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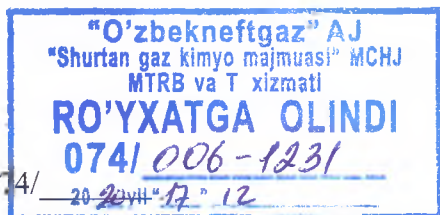
Главный энергетик

ООО «Шуртанского ГХК»



А. Бекназаров

2020 г.



Per. № 014/

Техническое задание на закупку
электрооборудования и запчастей для газотурбинной установки
ООО "Шуртанского ГХК"

ШГХК 2020 г.

1. ОБЩИЕ СВЕДЕНИЯ

1.1 Наименование

Зарядное устройство, трехфазный контрольный реле, блокировочное реле, реле таймера, электродвигатель и частотный преобразователь.

1.2 Основание и цель приобретения оборудования

Основание: Годовая заявка 2021 год.

Цель: Бесперебойная работа газотурбинной установки.

1.3 Сведения о новизне (год производства/выпуска оборудования)

Товар должен быть новым, ранее не эксплуатировавшимся, производства не ранее 1 года со дня поставки.

2. ТЕХНИЧЕСКИЕ ТРЕБОВАНИЯ

2.1 Основные технические требования

№	Наименование показателя	Наименование и краткие характеристики товара	Ед. изм	Кол -во	Техническим характеристикам
1	Зарядное устройство	Зарядит 56 шт батарею, суммарный мощность и напряжения батареях 280Ah, 125V DC	шт	1	KRAFTELEKTRONIK TYPE: PCR3 110/100 Вход: 400V 3-Phase 50-60 Hz Выход: DC 110V 100A Максимальная высота-700 мм, ширина приблизительно-300 мм, длина приблизительно-400 мм. Ток зарядного устройства должен быть не менее 100 A.
2	Реле контроля напряжение	Реле для контроля трехфазного напряжения.	шт	1	Трехфазный контрольный реле DUFR2. Монитор 3-фазного напряжения Регулировка порога повышенного и пониженного напряжения Регулируемая задержка превышения порогового значения от 0,1 до 10 секунд Выходное реле 10A SPDT Серия UFRN2 - обнаруживает отсутствие нейтрали Три светодиодных индикатора. Две контакты: одна открытый и одна закрытый контакт, номинальные напряжения обмоток реле AC 230V
3	Блокировочное реле.	Многофункциональный двухобмоточного блокировочное реле	шт	1	Блокировочное реле AD 8851.19 двух катушечный. 50-60 Гц, минимальная время > 50 мсек, диапазон температур: -20 +45 град, Номинальное потребление AC 5,3 VA, 28W. Восемь контакты: четыре открытый и четыре закрытый контакт, два катушка DC 110V. Реле соответствует IEC 255. Две шарнирные магнитные системы якоря, которые взаимно заблокированы, выполняют бистабильную функцию фиксирующего реле. Реле имеет



					<p>прочную, устойчивую к деформации монтажную раму, в которой размещены магнитные системы и общий контактный блок, поэтому реле может выдерживать самые серьезные механические нагрузки. Защелки блокировки изготовлены из пластика с низким коэффициентом трения, что обеспечивает длительный срок службы инструмента. Реле работает путем импульсного или непрерывного возбуждения катушек А1-А2 или В1-В2. При одновременном возбуждении обеих систем блокировка открыта; положение контакта соответствует возбуждению катушки В1-В2. Реле соответствует IEC 255</p>
4	Таймер реле.	Реле для таймера газотурбинного оборудования	шт	1	<p>Реле MTF-P 11-265 V DC. В таймер встроено 16 диапазонов времени, от 0,06 секунды до 20 часов, индикаторы состояния питания и реле и беспотенциальные контакты, сконфигурированные как 2-полюсные переключающие, каждый рассчитан на 230 В переменного тока, резистивную нагрузку 5 А. номинальные напряжения обмоток реле DC 110V. Максимальная высота-88 mm, ширина приблизительно-37 mm, длина приблизительно-60 mm.</p>
5	Электродвигатель	Электродвигатель для старта газотурбины.	шт	1	<p>Электродвигатель M2 AA 250 SMB 4. (START MOTOR). 400VAC, 50Hz, 75 kW, 1480 rpm, 132 A, IP55, класс изол."F". Монтажное исполнение-фланцевый, габариты корпуса (длина — 872, ширина — 471, высота — 578) длина вала — 818, диаметр вала - Ø65mm, крепеж по фланцам — Ø500, диаметр фланца — Ø 550, диаметр отверстий крепления фланца — Ø19 (8x) масса — 370кг, рама алюминиевая. На задней стороне электродвигателя должно быть специальное место для ручного вращения, которое понадобится для поддержания вращения</p>



					<p>устройства на 3 оборота. Продолжительность включения. (200 сек): Разгон 0-950 об / мин. За 20 сек при постоянном крутящем моменте 1160 Нм, работа при 950 об/мин, в течение 150 сек, 70 кВт. Разгон 950-1100 об/мин при постоянном крутящем моменте 800 Нм приблизительно 10 сек. Разгон 1100-2500 об/мин, за 20 сек при постоянной мощности 90 кВт. Максимум пусков в час: 6. Расположение клеммной коробки Стандартная клеммная коробка, установленная на стороне nde кабельного ввода двигателя в осевом направлении со стороны nde. В коробке должно быть 2 смонтированных кабельных ввода 1xpg36 и 1xpg11. Обмотки двигателя должны иметь термодатчик для контроль температуры.</p>
6	Частотный преобразователь	Пуск для стартового электродвигателя газотурбины.	шт	1	<p>ABB ACS 880-01-169A-3 Input: 3AC 400VAC, 169A, 50/60Hz Output: 3AC, 0-Un, 169A, 0-500Hz, Sn=117 kVA Максимальная высота-880 мм, ширина приблизительно-365 мм, длина приблизительно-284 мм, Тип монтажа: настенный Мощность, кВт: 90 Номинальный ток, А: 169 Напряжение питания, В: 380-415 Фазность (количество фаз): 3 Выходная частота, Гц: 0-500 Класс защиты: IP21 Перегрузка, % в течение 1 минуты: 200 Время разгона, с: 0,1-1800 Время торможения, с: 0,1-1800 ЭМС фильтр: опция Тормозной блок: опция Аналоговый вход, кол-во: 2 Дискретный вход, кол-во: 6 Аналоговый выход, кол-во: 2 Дискретный выход, кол-во: 2 Релейный выход, кол-во: 3</p>

2.2 Требования к маркировке



Маркировка зарядное устройства согласно по IEC 60335-2-29-2012
Маркировку реле должны выполнять в соответствии с требованиями ГОСТ 12434
Маркировка электродвигатель согласно по ГОСТ 30195-94
Маркировка частотный преобразователь согласно по ГОСТ 26118

3. ТРЕБОВАНИЯ ПО ПРАВИЛАМ СДАЧИ И ПРИЕМКИ

3.1 Порядок сдачи и приемки

Продукция должна быть новой и ранее неиспользованной.
Товар не должен иметь дефектов (скрытых дефектов), связанных с конструкцией, использованными материалами или дефектов изготовления,
Доставка товара на условиях DAP, за счет Поставщика, путем поставки автомобильным и/или железнодорожным транспортом в адрес грузополучателя, иные способы отгрузки могут производиться только по письменному одобрению Заказчика.
При ошибочной отгрузке товара не по адресу, Поставщик своими силами за свой счет производит переадресацию продукции в пункт назначения, указанный в договоре.

4. ТРЕБОВАНИЯ К ТРАНСПОРТИРОВАНИЮ

Согласно ГОСТ 18088-83

5. ТРЕБОВАНИЯ К ХРАНЕНИЮ

Маркировку реле должны выполнять в соответствии с требованиями ГОСТ 12434 и стандартов или технических условий на реле конкретных серий или типов. Согласно ГОСТ 18088-83

6. ТРЕБОВАНИЯ К ОБЪЕМУ И/ИЛИ СРОКУ ПРЕДОСТАВЛЕНИЯ ГАРАНТИЙ

Гарантийный срок товара не менее 1 года.

7. ТРЕБОВАНИЯ ПО БЕЗОПАСНОСТИ

Товар должно полностью соответствовать требованиям стандарта безопасности ISO-45001.

8. ТРЕБОВАНИЯ К КАЧЕСТВУ И КЛАССИФИКАЦИИ

Товар должно полностью соответствовать требованиям стандарта качества ISO-9001.

9. ТРЕБОВАНИЯ К КОЛИЧЕСТВУ, КОМПЛЕКТАЦИИ, МЕСТУ И СРОКУ (ПЕРИОДИЧНОСТИ) ПОСТАВКИ

Предпочтительный срок поставки после заключения контракта 10 календарных дней.
Вагонная/контейнерная поставка: DAP - ж/д. ст. Кенгсой (код станции – 732602),
ГАЗК «Узбекистон Темир Йуллари»
Транспортная поставка: DAP - Республика Узбекистан, Кашкадарьинская область, Гузарский район, п. Шуртан, 180300

*Примечание: За правильность заполнения и незаполненным пунктом ответственность несёт разработчик.

Разработано:

Начальник ЭТЛ:

Согласовано:

Заместитель главного энергетика:

Начальник цеха ЭС :

Инженер СУМТР и Р:

Мастер ЭТЛ:

Р. Ражабов

М. Гаппаров

М. Бегмуратов

Б. Бойбаччаев

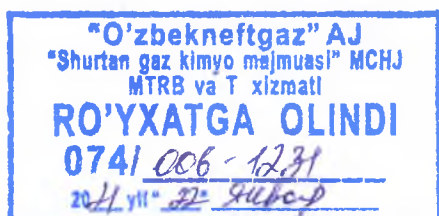
А. Пардаев





CONFIRM

Chief power engineer of Shurtan GCC LLC
A. Beknazarov
2020.



TECHNICAL ASSIGNMENT
for purchasing electric motor for gas turbine unit
of Shurtan GCC LLC

SGCC 2020

1. GENERAL INFORMATION

1.1. Name
Electric motor
1.2. Basis and purpose of purchasing goods
Basis: Unscheduled request for 2021
Purpose: Uninterrupted operation of the gas turbine unit
1.3 Information about novelty (year of production/manufacture of goods)
The goods must be new, not previously used. The date of production of the goods must be no earlier than one year.

2. TECHNICAL REQUIREMENTS

2.1. Basic technical requirements					
No	Parameter	Name and brief characteristics of the goods	Unit	Quantity	Technical characteristics
1	Electric motor	Electric motor for starting the gas turbine.	pc	1	<p>Electric motor M2 AA 250 SMB 4. (STARTER MOTOR). 400VAC, 50Hz, 75 kW, 1480 rpm, 132 A, IP55- insulation class F, flange mounted, dimensions of body (length - 872, width - 471, height - 578) length of shaft - 818, diameter of shaft - Ø65mm, flange mounting - Ø500, flange diameter - Ø 550, flange mounting holes diameter - Ø19 (8x) weight - 370kg, aluminum frame.</p> <p>On the back of the motor should be special space for manual rotation, which will be needed for rotating the device by 3 turns. Duty rating (200 s): Speed 0-950 rpm. For 20s at a constant torque of 1160 Nm, speed at 950 rpm, for 150 s, 70 kW. Speed from 950 to 1100 rpm at a constant torque of 800 Nm in approximately 10 s. Speed 1100-2500 rpm, in 20s at a constant power of 90 kW. Maximum starts per hour: 6. Terminal box location. Standard terminal box mounted on the axial side of the motor cable entry on the</p>

					motor cable gland. The box must contain 2 pre-assembled cable glands 1xpg36 and 1xpg11. The motor windings must have a temperature sensor to monitor the temperature.
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2.2 Requirements for labeling

Labeling of starter motor should be according to GOST 30195-94

- manufacturer's trademark;
- name and designation of equipment;
- serial number;
- basic specifications with the indication of units;
- representation of standards or technical conditions (if available);
- degree of protection;
- date of manufacture (month, year)

3. REQUIREMENTS TO RULES FOR DELIVERY AND ACCEPTANCE

3.1 Order of delivery and acceptance

Acceptance of the supplied equipment is carried out by the Customer, taking into account the conformity of the quantity, completeness, and quality of the equipment at the Customer's warehouse. Goods should be new and not previously used. In case of a shortage of equipment, the parties with authorized representatives for each party draw up an acceptance certificate of equipment in quantity. The goods must be free from defects (latent defects) related to design, materials used, or manufacturing defects. Delivery of goods on DAP terms, at the Supplier's expense, by road and-or railway transport to the consignee's address, an alternate method of dispatch can be made only with the written approval of the Customer. In case of faulty shipment to a wrong address, Supplier, at his charge, readdresses the goods to the destination point specified in the contract.

3.2 Delivery in complete sets

The delivery set of the starter motor should include the following:

- A starter motor with mounted fan drive
- A certificate with a factory test reports;
- Operating manual, including a dimensional drawing of the starter motor and fan, connection diagram of external cables to the starter motor (diagram should also show all windings and terminals, all built-in elements and their outputs), technical characteristics of the starter motor and fan;
- User's manual;
- Checklist;
- Certificate of the country of origin of the good;
- Quality certificate for the starter motor;
- Certificate of compliance with industrial safety requirements (including compliance with explosion protection requirements);

3.3 Requirements for transfer of technical and other documents to the Customer at goods supply

The basic specifications of the starter motor including safety data sheet.
Contents of the detailed design documentation submitted to the customer for consideration before concluding a contract for the purchase of a starter motor:

- Dimensional and installation drawings of the starter motor;
- Dimensional and installation drawings of the fan with complete technical data;
- Frequency-controlled motor characteristics - torque curve and power versus motor speed:

4. TRANSPORTATION REQUIREMENTS

Packing of the starter motor should ensure safety during transportation by any kind of transport at any distance. Especially during railway transportation should exclude axial and radial-motion variations of the motor rotor and protect the bearings from damage. According to GOST 18088-83

5. STORAGE REQUIREMENTS

According to GOST 30195-94

6. SERVICE REQUIREMENTS

The guarantee period is not less than 12 months.

During the warranty period, the malfunction is caused by a design defect, inappropriate material, low-quality production, and not the result of force-majeure, neglect, mishandling, modification, or damage from the Customer's personnel or third parties, the Supplier has to replace or repair a defective part of the equipment at his own expense. If the warranty period, the Supplier replaces or repairs any part of the equipment, the Supplier provides a warranty for such replaced or repaired ones. In this case, the warranty period is established as per applicable law.

7. REQUIREMENTS FOR SCOPE AND-OR GUARANTEE PERIOD

The warranty period is 12 months from the date the motor started up but not more than 18 months from the shipping date.

8. REQUIREMENT FOR THE FORM OF SUBMITTED INFORMATION

Technical and other information should be presented in Russian and English on paper

9. SAFETY REQUIREMENTS

The goods should fully correspond to the ISO-45001 safety standard.

10. REQUIREMENTS FOR QUALITY AND CLASSIFICATION

The goods should fully correspond to ISO-9001 quality standards.

11. REQUIREMENTS FOR SCOPE AND-OR GUARANTEE PERIOD

The preferred delivery time after the conclusion of the contract is 10 calendar days.

Container/Railway wagon shipping: DAP – the railway station Kengsoy (station code - 732602), SSRC (stock state railway company) "Uzbekistan Railways"

Truck delivery: DAP – 180300, Shurtan settlement, Guzar district, Kashkadarya region, the Republic of Uzbekistan

**Note: The developer is responsible for correct filling and blank items.*

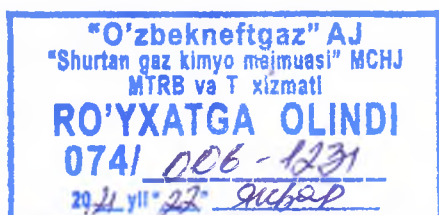


CONFIRM

Chief power engineer of Shurtan GCC LLC
A. Beknazarov

2020.

Reg. No 074/



TECHNICAL ASSIGNMENT

for purchasing battery charger for gas turbine unit
of Shurtan GCC LLC

1. GENERAL INFORMATION

1.1. Name	
Battery charger	
1.2. Basis and purpose of purchasing goods	
Basis: Unscheduled request for 2021	
Purpose: Uninterrupted operation of the gas turbine unit	
1.3 Information about novelty (year of production/manufacture of goods)	
The goods must be new, not previously used. The date of production of the goods must be no earlier than one year.	

2. TECHNICAL REQUIREMENTS

2.1. Basic technical requirements					
No	Parameter	Name and brief characteristics of the goods	Unit	Quantity	Technical characteristics
1	Battery charger	Charges 56 pcs batteries, total power and battery voltage 280Ah, 125V DC	pc	1	KRAFTELEKTRONIK TYPE: PCR3 110/100 Input: 400V 3-Phase 50-60 Hz Output: DC 110V 100A Maximum height-700 mm, width approx.-300 mm, length approx.-400 mm. The charger current must be at least 100 A.
2.2 Requirements for labeling					
Labeling of a battery charger according to IEC 60335-2-29-2012					

3. REQUIREMENTS TO RULES FOR DELIVERY AND ACCEPTANCE

3.1 Order of delivery and acceptance	
Acceptance of the supplied equipment is carried out by the Customer, taking into account the conformity of the quantity, completeness, and quality of the equipment at the Customer's warehouse. Goods should be new and not previously used. In case of a shortage of equipment, the parties with authorized representatives will draw up an acceptance certificate of equipment in quantity. The goods must be free from defects (latent defects) related to design, materials used, or manufacturing defects. Delivery of goods on DAP terms, at the Supplier's expense, by road and-or railway transport to the consignee's address, an alternate method of dispatch can be made only with the written approval of the Customer. In case of faulty shipment to a wrong address, Supplier, at his charge, readdresses the goods to the destination point specified in the contract.	
3.2 Requirements for transfer of technical and other documents to the Customer at goods supply	
The goods should be supplied, with a set of technical documentation, consisting of at least: certificate, technical description in English and Russian. Labeling should be performed in English and Russian, should be indicated clearly, and stamped out in an accessible place for recognition.	

4. TRANSPORTATION REQUIREMENTS

According to GOST 18088-83

5. STORAGE REQUIREMENTS

The equipment should be stored in packing and containers to ensure its safety. Storage of the equipment should comply with the manufacturer's temperature and humidity requirements. Requirements for temperature and humidity for storage of equipment should be applied to containers and packing.

6. SERVICE REQUIREMENTS

The guarantee period is not less than 12 months.

During the warranty period, the malfunction is caused by a design defect, inappropriate material, low-quality production, and not the result of force-majeure, neglect, mishandling, modification, or damage from the Customer's personnel or third parties, the Supplier at his expense has to replace or repair a defective part of the equipment. If the warranty period, the Supplier replaces or repairs any part of the equipment, the Supplier provides a warranty for such replaced or repaired ones. In this case, the warranty period is established as per applicable law.

7. REQUIREMENTS FOR SCOPE AND-OR GUARANTEE PERIOD

The warranty period for the goods is at least one year.

8. SAFETY REQUIREMENTS

The goods should fully correspond to the ISO-45001 safety standard.

9. REQUIREMENTS FOR QUALITY

The goods should be supplied with the corresponding documents in the delivery package: safety data sheet, operating manual, etc. The supplied goods should comply with the quality and completeness of the accompanying technical documentation and the requirements of laws of the Republic of Uzbekistan.

10. REQUIREMENT FOR THE FORM OF SUBMITTED INFORMATION

Technical and other information should be presented in Russian and English on paper

11. SAFETY REQUIREMENTS

The goods should fully correspond to ISO-45001 safety standards.

12. REQUIREMENTS FOR QUALITY AND CLASSIFICATION

The goods should fully correspond to ISO-9001 quality standards.

13. REQUIREMENTS FOR SCOPE AND-OR GUARANTEE PERIOD

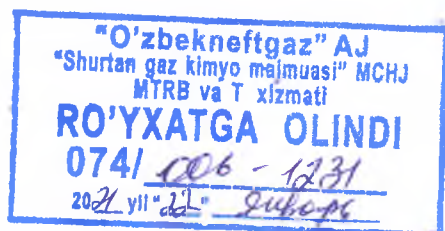
The preferred delivery time after the conclusion of the contract is 10 calendar days.
Container/Railway wagon shipping: DAP – the railway station Kengsoy (station code - 732602), SSRC (stock state railway company) "Uzbekistan Railways"
Truck delivery: DAP – 180300, Shurtan settlement, Guzar district, Kashkadarya region, the Republic of Uzbekistan

**Note: The developer is responsible for correct filling and blank items.*



CONFIRM

Chief power engineer of Shurtan GCC LLC
A. Beknazarov
2020.



TECHNICAL ASSIGNMENT
for purchasing relay for gas turbine unit
of Shurtan GCC LLC

1. GENERAL INFORMATION

1.1. Name
Three-phase control relay, latching relay, time relay
1.2. Basis and purpose of purchasing goods
Basis: Unscheduled request for 2021
Purpose: Uninterrupted operation of the gas turbine unit
1.3 Information about novelty (year of production/manufacture of goods)
The goods must be new, not previously used. The date of production of the goods must be no earlier than one year.

2. TECHNICAL REQUIREMENTS

2.1. Basic technical requirements					
No	Parameter	Name and brief characteristics of the goods	Unit	Quantity	Technical characteristics
1	Voltage-check relay	Relay for monitoring three-phase voltage	pc	1	Three-phase monitoring relay DUFR2. Monitor 3-phase voltage. Over and under voltage threshold adjustment. Adjustable 0.1 to 10 second threshold overrun time delay 10A SPDT output relay UFRN2 series - detects absence of neutral. Three LED indicators. Two contacts: one open and one closed, rated voltage of coil relay: AC 230V.
2	Latching relay	Multifunctional double winding latching relay	pc	1	Latching relay AD 8851.19 2 coils 50-60 Hz, minimum time > 50 ms, temperature range: -20+450C, nominal consumption AC 5.3 VA, 28W. Contacts type: 4 O/C, two coils: 110VDC. Relay complies with IEC 255. The two hinged magnetic armature systems that are mutually interlocked perform the bistable function of a latching relay. The relay has a robust, deformation-resistant mounting frame that houses the magnetic system and a common terminal so the relay can withstand the most severe mechanical loads. The locking latches are made of low-friction plastic for long tool life. The relay runs by pulsed or continuous excitation of coils A1-A2 or

					B1-B2. Both systems are simultaneously excited, the lock is open; a position of contact corresponds to the excitation of the coil B1-B2. Relay conforms to IEC 255
3	Time relay	Timer relay for gas turbine unit	pc	1	Relay MTF-P 11-265 V DC. 16 Built-in time ranges: 0.06s to 20 h, power and relay status indicators and potential-free contacts, configured as 2-pole changeover contacts, each designed for 230 VAC, 5 A resistive load. Nominal coil voltage 110 VDC. Maximum height-88 mm, width approx.-37 mm, length approx.-60 mm.

2.2 Requirements for labeling

Relays must be labeled as per the requirements of GOST 12434

3. REQUIREMENTS TO RULES FOR DELIVERY AND ACCEPTANCE

3.1 Order of delivery and acceptance

Acceptance of the supplied equipment is carried out by the Customer, taking into account the conformity of the quantity, completeness, and quality of the equipment at the Customer's warehouse. Goods should be new and not previously used. In case of a shortage of equipment, the parties with authorized representatives will draw up an acceptance certificate of equipment in quantity. The goods must be free from defects (latent defects) related to design, materials used, or manufacturing defects.

Delivery of goods on DAP terms, at the Supplier's expense, by road and-or railway transport to the consignee's address, an alternate method of dispatch can be made only with the written approval of the Customer. In case of faulty shipment to a wrong address, Supplier, at his charge, readdresses the goods to the destination point specified in the contract.

3.2 Requirements for transfer of technical and other documents to the Customer at goods supply

The goods should be supplied, with a set of technical documentation, consisting of at least: certificate, technical description in English and Russian. Labeling should be performed in English and Russian, should be indicated clearly, and stamped out in an accessible place for recognition.

4. TRANSPORTATION REQUIREMENTS

According to GOST 18088-83

5. STORAGE REQUIREMENTS

Relays must be labeled as per the requirements of GOST 12434 and standards or technical specifications for relays of specific series or types and according to GOST 18088-83

6. REQUIREMENTS FOR SCOPE AND-OR GUARANTEE PERIOD

The warranty period for the goods is at least one year.

7. SERVICE REQUIREMENTS

The guarantee period is not less than 12 months.

During the warranty period, the malfunction is caused by a design defect, inappropriate material, low-quality production, and not the result of force-majeure, neglect, mishandling, modification, or damage from the Customer's personnel or third parties, the Supplier has

to replace or repair a defective part of the equipment at his expense. If the warranty period, the Supplier replaces or repairs any part of the equipment, the Supplier provides a warranty for such replaced or repaired ones. In this case, the warranty period is established as per applicable law.

8. SAFETY REQUIREMENTS

The goods should fully correspond to the ISO-45001 safety standard.

8.1. REQUIREMENTS FOR QUALITY

The goods should be supplied with the corresponding documents in the delivery package: safety data sheet, operating manual, etc. The supplied goods should comply with the quality and completeness of the accompanying technical documentation and the requirements of laws of the Republic of Uzbekistan.

9. REQUIREMENT FOR THE FORM OF SUBMITTED INFORMATION

Technical and other information should be presented in Russian and English on paper

10. SAFETY REQUIREMENTS

The goods should fully correspond to ISO-45001 safety standards.

11. REQUIREMENTS FOR QUALITY AND CLASSIFICATION

The goods should fully correspond to ISO-9001 quality standards.

12. REQUIREMENTS FOR SCOPE AND-OR GUARANTEE PERIOD

The preferred delivery time after the conclusion of the contract is 10 calendar days.
Container/Railway wagon shipping: DAP – the railway station Kengsoy (station code - 732602), SSRC (stock state railway company) “Uzbekistan Railways”
Truck delivery: DAP – 180300, Shurtan settlement, Guzar district, Kashkadarya region, the Republic of Uzbekistan

**Note: The developer is responsible for correct filling and blank items.*



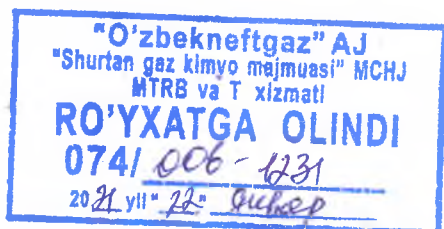
CONFIRM



Chief power engineer of Shurtan GCC LLC
A. Beknazarov

2020.

Reg. No 074/



TECHNICAL ASSIGNMENT

for purchasing frequency converter for gas turbine unit
of Shurtan GCC LLC

1. GENERAL INFORMATION

1.1. Name
Frequency converter
1.2. Basis and purpose of purchasing goods
Basis: Unscheduled request for 2021
Purpose: Uninterrupted operation of the gas turbine unit
1.3 Information about novelty (year of production/manufacture of goods)
The goods must be new, not previously used. The date of production of the goods must be no earlier than one year.

2. TECHNICAL REQUIREMENTS

2.1. Basic technical requirements					
No	Parameter	Name and brief characteristics of the goods	Unit	Quantity	Technical characteristics
1	Frequency converter	Start the starter motor of the gas turbine.	pc	1	ABB ACS 880-01-169A-3 Input: 3AC 400VAC, 169A, 50/60Hz Output: 3AC, 0-Un, 169A, 0-500Hz, Sn=117 kVA Maximum height-880 mm, width approx-365 mm, length approx-284 mm, Mounting type: wall-mounting Power: 90 kW Rated current: 169 A Input voltage: 380-415V Number of phases: 3 Output frequency: 0-500 Hz Enclosure class: IP21 Overload, % for 1 minute: 200 Acceleration time, s: 0.1-1800 Deceleration time, s: 0.1-1800 EMC filter: optional Brake unit: option Analog input, qty: 2 Digital input, qty: 6 Analog output, qty: 2 Digital output, qty: 2 Relay output, qty: 3

2.2 Requirements for labeling

A nameplate of goods should be attached containing the following information:

- manufacturer's trademark
- serial number;
- weight;
- degree of protection;

Labeling of the frequency converter should be according to GOST 26118

3. REQUIREMENTS TO RULES FOR DELIVERY AND ACCEPTANCE

3.1 Order of delivery and acceptance
Acceptance of the supplied equipment is carried out by the Customer, taking into account the conformity of the quantity, completeness, and quality of the equipment at the

Customer's warehouse. Goods should be new and not previously used. In case of a shortage of equipment, the parties with authorized representatives will draw up an acceptance certificate of equipment in quantity. The goods must be free from defects (latent defects) related to design, materials used, or manufacturing defects. Delivery of goods on DAP terms, at the Supplier's expense, by road and-or railway transport to the consignee's address, an alternate method of dispatch can be made only with the written approval of the Customer. In case of faulty shipment to a wrong address, Supplier, at his charge, readdresses the goods to the destination point specified in the contract.

3.2 Requirements for transfer of technical and other documents to the Customer at goods supply

Certificate and operating instructions in Russian, manufacturer's certificate, electrical circuits, certificates of conformity

4. TRANSPORTATION REQUIREMENTS

According to GOST 26118

5. STORAGE REQUIREMENTS

The equipment should be stored in packing and containers to provide its safety. Storage of the equipment should comply with the manufacturer's temperature and humidity requirements. Requirements for temperature and humidity for storage of equipment should be applied to containers and packing.

6. SERVICE REQUIREMENTS

The guarantee period is not less than 12 months.

During the warranty period, the malfunction is caused by a design defect, inappropriate material, low-quality production, and not the result of force-majeure, neglect, mishandling, modification, or damage from the Customer's personnel or third parties, the Supplier has to replace or repair a defective part of the equipment at his expense. If the warranty period, the Supplier replaces or repairs any part of the equipment, the Supplier provides a warranty for such replaced or repaired ones. In this case, the warranty period is established as per applicable law. Service during the warranty period one time per year but earlier than 6 months of operation at the supplier's expense. Service includes:

- Complete shutdown of the frequency converter, carrying out static tests.
- Disassembly of the frequency converter: cleaning contact, terminal connections, filters, radiators, fans.
- Start-up of the frequency converter without load - carrying out dynamic tests, taking oscillograph of the drive operation without load.
- Starting the frequency converter with load - carrying out dynamic tests, taking oscillograph of the drive operation under load.

7. REQUIREMENTS FOR SCOPE AND-OR GUARANTEE PERIOD

The warranty period for the goods is at least one year.

7.1 REQUIREMENTS FOR QUALITY

The goods should be supplied with the corresponding documents in the delivery package: safety data sheet, operating manual, etc. The supplied goods should comply with the quality and completeness of the accompanying technical documentation and the requirements of laws of the Republic of Uzbekistan.

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