

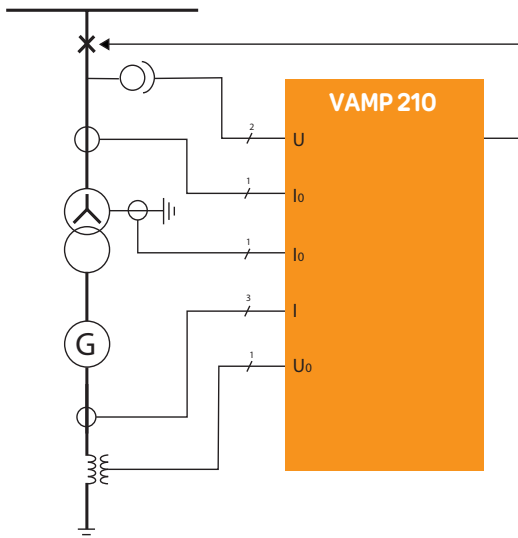
VAMP 210

Generator protection relay



Vamp protection relays are used for selective protection of subtransmission lines, medium voltage overhead and cable feeders, motor feeders, transformer feeders, capacitor banks, generators, reactors and busbars in power system distribution substations, power plants, industrial power systems, and marine and offshore installations. In addition to a comprehensive range of standard protection functions, the Vamp series also offers bay control, measurements, primary circuit monitoring and communication functionality.

TYPICAL APPLICATION



MAIN CHARACTERISTICS

- Complete generator protection
- Optimized for generators up to ~100 MW
- Versatile earth fault protection
- Event handling and fault registration
- Disturbance recorder
- Various communication protocols including SPA Bus, Profibus, Modbus, Modbus TCP, IEC 61850, IEC 60 870-5-101, IEC 60 870-5-103, DNP 3.0, TCP/IP, DeviceNet
- VAMPSET, a user-friendly, free-of-charge relay management software for setting parameters and configuring.

The optional integrated arc flash protection provides new dimension to protection scheme

Main technical data / Vamp 210

Auxiliary voltage, Uaux	40...265 V ac / dc (optionally 18...36 V dc)
Rated phase current In	1 A or 5 A
- current measuring range	0..50 x In
Rated neutral current Ion	1 A or 5 A
- current measuring range	0..5 x In
Thermal Withstand	4 x In (continuous) 100 x In (for 1 s)
Rated voltage Un	50 – 120 V (configurable)
- voltage measuring range	0 – 160 V (100 / 110 V)
Voltage withstand (continuous)	250 V
Rated frequency fn	45...65 Hz
- frequency measuring range	16...75 Hz
Digital inputs	6 pcs
- internal operating voltage	+48 V dc
Trip contacts	2 pcs
Alarm contacts	5 pcs
Tests and environment	
Emission	EN 55022
Immunity	IEC 60255-22-1 IEC 60255-11 EN 61000-4-6 EN 61000-4-5 EN 6100-4-4 EN 61000-4-3 EN 6100-4-2
Insulation test	IEC 60255-5
Surge voltage	IEC 60255-5
Vibration shock	IEC 60255-21-1
Operating temperature	-10...+55° C
Relative humidity	< 95 %, no condensation allowed
Degree of protection (IEC 60529)	IP30, flush mounted, optionally IP54
Weight	4,2 kg
Dimension (w x h x d)	209 x 155 x 225 mm
Protection stages	
Current protection	
Overcurrent protection	I >, I >>, I >>> 50/51
Voltage restrained/ controlled overcurrent protection	Iv > 51V
Directional overcurrent protection	I dir>, I dir>>, I dir>>>, I dir>>>> 67
Current unbalance protection	I2 > 46
Residual current protection	
Earth fault protection	I0 >, I0 >>, I0 >>>, I0 >>>> 50N/51N
Directional earth fault protection	I0φ >, I0φ >> 67N
Zero sequence voltage protection	
Zero sequence voltage protection	U0 >, U0 >> 59N
100% stator earth fault protection U0f3<	64F3
Voltage protection	
Overvoltage protection	U>, U>>, U>>> 59
Undervoltage protection	U<, U<<, U<<< 27
Positive sequence undervoltage protection	U1<, U1 << 27P
Earth fault stage	U0f3< 64F3
Power protection stages	
Thermal overload protection	T> 49
Underexcitation protection	Q< 40
Overexcitation protection	U> 24
Reverse power protection	P<, P<< 32
Underimpedance	Z<, Z<< 21
Under excitation protection	Q< 40
Underreactance protection (lost of excitation)	X<, X<< 21/40

Frequency protection stages	
Over- and underfrequency protection	f><, f>><< 81H/81L
Underfrequency protection	f<, f<< 81L
Rate of change of frequency (ROCOF) protection	df/dt 81R
Programmable stage	
Programmable stage	Prg1...8 99
Arc protection (option)	
Arc fault protection	Arc I> 50ARC>
Arc fault protection	Arc I01>, Arc I02> 50NARC>
Other	
Disturbance recorder	All analogue channels and binary inputs / outputs
Circuit breaker failure protection	CBFP 50BF
Trip circuit supervision	TCS
CT / VT supervision	60
Magnetizing inrush	If2> 68F2
Over excitation	If5> 68F5
Measuring; RMS and fundamental	IL1, IL2, IL3, I0 ,I02, min, max, average Ua, Ub, Uc, U12, U23, U31, U0, min, max, f
Calculation	P, Q, S, min, max, average, by phase E+, E-, Eq+, Eq-, total, trip, pulse output Power factor PQ diagram (1 cosj, tanj, I0, I2/I1, U0, U2/U1 Note: (1 with VAMPSET software
Power quality	Harmonics from phase currents: THD, harmonics 2nd to 15th by phase THD, harmonics 2nd to 15th by phase Harmonics from phase voltages: THD, harmonics 2nd to 15th by phase Voltage interrupts / voltage sags and swells Disturbance recorder Demand values
Transducer	Four mA outputs for any relevant signals
Communication protocols	
	IEC 61850 IEC 60 870-5-101 IEC 60 870-5-103 Transparent TCP/IP Modbus TCP Modbus RTU Profibus DP SPA DNP 3.0 DeviceNet

Schneider Electric Industries SAS

35, rue Joseph Monier
CS 30323
F - 92506 Rueil Malmaison Cedex (France)
Tel.: +33 (0) 1 41 29 70 00
RCS Nanterre 954 503 439
Capital social 896 313 776 €
www.schneider-electric.com

As standards, specifications and designs change from time to time, please ask for confirmation of the information given in this publication.

Design: Schneider Electric Industries SAS - Wilma
Photos: Schneider Electric Industries SAS
Printed in Finland