



Technical Bulletin

TB 0323 – Low Voltage Switchgear

Purpose

To detail the approved low voltage switchgears used in Endeavour Energy's (EE) network.

Background

Endeavour Energy has been using Weber low voltage switchgear since 2003. Since 2013, all Type 1, 2, 3 & 4 LV switchgears have been fitted on the circuit breaker frame with a rated isolator switch on the incoming supply. This allows the isolation of the load from the transformer and provides a generator connection directly after the switch to feed all loads.

Since 2019, Tyree low voltage switchgears were approved to use in the network.

Refer to Table 1 for material numbers.

Actions

There are 2 types of low voltage switchgear that are currently approved to be used in the network:

(1) Weber low voltage switchgear

The incomer and fuse switches are manufactured by EFEN GmbH, Germany, while the switch isolator is manufactured by Socomec, France.

The whole LV switchgear is assembled in Weber's plant in Brisbane, Queensland.

Refer to Table 2 for the ratings of the incomer and isolator.

(2) Tyree low voltage switchgear

The incomer and fuse switches are manufactured by Pronutec, Spain, while the switch isolator is manufactured by Telergon, Spain.

The whole LV switchgear is assembled in Tyree's plant in Mittagong, NSW.

Refer to Table 3 for the ratings of the incomer and isolator.

Labels on Pronutec incomer switch

'DO NOT OPERATE UNDER LOAD' is printed on the base of the Pronutec incomer switch. This is an operational requirement for European utilities and majority of Pronutec's supply is to the European market.



Based on the ratings in Table 2, this switch is tested and rated to be operated under load and it is the standard operating practice in Endeavour Energy.

All future supplies of the Tyree LV switchgears will be supplied with this label 'OPERATION UNDER LOAD PERMITTED' on the base of all Pronutec incomer switch.



Impacted Standards

The contents of this technical bulletin will be included in the next update of the following standard(s):

- MDI 0028 – Underground distribution network design
- SDI 257 – Weber South Pacific low voltage switchgear
- SDI 258 – Tyree low voltage switchgear (to be developed)

Contacts

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Table 1 LV switchgear material codes

Config	SAP Material no.	Manuf. Part no. (Tyree / Weber)	Item Description
CAT 1	1000005301	SG1010 MF2240912-ENC1	Category 1 low voltage switchgear (1 x 3 phase 1000A incomer switch, 1 x 3 phase 1000A generator connector, 4 x single phase 400A fuse switch, 1 x single phase 160A auxiliary fuse switch)
CAT 2	1000005303	SG1021 MF2241612-ENC2	Category 2 low voltage switchgear (1 x 3 phase 2000A incomer switch, 1 x 3 phase 2000A generator connector, 4 x single phase 400A fuse switch, 1 x single phase 160A auxiliary fuse switch)
CAT 2B	1000005302	SG1022 MF2241612-ENC2B	Category 2B low voltage switchgear (1 x 3 phase 2000A incomer switch, 1 x 3 phase 2000A generator connector, 2 x single phase 400A fuse switch, 1 x single phase 160A auxiliary fuse switch)
Type 1	1000005304	SG1031 MF1231600-ENT1	Type 1 low voltage switchgear (1 x 2000A load break switch, 1 x 1250A circuit breaker, 1 x single phase 160A auxiliary fuse switch)
Type 2	1000005305	SG1032 MF1231600-ENT2	Type 2 low voltage switchgear (1 x 2000A load break switch, 1 x 2500A circuit breaker, 1 x single phase 160A auxiliary fuse switch)
Type 3	1000005386	SG1033 MF1332500-ENT3	Type 3 low voltage switchgear (1 x 3150A load break switch, 1 x 3200A circuit breaker, 1 x single phase 160A auxiliary fuse switch)
Type 4	1000006288	SG 1034 MF1221600-ENT4	Type 4 low voltage switchgear (1 x 2000A load break switch, 2 x 1250A circuit breaker, 1 x single phase 160A auxiliary fuse switch)
Type 5	1000005306	SG 1040 MF1302500-ENLB	Type 5 load break switch (1 x 3200 load break switch)

Table 2 Ratings of EFEN GmBh incomer switch and Socomec isolator

	Current rating		Making capacity	Breaking capacity	Short circuit
	<i>Nominal</i>	<i>For EE</i>			
CAT 1	1000A	940A	3000A	3000A	25kA 1s
CAT 2	2000A	1590A	6000A	6000A	40kA 1s
CAT 2B	2000A	1590A	6000A	6000A	40kA 1s
Type 1	2000A	1590A	12500A	10000A	50kA 1s
Type 2	2000A	1590A	12500A	10000A	50kA 1s
Type 3	3200A	2380A	12500A	10000A	55kA 1s
Type 4	2000A	1590A	12500A	10000A	50kA 1s
Type 5	3200A	2380A	12500A	10000A	55kA 1s

Table 3 Ratings of Pronutec incomer switch and Telergon isolator

	Current rating		Making capacity	Breaking capacity	Short circuit
	<i>Nominal</i>	<i>For EE</i>			
CAT 1	1000A	940A	3000A	3000A	25kA/1sec
CAT 2	2000A	1590A	4800A	4800A	31.5kA/3sec
CAT 2B	2000A	1590A	4800A	4800A	31.5kA/3sec
Type 1	2000A	1590A	12500A	10000A	50kA/1sec
Type 2	2000A	1590A	12500A	10000A	50kA/1sec
Type 3	3150A	2380A	20000A	16000A	50kA/1sec
Type 4	2000A	1590A	12500A	10000A	50kA/1sec
Type 5	3150A	2380A	20000A	16000A	50kA/1sec