

NS194 Approved Protection Relay List

Table 1 contains the list of approved relays as per NS194 – Protection Requirements for Embedded Generators >30 kW. Alternative relays or combinations of relays may be used if they satisfy protection requirements in consultation with Ausgrid.

Table 1 - Approved protection relay list

Manufacturer	Model	Supported Protection Functions
ABB	CM-UFD.M33	27, 59, 78, 81U, 81O, 81R,
Areva / Schneider	P923 <i>NOTE: this relay does not have vector shift protection (ANSI 78).</i>	27, 59, 59N, 81U, 81O, 81R
	P341	27, 32R, 59, 59N, 78, 81U, 81O, 81R
Bender	Linetraxx VMD460-NA	27, 59, 78, 81U, 81O, 81R
ComAp	IntelliPro	27, 32F, 32R, 47, 59, 59N, 78, 81U, 81O, 81R
	MainsPro	25, 27, 47, 59, 78, 81U, 81O, 81R
DIEF	GPU-3 <i>Note: I/O options may be required for Inter-trip receive from Ausgrid</i>	27, 81U, 81O [Option A1 – 78, 81R] [Option C2 – 47, 59P] [Option G2 – 25]
HLP-ZIEHL	UFR1001E <i>NOTE: to ensure 60 s auto-reconnection delay is compliant with NS194, set the Program setting to '20'. See the Commissioning section of the manual (section 8).</i>	25, 27, 47, 59, 78, 81U, 81O, 81R
GE	Multilin 850 <i>NOTE: this relay does not have vector shift protection (ANSI 78).</i>	25, 27, 32F, 32R, 50BF, 59N, 59P, 81U, 81O, 81R
Schneider	SEPAM S42	27, 32R, 46, 47, 50BF, 59N, 59P, 81U, 81O, 81R
Woodward	easYprotec-1000	27, 47, 59, 78, 81U, 81O, 81R
	easYprotec-1410	27, 47, 59, 78, 81U, 81O, 81R
	MRU4	25, 27, 47, 59, 59N, 78, 81U, 81O, 81R

	MRA4	25, 27, 47, 50BF, 59, 59N, 74TC, 78, 81U, 81O, 81R, 32R, 32F
	MFR300	27, 59, 78, 81U, 81O, 81R, 32R
	MFR11 <i>NOTE: this relay cannot be configured for automatic reconnection.</i>	27, 47, 59, 78, 81U, 81O, 81R
Tele	NA003	27, 59P, 78, 81U, 81O, 81R.
SEL	700G – Generator Protection Relay	21, 24, 25, 27, 32, 40, 46, 50, 51, 59, 64G, 78, 78VS, 81, 87, REF, BF.
	751 – Feeder Protection Relay	25, 27, 32, 49T, 50, 51, 55, 59, 60LOP, 67, 78VS, 79, 81, REF, BF.
NOJA	OSM-15-310 & RC10 Controller	25, 27, 32R, 32O, 46, 47, 50, 50N, 51, 51N, 51O, 59, 59N, 59R, 67, 67N, 78, 79, 81U/O, 81R, 86.

The ANSI/IEEE Standard C37.2 protection codes are given in Table 2.

Table 2 - ANSI/IEEE Standard C37.2 protection codes

ANSI/IEEE Standard C37.2 Code	Protection Functional Description
25	Check Synchronisation (CS)
27	Under Voltage (UV)
32F	Grid Low Forward Power
32R	Grid Reverse Power (GRP)
46	Phase Balance - Current
47	Phase Balance - Voltage
50BF	Circuit Breaker Fail
59N	Neutral Voltage Displacement (NVD)
59P	Over Voltage (OV)
74TC	Trip Circuit Supervision
78	Vector Shift (VS)
81U	Under Frequency (UF)
81O	Over Frequency (OF)
81R	Rate of Change of Frequency (RoCoF)