

Associated Voltage, Current Data of Switch Disconnecter in SolarEdge Three Phase Inverters - Technical Note (AUS)

The Three Phase Inverter comprises of a DC Safety Unit used as a wiring box and Switch-Disconnecter.

SolarEdge Three Phase Inverter

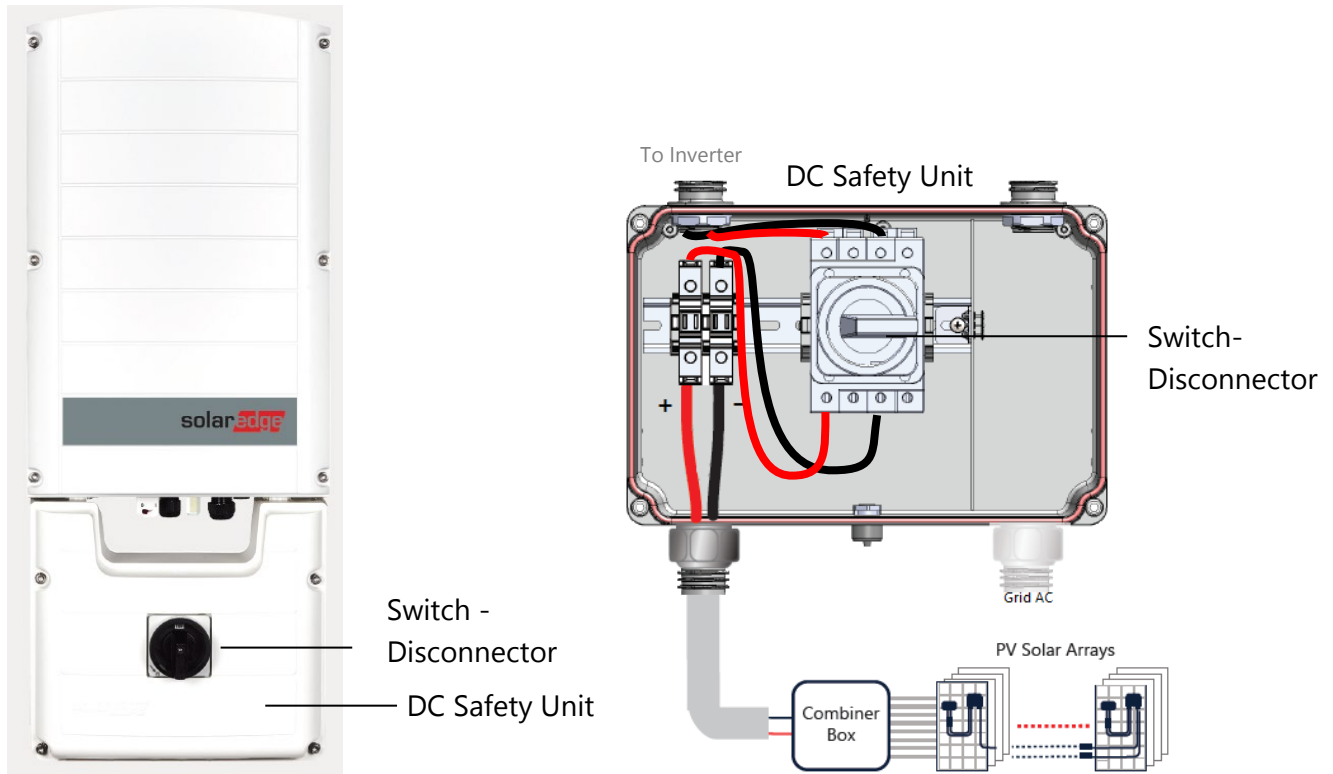


Figure 1 – Switch-Disconnecter in SolarEdge Three Phase Inverter

This technical note details the specification and associated data on the Switch-Disconnecter of the DC Safety Unit when operating at rated voltage and current.

This technical note is applicable to all SolarEdge Three phase inverter models SE25K-AUxxxxxxx, SE27.6K-AUxxxxxxx, SE30K-AUxxxxxxx, SE33.3K-AUxxxxxxx equipped with SI55 IMO Switch-Disconnecter described below.

This technical note is also applicable to all SolarEdge Three phase inverter models SE15K-AUxxxxxxx, SE17K-AUxxxxxxx, equipped with SI40 IMO Switch-Disconnecter described below.



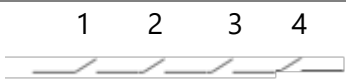
NOTE

All temperatures mentioned in this document are ambient temperatures.

Switch Disconnector Voltage, Current and Associated Data for Inverter Models SE25K-AUxxxxxxx, SE27.6K-AUxxxxxxx, SE30K-AUxxxxxxx and SE33.3K-AUxxxxxxx

The following table describes the Switch-Disconnecter Voltage, Current and Associated Data.

Table 1 Switch Disconnector Voltage, Current and Associated Data Inverter models SE25K-SE33.3K

Identification		Rating Data		
Switch, unenclosed – catalogue number (with DC-PV2 rating)		SI55-BMDC64R-4T		
Specific dedicated individual enclosure – catalogue number (with minimum IP56NW rating)		SI55-PEL64R-4T (enclosed version)		
Assembly of switch and dedicated individual enclosure – catalogue number		DCD-3PH-AU-S9-DB-E DCD-3PH-AU-S1-B		
I_{th} rated thermal current, unenclosed, at 40°C shade ambient air temperature		55A		
I_{the} rated thermal current, indoor, at 40°C shade ambient air temperature, in a specific dedicated enclosure		55A		
I_{the} rated thermal current, outdoors, at 40°C shade ambient air temperature, without solar effects in a specific dedicated enclosure IP56NW		55A		
$I_{the\ solar}$ current value, outdoors, at 40°C shade ambient air temperature with solar effects in a specific dedicated enclosure rated IP56NW		55A		
$I_{the\ solar}$ current value, outdoors, at 60°C shade ambient air temperature with solar effects in a specific dedicated enclosure rated IP56NW		55A		
		U_e rated operational Voltage V dc	I_e ; DC-PV2 rated operational current A	$I_{(make)} & I_{c(break)}$ DC-PV2 4 x I_e A
4 Pole		≤500	55	220
		600	55	220
		1000	55	220

Additional Date

- a) Rated insulation (U_i) – 1500V
- b) Rated impulse withstand voltage for equipment suitable for isolation or when determined (U_{imp}) – 8kV
- c) Pollution degree - 3
- d) Rated duty (U_e) – (Refer to Table 1 in this document)
- e) Rated short-time withstand current (I_{cw}) and duration – 1400A
- f) Rated short-circuit making capacity (I_{cm}) – 1400A
- g) Rated conditional short circuit current – 10kA
- h) Diagram and method of series connecting poles of mechanical switching devices for each operational rating – (refer to Figure 1 in this document)

- i) Appropriate connection to the PV generator and load – refer to Guide P/N MAN-01-00695-xx
- J) '+' and '-' polarities - refer to Figure 1 in this document
- K) Suitable for indoor or outdoor use.
- l) Enclosure outdoor classification, details of enclosure(s), complying with I_{the} and I_{the} solar and IP56NW supplied - IP66NW, suitable for indoor and outdoor. I_{the} and I_{the} solar ratings are based upon enclosure size 180x96x76.
- m) I_{the} at 40°C shade ambient air temperature - 55A
- n) I_{the} solar at 40°C shade ambient air temperature – 55A
- o) I_{the} solar current value at 60°C shade ambient air temperature – 55A
- p) $I_{(make)}$ and $I_{c(brake)}$ - (refer to Table 1 in this document)
- q) $I_{(e)}$ rated operational current DCPV2- (refer to Table 2 in this document)


Table 2 $I_{(e)}$ Rated Operational Current DCPV2 Inverter Models SE25K-SE33.3K

			SI55		
			$I_{(e)}$ +40°C ambient	$I_{(e) solar}$ +40°C shaded amb.	$I_{(e) solar}$ +60°C shaded amb.
4 Poles	500V	A	55.0	55.0	55.0
	600V	A	55.0	55.0	55.0
	700V	A	55.0	55.0	55.0
	800V	A	55.0	55.0	55.0
	900V	A	55.0	55.0	55.0

Switch Disconnecter Voltage, Current and Associated Data for Inverter Models SE15K-AUxxxxxxx and SE17K-AUxxxxxxx

The following table describes the Switch-Disconnecter Voltage, Current and Associated Data.

Table 3 Switch Disconnecter Voltage, Current and Associated Data for inverter models SE15K-SE17K

Identification		Rating Data		
Switch, unenclosed – catalogue number (with DC-PV2 rating)		SI40-BMDC64R-4T		
Specific dedicated individual enclosure – catalogue number (with minimum IP56NW rating)		SI40-PEL64R-4T (enclosed version)		
Assembly of switch and dedicated individual enclosure – catalogue number		DCD-3PH-AU-S2-B		
I_{th} rated thermal current, unenclosed, at 40°C shade ambient air temperature		48A		
I_{the} rated thermal current, indoor, at 40°C shade ambient air temperature, in a specific dedicated enclosure		48A		
I_{the} rated thermal current, outdoors, at 40°C shade ambient air temperature, without solar effects in a specific dedicated enclosure IP56NW		48A		
$I_{the\ solar}$ current value, outdoors, at 40°C shade ambient air temperature with solar effects in a specific dedicated enclosure rated IP56NW		48A		
$I_{the\ solar}$ current value, outdoors, at 60°C shade ambient air temperature with solar effects in a specific dedicated enclosure rated IP56NW		48A		
		U_e rated operational Voltage V dc	I_{ei} ; DC-PV2 rated operational current A	$I_{(make)} \& I_{c(break)}$ DC-PV2 4 x I_e A
4 Pole 	1	≤500	48	192
	2	600	48	192
	3 4	1000	40	160

Additional Date

- a) Rated insulation (U_i) – 1500V
- b) Rated impulse withstand voltage for equipment suitable for isolation or when determined (U_{imp}) – 8kV
- c) Pollution degree - 3
- d) Rated duty (U_e) – (refer to Table 3 in this document)
- e) Rated short-time withstand current (I_{cw}) and duration – 1200A
- f) Rated short-circuit making capacity (I_{cm}) – 1200A
- g) Rated conditional short circuit current – 10kA
- h) Diagram and method of series connecting poles of mechanical switching devices for each operational rating – (refer to Figure 1 in this document)

- i) Appropriate connection to the PV generator and load.
- J) '+' and '-' polarities. Refer to Figure 1 in this document
- K) Suitable for indoor or outdoor use.
- l) Enclosure outdoor classification, details of enclosure(s), compiling with I_{the} and I_{the} solar and IP56NW supplied - IP66NW, suitable for indoor and outdoor. I_{the} and I_{the} solar ratings are based upon enclosure size 180x96x76.
- m) I_{the} at 40°C shade ambient air temperature - 48A
- n) I_{the} solar at 40°C shade ambient air temperature – 48A
- o) I_{the} solar current value at 60°C shade ambient air temperature – 48A
- p) $I_{(make)}$ and $I_{c(brake)}$ - (refer to Table 3 in this document)
- q) $I_{(e)}$ rated operational current DCPV2- (refer to Table 4 in this document)

Table 4 $I_{(e)}$ Rated Operational Current DCPV2 for Inverter Models SE15K-SE17K

			SI40		
			$I_{(e)}$ +40°C ambient	$I_{(e) solar}$ +40°C shaded amb.	$I_{(e) solar}$ +60°C shaded amb.
4 Poles	500V	A	48.0	48.0	48.0
	600V	A	48.0	48.0	48.0
	700V	A	48.0	48.0	48.0
	800V	A	40.0	40.0	40.0
	900V	A	40.0	40.0	40.0