



Relion® 615 series

RED615 Standard configurations

RED615 line-differential protection and control standard configurations

Standard configurations

Description	Standard configuration
Line differential protection	A
Line differential protection with directional earth-fault protection	B
Line differential protection with non-directional earth-fault protection	C

• = included
o = optional

Supported functions, codes and symbols

Functionality	IEC 61850	IEC 60617	IEC-ANSI	A	B	C
Protection						
Line differential protection and related measurements, stabilized and instantaneous stages	LNPLDF1	3dl>L	87L	•	•	•
Three-phase non-directional overcurrent protection, low stage, instance 1	PHLPTOC1	3I> (1)	51P-1 (1)	•	•	•
Three-phase non-directional overcurrent protection, high stage, instance 1	PHHPTOC1	3I>> (1)	51P-2 (1)	•	•	•
Three-phase non-directional overcurrent protection, high stage, instance 2	PHHPTOC2	3I>> (2)	51P-2 (2)	•	•	•
Three-phase non-directional overcurrent protection, instantaneous stage, instance 1	PHIPTOC1	3I>>> (1)	50P/51P (1)	•	•	•
Non-directional earth-fault protection, low stage (SEF), instance 1	EFLPTOC1	I ₀ > (1)	51N-1 (1)	-	-	•
Non-directional earth-fault protection, low stage, instance 2	EFLPTOC2	I ₀ > (2)	51N-1 (2)	-	-	•
Non-directional earth-fault protection, high stage, instance 1	EFHPTOC1	I ₀ >> (1)	51N-2 (1)	-	-	•
Non-directional earth-fault protection, instantaneous stage	EFIPTOC1	I ₀ >>>	50N/51N	-	-	•
Directional earth-fault protection, low stage (SEF), instance 1	DEFLPDEF1	I ₀ > → (1)	67N-1 (1)	-	•	-
Directional earth-fault protection, low stage, instance 2	DEFLPDEF2	I ₀ > → (2)	67N-1 (2)	-	•	-
Directional earth-fault protection, high stage	DEFHPDEF1	I ₀ >> →	67N-2	-	•	-
Transient / intermittent earth-fault protection	INTRPTEF1	I ₀ > → IEF	67NIEF	-	•	-
Non-directional (cross-country) earth fault protection, using calculated I ₀	EFHPTOC1	I ₀ >>	51N-2	-	•	-
Negative-sequence overcurrent protection, instance 1	NSPTOC1	I ₂ > (1)	46 (1)	•	•	•
Negative-sequence overcurrent protection, instance 2	NSPTOC2	I ₂ > (2)	46 (2)	•	•	•
Phase discontinuity protection	PDNSPTOC1	I ₂ /I ₁ >	46PD	-	•	•
Three-phase thermal protection for feeders, cables and distribution transformers	T1PTTR1	3I _{th} >F	49F	-	•	•
Binary signal transfer	BSTGGIO1	BST	BST	•	•	•
Circuit breaker failure protection	CCBRBRF1	3I>/I ₀ >BF	51BF/51NBF	•	•	•
Three-phase inrush detector	INRPHAR1	3I _{2f} >	68	•	•	•
Master trip, instance 1	TRPPTRC1	Master Trip (1)	94/86 (1)	•	•	•
Master trip, instance 2	TRPPTRC2	Master Trip (2)	94/86 (2)	•	•	•

Note, all directional protection functions can also be used in non-directional mode

Supported functions, codes and symbols

Functionality	IEC 61850	IEC 60617	IEC-ANSI	A	B	C
Control						
Circuit-breaker control with interlocking	CBXCBR1	I ↔ O CB	I ↔ O CB	•	•	•
Disconnecter position indication, instance 1	DCSXSUI1	I ↔ O DC (1)	I ↔ O DC (1)	•	•	•
Disconnecter position indication, instance 2	DCSXSUI2	I ↔ O DC (2)	I ↔ O DC (2)	•	•	•
Disconnecter position indication, instance 3	DCSXSUI3	I ↔ O DC (3)	I ↔ O DC (3)	•	•	•
Earthing switch indication	ESSXSUI1	I ↔ O ES	I ↔ O ES	•	•	•
Auto-reclosing	DARREC1	O → I	79	-	o	o
Condition Monitoring						
Circuit-breaker condition monitoring	SSCBR1	CBCM	CBCM	-	•	•
Trip circuit supervision, instance 1	TCSSCBR1	TCS (1)	TCM (1)	•	•	•
Trip circuit supervision, instance 2	TCSSCBR2	TCS (2)	TCM (2)	•	•	•
Current circuit supervision	CCRDIF1	MCS 3I	MCS 3I	•	•	•
Protection communication supervision	PCSRTPC1	PCS	PCS	•	•	•
Measurement						
Disturbance recorder	RDRE1	-	-	•	•	•
Three-phase current measurement	CMMXU1	3I	3I	•	•	•
Sequence current measurement	CSMSQI1	I ₁ , I ₂ , I ₀	I ₁ , I ₂ , I ₀	•	•	•
Residual current measurement	RESCMMXU1	I ₀	I _n	-	•	•
Residual voltage measurement	RESVMMXU1	U ₀	V _n	-	•	-

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