Overcurrent Protection SIPROTEC 7SJ80

Function overview

Protection functions	IEC	ANSI No.
Definite and inverse time-overcurrent protection (phase/ground)	$I>$, I_p, I_{Np}	50, 50N; 51, 51N
Directional time-overcurrent protection phase	$I>$, $I>>$, $I>>>$, I_p	67
Directional time-overcurrent protection ground	$I_E>$, $I_E>>$, $I_E>>>$, I_{Ep}	67N [1]
Directional sensitive ground fault protection	$I_{EE}>$, $I_{EE}>>$, I_{EEp}	67Ns [1], 50Ns
Overvoltage protection, zero-sequence system	V_E, $V_0>$	59N [1]
High-impedance restricted ground-fault protection		87N
Inrush restraint		
Trip-ciruit supervision	TCS	74TC
Undercurrent monitoring	$I<$, $P>$	37
Overload protection	$\theta>$	49
Undervoltage/overvoltage protection	$V<$, $V>$	27/59
Overfrequency/underfrequency protection	$f<$, $f>$	81O/U
Circuit-breaker failure protection	CBFP	50BF
Undervoltage controlled reactive power protection	$Q>/V<$	
Intermittent ground fault protection	Iie>	
Directional intermittent ground fault protection	Iie dir>	67Ns [1]
Voltage dependent inverse-time overcurrent protection		51V
Unbalanced-load protection	$I_2>$	46
Phase-sequence-voltage supervision	LA, LB, LC	47
Synchrocheck	Sync	25
Automatic reclosing	AR	79
Fault locator	FL	FL [1]
Lockout		86
Forward power supervision, reverse power protection	$P<>$, $Q<>$	32 [1]
Power factor	$\cos\varphi$	55 [1]
Rate-of-frequency-change protection	df/dt	81R
Rate-of-voltage-change protection	dV/dt	27R, 59R

Table 4/1 Function overview

Control functions/programmable logic
- Commands for the ctrl. of CB, disconnect switches (isolators/isolating switches)
- Control through keyboard, binary inputs, DIGSI 4 or SCADA system
- User-defined PLC logic with CFC (e.g. interlocking).

Monitoring functions
- Operational measured values V, I, f
- Energy metering values W_p, W_q
- Circuit-breaker wear monitoring
- Minimum and maximum values
- Trip circuit supervision (74TC)
- Fuse failure monitor
- 8 oscillographic fault records.

Communication interfaces
- System/service interface
  – IEC 61850 Edition 1 and 2
  – IEC 60870-5-103 and IEC 60870-5-104
  – PROFIBUS-DP
  – DNP 3.0
  – MODBUS RTU
  – DNP3 TCP
  – PROFINET
  – Ethernet redundancy protocols RSTP, PRP and HSR
- Ethernet interface for DIGSI 4 and extension up to two SICAM I/O-Units 7XV5673
- USB front interface for DIGSI 4.

Hardware
- 4 current transformers
- 0/3 voltage transformers
- 3/7/11 binary inputs (thresholds configurable using software)
- 5/8 binary outputs (2 changeover/Form C contacts)
- 1 life contact
- Pluggable current and voltage terminals.

1) Not available if function package "Q" (synchrocheck, ANSI 25) is selected.