

ABB Inverter series for the connection to the Public Low Voltage Network in Brazil

Reference Standard: ABNT NBR 16149:2013 ANBT NBR 16150:2013 ABNT NBR 62116-2012

Date	Note
2013/03/15	First release of the document
2013/10/18	Second release of the document. Added PVI-55.0 and derived models
2014/07/30	Update inverter models

The ABB inverters listed in the following table comply with the relevant requirements of the Brazilian standard:

- **ABNT NBR 16149:2013** Sistemas fotovoltaicos (FV) – Características da interface de conexão com a rede elétrica de distribuição – Primeira edição (01.03.2013)
[*Photovoltaic (PV) systems – Characteristics of the utility interface* – first edition, March 01-2013]

As results after internal testing made in accordance to the applicable conformance test protocol:

- **ABNT NBR 16150:2013** Sistemas fotovoltaicos (FV) — Características da interface de conexão com a rede elétrica de distribuição — Procedimento de ensaio de conformidade - Primeira edição (04.03.2013)
[*Photovoltaic (PV) systems – Characteristics of the utility interface* – Conformity test procedure. First edition, March 04-2013]

ABNT NBR 62116-2012 Procedimento de ensaio de anti-ilhamento para inversores de sistemas fotovoltaico conectados à rede.

Please refer to the conditions and restriction of use specified in the table, as well as in the following notes.

ABB inverter Model	Rated Power	Nominal Voltage/Frequency No. of phases	Cos(phi)=f(P) (§ 4.7.2)	Reactive Power Capability Active/Reactive Power remote control (§ 4.7.3, 6.1 and 6.2)	Interface Protection (§ 5.2)	FRT Capability (§ 7)	Note
UNO-2.0-I-OUTD UNO-2.0-I-OUTD-S	2kW	220V/60Hz 1 phase	NO ⁽¹⁾	NO ⁽¹⁾	YES ⁽²⁾	YES	Can be used for PV systems up to 3kW
UNO-2.5-I-OUTD UNO-2.5-I-OUTD-S	2,5 kW	220V/60Hz 1 phase	NO ⁽¹⁾	NO ⁽¹⁾	YES ⁽²⁾	YES	Can be used for PV systems up to 3kW
PVI-3.0-TL-OUTD PVI-3.0-TL-OUTD-S	3,0 kW	220V/60Hz 1 phase	YES	YES ⁽³⁾	YES ⁽²⁾	YES	Can be used on all PV systems
PVI-3.6-TL-OUTD PVI-3.6-TL-OUTD-S	3,6 kW	220V/60Hz 1 phase	YES	YES ⁽³⁾	YES ⁽²⁾	YES	Can be used on all PV systems
PVI-4.2-TL-OUTD PVI-4.2-TL-OUTD-S	4,2 kW	220V/60Hz 1 phase	YES	YES ⁽³⁾	YES ⁽²⁾	YES	Can be used on all PV systems
PVI-5000-TL-OUTD PVI-5000-TL-OUTD-S	5,0 kW	220V/60Hz 1 phase	YES	YES ⁽³⁾	YES ⁽²⁾	YES	Can be used on all PV systems
PVI-6000-TL-OUTD PVI-6000-TL-OUTD-S	6,0 kW	220V/60Hz 1 phase	YES	YES ⁽³⁾	YES ⁽²⁾	YES	Can be used on all PV systems
TRIO-5.8-TL-OUTD TRIO-7.5-TL-OUTD TRIO-8.5-TL-OUTD	5,8 kW 7,5 kW 8,5 kW	380V/60Hz 3 phase	YES	YES ⁽³⁾	YES ⁽²⁾	YES	Can be used on all PV systems

ABB inverter Model	Rated Power	Nominal Voltage/Frequency No. of phases	Cos(phi)=f(P) (§ 4.7.2)	Reactive Power Capability Active/Reactive Power remote control (§ 4.7.3, 6.1 and 6.2)	Interface Protection (§ 5.2)	FRT Capability (§ 7)	Note
PVI-10.0-TL-OUTD PVI-10.0-TL-OUTD-S PVI-10.0-TL-OUTD-FS	10,0 kW	380V/60Hz 3 phase	YES	YES ⁽³⁾	YES ⁽²⁾	YES	Can be used on all PV systems
PVI-12.5-TL-OUTD PVI-12.5-TL-OUTD-S PVI-12.5-TL-OUTD-FS	12,5 kW	380V/60Hz 3 phase	YES	YES ⁽³⁾	YES ⁽²⁾	YES	Can be used on all PV systems
TRIO-20.0-TL-OUTD-400 TRIO-20.0-TL-OUTD-S2-400 TRIO-20.0-TL-OUTD-S2F-400 TRIO-20.0-TL-OUTD-S2X-400	20,0 kW	380V/60Hz 3 phase	YES	YES ⁽³⁾	YES ⁽²⁾	YES	Can be used on all PV systems
TRIO-27.6-TL-OUTD-400 TRIO-27.6-TL-OUTD-S2-400 TRIO-27.6-TL-OUTD-S2F-400 TRIO-27.6-TL-OUTD-S2X-400	27,6 kW	380V/60Hz 3 phase	YES	YES ⁽³⁾	YES ⁽²⁾	YES	Can be used on all PV systems
PVI-55.0	55,0 kW	380V/60Hz 3 phase	YES	YES ⁽³⁾	YES ⁽²⁾	YES	Can be used on all PV systems
PVI-110.0	110,0 kW	380V/60Hz 3 phase	YES	YES ⁽³⁾	YES ⁽²⁾	YES	Can be used on all PV systems
PVI-165.0	165,0 kW	380V/60Hz 3 phase	YES	YES ⁽³⁾	YES ⁽²⁾	YES	Can be used on all PV systems
PVI-220.0	220,0 kW	380V/60Hz 3 phase	YES	YES ⁽³⁾	YES ⁽²⁾	YES	Can be used on all PV systems
PVI-330.0	330,0 kW	380V/60Hz 3 phase	YES	YES ⁽³⁾	YES ⁽²⁾	YES	Can be used on all PV systems

■ **Note:**

- (1) The inverter can operate with a power factor of $\cos\phi \geq 0,98$ lead or lag. The inverter is not able to operate with adjustable power factor.
- (2) Voltage protection is set in accordance with the limits and trip times listed in Table 2, chapter 5.2.1, considering a nominal voltage of 220V/1-phase and 380V/3-phase respectively. Frequency trip limits and trip times are in accordance with the values specified in chapter 5.2.2.
- (3) Reactive power capability in accordance with the requirements listed in chapter 4.7.3. Q_{max} (maximum inductive/capacitive reactive power) is 43,6% of rated active power (see Fig.2).

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