

**Germany-Hamburg: Power supply transformers**

OJ S 93/2015 15/05/2015

Contract notice

Supplies

Directive 2004/18/EC

**Section I: Contracting authority**

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**I.1. Name and addresses**

Official name: Deutsche Elektronen-Synchrotron DESY

Postal address: Notkestraße 85

Town: Hamburg

Postal code: 22607

Country: Germany

For the attention of: Frau Roy

E-mail: [warenwirtschaft.v4sk@desy.de](mailto:warenwirtschaft.v4sk@desy.de)

Telephone: +49 4089982480

Fax: +49 4089984009

**Internet address(es):**General address of the contracting authority: [www.desy.de](http://www.desy.de)**Additional information can be obtained from:**

the abovementioned address

**Specifications and additional documents (including documents for competitive dialogue and a dynamic purchasing system) can be obtained from:**

the abovementioned address

**Tenders or requests to participate must be submitted:** the abovementioned address**I.2. Type of the contracting authority**

Other: foundation under german civil law

**I.3. Main activity**

Other: research

**I.4. Contract award on behalf of other contracting authorities**

The contracting authority is purchasing on behalf of other contracting authorities: no

**Section II: Object of the contract**

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**II.1. Description****II.1.1. Title attributed to the contract by the contracting authority**

EO 015-15 XFEL: Manufacture and supply of 4 units Beam dump power supplies for the European XFEL.

**II.1.2. Type of contract and place of performance or delivery**

Supplies

Purchase

Main site or place of performance: DESY, Notkestrase 85, 22607 Hamburg, Germany.

NUTS code DE600 Hamburg

**II.1.3. Information about a framework agreement or a dynamic purchasing system**

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#### **II.1.4. Information about framework agreement**

#### **II.1.5. Short description of the contract or purchase(s)**

A beam dump power supply consists of an input stage e.g. active front end with circuit breaker and contractor, a DC-link capacitor bank and 3 bipolar output stages with filters, measurement and redundancy/grounding switches. The output stages have to be bipolar with H-bridge design.

The magnetic fields of the beam dump magnets are perpendicular to each other. By this the beam can be steered in a circular Lissajous curve. The magnet sinusoidal currents have a phase shift of 90°.

Fig. 1 shows the principle schematic. The inverter plus filter and measurement is called power supply (PS). Inverter 1 corresponds to power supply 1 (PS\_1) etc.

The input is connected to the 400 V mains. It charges the DC link capacitor with constant power.

The capacitor bank has to provide the energy for bipolar PS that supply the dump magnets with alternating sinusoidal currents. During the rising slope of the magnet current, the DC link will supply energy for the magnet. On the falling slope of the magnet current; the energy will be fed back into the DC link. The capacitance has to be chosen to more than 5 F in order to keep the voltage variation small. The capacitor current and voltage have to be measured.

For the operation of the beam dump supply, 2 PS will be active and will feed the magnet loads. In case of a failure the broken PS will be disconnected from the load and the third PS will be switched onto the magnet and activated. The switches are called redundancy switches. They will contain also a grounding switch that short circuits the output of the supply to ground to allow save work at the magnets.

Nominal output current: +/- 140 A

Nominal output voltage: +/- 130 V

Operation frequency of magnet current 0.3 to 0.4 Hz

Adjustable frequency steps 0.01 Hz

Output ripple max at PWM frequency: 1.0 V pp

Other frequencies < 0.1 V

for higher frequencies see EMC Standards

Power input voltage 400 V 3~ +/- 10 %, 50 Hz

Auxiliary supply voltage: 400 V 3~+neutral and PE +/- 10 %, 50 Hz, with CEE connector

Output ripple frequency > 22 kHz

Insulation voltage of the power part to ground: 2.5 kVrms

Insulation resistance to ground: > 10 M

Ambient temperature: 10 – 50 °C

MTBF >70 000 hrs.

#### **II.1.6. CPV code(s)**

31174000 Power supply transformers

#### **II.1.7. Information about the Government Procurement Agreement (GPA)**

The procurement is covered by the Government Procurement Agreement: no

#### **II.1.8. Lots**

This contract is divided into lots: no

#### **II.1.9. Information about variants**

Variants will be accepted: no

### **II.2. Scope of the procurement**

### **II.2.1. Total quantity or scope**

4 units Beam dump power supplies  
Nominal output current: +/- 140 A  
Nominal output voltage: +/- 130 V  
Operation frequency of magnet current 0.3 to 0.4 Hz  
Adjustable frequency steps 0.01 Hz  
Output ripple max at PWM frequency: 1.0 V pp  
Other frequencies < 0.1 V.

### **II.2.2. Information about options**

Options: no

### **II.2.3. Information about renewals**

This contract is subject to renewal: no

### **II.3. Duration of the contract or time limit for completion**

Start 3.1.2016. Completion 31.5.2016

## **Section III: Legal, economic, financial and technical information**

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### **III.1. Conditions related to the contract**

#### **III.1.1. Deposits and guarantees required**

Please refer to the commercial part of the tender documents.

#### **III.1.2. Main financing conditions and payment arrangements and/or reference to the relevant provisions governing them**

Please refer to the commercial part of the tender documents.

#### **III.1.3. Legal form to be taken by the group of economic operators to whom the contract is to be awarded**

Please refer to the commercial part of the tender documents.

#### **III.1.4. Contract performance conditions**

The performance of the contract is subject to particular conditions: no

### **III.2. Conditions for participation**

#### **III.2.1. Suitability to pursue the professional activity, including requirements relating to enrolment on professional or trade registers**

List and brief description of conditions: A recent excerpt from the commercial register extract. Bidders who do not have your seat in the Federal Republic of Germany have to submit relevant certificates.

- Self-declaration that the bidder has properly fulfilled its obligations to pay taxes and fees.
- Self-declaration that the tenderer has his contributions to the statutory social duly fulfilled.
- Self-declaration that the requirements of § 6EG VOL / A (conviction under § § 129, 129a, 129b, § 261 StGB; § 263 StGB; § 264 StGB; § 334 St GB; Article 2 § § 1 or 2 IntBestG and § 370 AO) are not met/existing.

#### **III.2.2. Economic and financial ability**

List and brief description of conditions: — Self-declarations stating that no liquidation has been initiated or is pending against the tenderer.

- Self-declaration stating that no disclosure of insolvency or similar legal proceedings have been initiated or are pending against the tenderer.
- Self-declarations of overall turnover for the last 3 completed financial years of the company.

### **III.2.3. Technical and professional ability**

List and brief description of conditions:

- Presentation of three references for the design of similar services with details of the address, contact person and their phone number of the last 5 years.
- Detailed production and delivery plan.
- Detailed illustration of the technical data:

Brief description

Circuit diagram

Design calculation of main components

List of main components such as semiconductors, chokes

Description of the main capacitor bank and protection

Calculated efficiency at different output levels

Quantity of water needed

Power dissipation into water/air

Current load of capacitors

Lifetime calculation of the semiconductors with respect to the thermocycles

First design mechanical drawing

Size

App. Weight

List of previous projects in power supply production, knowledge of use of supercapacitors.

- Knowledge of AFE(Active Front End)

- Construction of bipolar power supplies (DC/AC Converter)

- Experience in the use of Supercapacitors.

### **III.2.4. Information about reserved contracts**

### **III.3. Conditions specific to services contracts**

#### **III.3.1. Information about a particular profession**

#### **III.3.2. Information about staff responsible for the performance of the contract**

## **Section IV: Procedure**

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### **IV.1. Type of procedure**

#### **IV.1.1. Type of procedure**

Open

#### **IV.1.2. Information about the limits on the number of candidates to be invited**

#### **IV.1.3. Information about reduction of the number of solutions or tenders during negotiation or dialogue**

### **IV.2. Award criteria**

#### **IV.2.1. Award criteria**

The most economically advantageous tender in terms of Price is not the only award criterion and all criteria are stated only in the procurement documents

#### **IV.2.2. Information about electronic auction**

An electronic auction will be used: no

#### **IV.3. Administrative information**

##### **IV.3.1. File reference number attributed by the contracting authority**

EO 015-15 XFEL

##### **IV.3.2. Previous publication concerning this procedure**

no

##### **IV.3.3. Conditions for obtaining specifications and additional documents or descriptive document**

Time limit for receipt of requests for documents or for accessing documents: 18.6.2015

Payable documents: no

##### **IV.3.4. Time limit for receipt of tenders or requests to participate**

30.6.2015 - 12:00

##### **IV.3.5. Estimated date of dispatch of invitations to tender or to participate to selected candidates**

##### **IV.3.6. Languages in which tenders or requests to participate may be submitted**

German. English.

##### **IV.3.7. Minimum time frame during which the tenderer must maintain the tender**

##### **IV.3.8. Conditions for opening of tenders**

Date: 30.6.2015

Persons authorised to be present at the opening of tenders: no

#### **Section VI: Complementary information**

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##### **VI.1. Information about recurrence**

This is a recurrent procurement: no

##### **VI.2. Information about European Union funds**

The procurement is related to a project and/or programme financed by European Union funds:

no

##### **VI.3. Additional information**

##### **VI.4. Procedures for review**

###### **VI.4.1. Review body**

Official name: Vergabekammer des Bundes beim Bundeskartellamt

Postal address: Villemombler Str. 76

Town: Bonn

Postal code: 53123

Country: Germany

###### **VI.4.2. Review procedure**

###### **VI.4.3. Service from which information about the review procedure may be obtained**

###### **VI.5.**

**Date of dispatch of this notice**

11.5.2015