM3GV
Undervoltage	IAV54, 55	UM30, IM3GV
Directional Overcurrent	IBC	DM30E
Ground Directional Overcurrent - current polarized	IBCG	IM30DE, DM30E, IM30DRE, MM30D
Directional Phase Overcurrent	ICBV	DM30E
Negative Sequence Voltage, Inverse Time	ICR	UM30
Directional Power	ICW	IM3GV, IM30G

DESCRIPTION	GE	COOPER
Voltage Controlled Overcurrent	IFCS, IFCV	IM3GV
Overcurrent, Definite Time	IFCS, IFCV	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM3GV, IM30G
Transformer Differential	IFD	MD32T
Overvoltage	IFV51	UM30
Negative Sequence Overcurrent, Definite Time	IJC	IM30DRE, MM30, MM30D, IM30G, IM3GV
Percentage Differential - Generator	IJD52	MD32G
Percentage Differential - Transformer	IJD53	MD32T
Over/Under Frequency	IJF	UM30, UFD3, UFD14, IM3GV, IM30G
Synch Check	IJS	SCM21
Directional Overcurrent	IRV	DM30E
Directional Overcurrent	JBC	DM30E
Ground Directional Overcurrent - dual polarized	JBCG	IM30DE, DM30E, IM30DRE, MM30D
Negative Sequence Voltage, Inverse Time	NBV11 + IAV54	UM30
Reclosing, Multi-shot	NLR	IM30DRE
Breaker Failure	PJC + SAM	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM30C, MD32G, IM3GV, IM30G
Over/Under Voltage	PJV	UM30, IM3GV
Breaker Failure	SBC	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM30C, MD32G, IM3GV, IM30G
Time Overcurrent, multiple curve families	SFC	IM30AE, IM30BE, IM30DE, DM30E, IM30DRE, IM3GV, IM30G
Over/Under Frequency	SFF	
Negative Sequence Overcurrent, Instantaneous	SGC	IM30DRE, MM30, MM30D, IM30G, IM3GV
Synch Check with Voltage Monitoring	SLJ	SCM21
Reclosing, Multi-shot	SLR	IM30DRE
Over/Under Voltage	SLV	UM30, IM3GV
Transformer Differential	STD	MD32T
Overvoltage	STV	UM30

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DESCRIPTION	MULTILIN	COOPER
Motor Protection	269+	MM30, MM30D
Motor Protection	269	MM30, MM30D
Motor Protection	139	MM30, MM30D
Motor Protection	PROTECT 4A	MM30, MM30D
Motor Management	301	MM30, MM30D
Distribution Feeder Protection	565	IM30DRE
Distribution Feeder Protection w/Reclosing	575	IM30DRE
Blocking and Test Module	515	
Motor Management	SR469	MM30, MM30D
Generator Management	SR489	IM3GV, IM30G
Distribution Feeder Protection	SR735	IM30DRE
Transformer Management	SR745	MD32T
Distribution Feeder Protection	SR750	IM30DRE
Distribution Feeder Protection w/Reclosing	SR760	IM30DRE
Distribution Feeder Protection	SR737	IM30DRE