



Date: 17<sup>th</sup> July 2016  
Offer no: ABBQ20-032rev0\_BHC

To,  
Blackstonesynergy  
Nairobi  
Kenya

Your Ref: email enq on 14.07.2016 and our discussion subsequently

**Subject: Enquiry for reactive power conditioners for 5<sup>th</sup> and 7<sup>th</sup> order harmonics cancellation**

Dear Sir,

We are pleased to present our technical offer for the above mentioned requirement.  
Should you need any further calrification, please do not hesistate to contact us.

Assure you best of our attention and services.

Best Regards

A handwritten signature in blue ink, appearing to read 'P. Nzethe', is written over the printed name.

**Pius Nzethe**  
Sales Engineer  
(Discrete Automation and motion)

**ABB Limited**

Postal Address:  
P.O. Box 39120-00623  
Nairobi, Kenya

Visiting Address:  
Cliffon Park, Mezzanine Fl,  
Mombasa Road, Nairobi

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## Product Overview

ABB's PCS100 RPC is the ideal solution for improving power quality in commercial and industrial electrical installations across a wide range of industries

### User Benefits

- Prevents costly penalties due to poor power factor or harmonics
- Ensures correct operation of rectifier loads, extending their lifetime, by correcting for voltage imbalance
- Lowers plant maintenance costs by not exposing equipment to poor quality power
- Low maintenance inverter technology, no risk of power factor capacitor overheating or resonance problems
- Imbalance Current Correction

### Features

- Modular design providing high reliability and short repair times
- Integrated solution for Power Factor correction, harmonics and inrush generated sags
- Small footprint
- Ratings from 100 kVA to 2000 kVA and voltages 380 Vac to 480 Vac
- High overload capability

## How It works

The PCS100 RPC uses high speed IGBT inverter technology to control reactive power flow into an AC network. There are two main control modes possible for the PCS100 RPC, these are:

- Power Factor Control
- Voltage Control

This defines the main operation of the RPC, to control the power factor to within a programmable range or to control the voltage to a set-point value. Additional functions can then be enabled in addition to the main control mode, such as:

- Harmonic filtering
- Imbalance (negative sequence) correction
- Voltage clamping



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## Technical Specifications

### Utility Connection

Voltage Note 1	380 - 480 V $\pm$ 10%
Power System	3-Phase, 3 wire
Frequency	50 or 60 Hz
Frequency Range	$\pm$ 5 Hz
Overvoltage Category	III
Supply Fault Capacity	Must be supplied from MCCB
Losses	2.7% at full load

### Ratings

Capacity Rating	150 A
Harmonic correction	5th and 7th Harmonic
Imbalance current capability	25% of nominal current

### User Interface

Type	8.4" LCD Touchscreen
Communications type	Ethernet
Functions	HTML server (monitoring only) Modbus-TCP (monitoring only)

### Environmental

IEC Pollution degree rating	2
Operating Temperature	0°C to 50°C (de-rate -2% current per 1°C above 40°C)
Capacity de-rating with altitude	1.0% / 100 m for application above 1000 m, 2000 m max
Humidity	< 95% non-condensing
Noise	< 75 dBA typical at 1 m

### Electromagnetic Compatibility

CISPR11

### Enclosures

Enclosure IP rating	IP20 / NEMA 1
HMI (GDM) panel IP rating	IP54 (from front)
Material	Electro-galvanized steel
Color	RAL 7035
Panel Thickness Side & Rear	1.5 mm
Panel Thickness - Door	2 mm
Enclosure Access	Left hand hinged doors with key lock

### Standards

IEC62103 Electrical Equipment for use in Power Installations

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### Basis of offer:

- Environmental data: Ambient temp @40 deg C and altitude 1600 mtrs.
- Power factor correction & Harmonic filtering mode.

### Scope of supply:

N°	Description	Qty
1.	IGBT Based Reactive Power controller for power factor correction, type <b>PCS100 25-01B-A05, 150A</b> . As per technical data sheet	1 nos

Inverter Current Rating A	kVAR @ 400 V	kVAR @ 440V	kVAR @ 480V	Inverters Quantity	Full load losses kW	Airflow m <sup>3</sup> /min	Frame Size	Weight kg	Type Code
150	104	114	125	1	3.1	10	0.5A	320	PCS100-25-01-A05

### Exclusions:

- Certification of any standard or agency.
- Power, control, screened cables and all cable accessories, external to the equipment supplied.
- Erection, installation or any kind of civil work of the equipment.
- Any other item not mentioned in the scope of supply.
- Type test & Load test.

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### Price Schedule:

Item	Description	Qty	Unit Price [USD]
001	IGBT Based Reactive Power controller for power factor correction, type PCS100 25-01B-A05, 150A. As per technical data sheet	1nos	33,500

Note:

1. Above prices are DDP – Nairobi
2. VAT will be extra as applicable
3. Supervision of commissioning @800 USD/ per man-day will be additional on actuals.

### Terms of payment

50% payment advance. 50% on receipt of material at site.

Payment transfer can be done through Bank EFT to :

Acc. Name: ABB Limited  
Bank: Citibank, N.A.  
Branch: Citibank House  
Swift Code: CITIKENA  
Account No.: 0104244015

### Delivery Period

20 weeks +6 weeks (approx.) sea freight from receipt of LPO and advance.

### Terms of Delivery

DDP, to Beta Health Care (Nairobi)

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## General Conditions of sales:

### Cancellation of order

Following signing of the Contract, in case the order is terminated or suspended unilaterally by the Customer for reasons not attributable to ABB, indemnification of ABB's loss and damage by the Customer shall be calculated as follows:

Within 30 days, 30% of total contract amount

Between one to two months, 50% of total contract amount

After two months 100%

### Validity of Quotation

This quotation is valid for a period of 30 days from date of this offer, and valid strictly for the specified scope.

**Please note, in order expedite the delivery we request you to release the purchase order as ASAP.**

We trust that our offer will be sufficient for the evaluation and wait with interest to hear further from you. Should you need any further information or assistance, please do not hesitate to contact the undersigned.

Yours faithfully,  
For ABB Ltd

A handwritten signature in blue ink, appearing to read 'Pius Nzethe'.

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