PENTAIR JUNG PUMPEN

US EX

US 73 E, Ex US 73 D, Ex US 103 E, Ex US 103 D, Ex

EN Instruction Manual

You have purchased a product made by Pentair Jung Pumpen and with it, therefore, also excellent quality and service. Secure this service by carrying out the installation works in accordance with the instructions, so that our product can perform its task to your complete satisfaction. Please remember that damage caused by incorrect installation or handling will adversely affect the guarantee. Therefore please adhere to the instructions in this manual!

This appliance can be used by children aged 8 years or over and by persons with limited physical, sensory or intellectual capabilities, or with limited experience and knowledge, provided that they are supervised or have been instructed in the safe use of the appliance and are aware of the dangers involved. Children must not be allowed to play with the appliance. Cleaning and user maintenance must not be carried out by children unless they are supervised.

Damage prevention in case of failure

Like any other electrical device, this product may fail due to a lack of mains voltage or a technical defect.

If damage (including consequential damage) can occur as a result of product failure, the following precautions can be taken at your discretion:

- Installation of a water level dependent (under circumstances, mains-independent) alarm system, so that the alarm can be heard before damage occurs.
- Inspection of the collecting tank/chamber for tightness up to the top edge before – or at the latest, during – installation or operation of the product.
- Installation of backflow protection for drainage units that can be damaged by wastewater leakage upon product failure.
- Installation of a further product that can compensate in case of failure of the other product (e.g. duplex unit).
- Installation of an emergency power generator.

As these precautions serve to prevent or minimise consequential damage upon product failure, they are to be strictly observed as the manufacturer's guideline – in line with the standard DIN EN specifications as state of the art – when using the product (Higher Regional Court Frankfurt/Main, Ref.: 2 U 205/11, 06/15/2012).

SAFETY INSTRUCTIONS

This instruction manual contains essential information that must be observed during installation, operation and servicing. It is therefore important that the installer and the responsible technician/operator read this instruction manual before the equipment is installed and put into operation. The manual must always be available at the location where the pump or the plant is installed.

Failure to observe the safety instructions can lead to the loss of all indemnity.

In this instruction manual, safety information is distinctly labelled with particular symbols. Disregarding this information can be dangerous.

 General danger to people

 Warning of electrical voltage

NOTICE! Danger to equipment and operation

Qualification and training of personnel

All personnel involved with the operation, servicing, inspection and installation of the equipment must be suitably qualified for this work and must have studied the instruction manual in depth to ensure that they are sufficiently conversant with its contents. The supervision, competence and areas of responsibility of the personnel must be precisely regulated by the operator. If the personnel do not have the necessary skills, they must be instructed and trained accordingly.

Safety-conscious working

The safety instructions in this instruction manual, the existing national regulations regarding accident prevention, and any internal working, operating and safety regulations must be adhered to.

Safety instructions for the operator/user

All legal regulations, local directives and safety regulations must be adhered to.

The possibility of danger due to electrical energy must be prevented.

Leakages of dangerous (e.g. explosive, toxic, hot) substances must be discharged such that no danger to people or the environment occurs. Legal regulations must be observed.

Safety instructions for installation, inspection and maintenance works

As a basic principle, works may only be carried out to the equipment when it is shut down. Pumps or plant that convey harmful substances must be decontaminated.

All safety and protection components must be re-fitted and/or made operational immediately after the works have been completed. Their effectiveness must be checked before restarting, taking into account the current regulations and stipulations.

Unauthorised modifications, manufacture of spare parts

The equipment may only be modified or altered in agreement with the manufacturer. The use of original spare parts and accessories approved by the manufacturer is important for safety reasons. The use of other parts can result in liability for consequential damage being rescinded.

Unauthorised operating methods

The operational safety of the supplied equipment is only guaranteed if the equipment is used for its intended purpose. The limiting values given in the "Technical Data" section may not be exceeded under any circumstances.

Instructions regarding accident prevention

Before commencing servicing or maintenance works, cordon off the working area and check that the lifting gear is in perfect condition.

Never work alone. Always wear a hard hat, safety glasses and safety shoes and, if necessary, a suitable safety belt.

Before carrying out welding works or using electrical devices, check to ensure there is no danger of explosion.

People working in wastewater systems must be vaccinated against the pathogens that may be found there. For the sake of your health, be sure to pay meticulous attention to cleanliness wherever you are working.

Make sure that there are no toxic gases in the working area.

Observe the health and safety at work regulations and make

sure that a first-aid kit is to hand.

In some cases, the pump and the pumping medium may be hot and could cause burns.

For installations in areas subject to explosion hazards, special regulations apply!

APPLICATION

Explosion-protected submersible pumps from the US series are suitable for pumping highly polluted or fibrous wastewater without stones from collection chambers or other hazardous areas.

When using the pumps, the relevant national laws as well as national and local regulations must be complied with, for example:

- Installation of low voltage systems (e.g. VDE 0100 in Germany)
- Safety and working materials (e.g., BetrSichV and BGR 500 in Germany)
- Safety in wastewater systems (e.g., GUV-V C5, GUV-R 104 and GUV-R 126 in Germany)
- Electrical systems and operating resources (e.g., GUV-V A2 in Germany)
- Explosion protection EN 60079-0: 2009, EN 60079-1: 2007, EN 60079-14: 2008, EN 60079-17: 2007 and EN 1127-1: 2011

For non-standard utilisation conditions in areas subject to explosion hazards, please ask the local authority responsible. In Germany, this would be, for example, the Trade Supervisory Centre (Gewerbeaufsicht), the Technical Inspection Agency (TÜV), the building authority (Bauamt) or professional organisation (Berufsgenossenschaft).

The installation and operation of this equipment is regulated by the ordinance concerning the protection of health and safety in the provision of work equipment and its use at work, concerning safety when operating installations subject to monitoring, and concerning the organisation of industrial health and safety at work, (Betriebssicherheitsverordnung), Article 1.

Modes of operation

with the pumped medium at a temperature of 40°C:

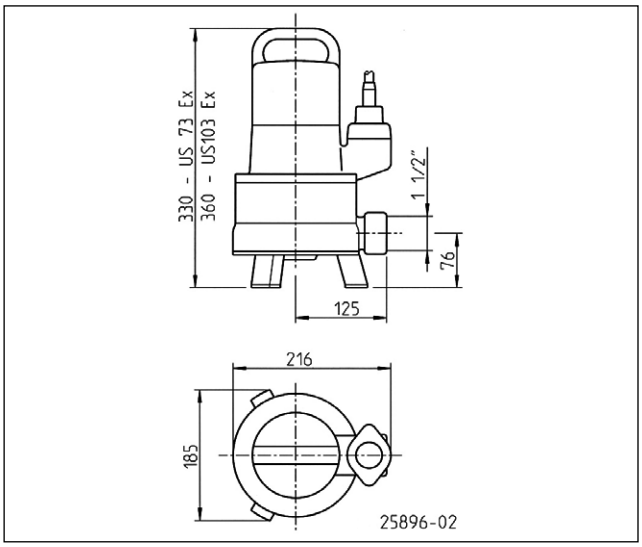
Motor submersed: continuous operation S1
Motor at the surface: short duration operation S2; see "Technical Data"
Motor at the surface: intermittent operation S3; see "Technical data"

The submersible pump is frost-resistant down to -20°C (-4°F) when stored in dry conditions. When installed, however, it must not be allowed to freeze in the water.

Transport

The pump must always be lifted by the handle and never by the power supply cable! The pump should only be lowered into deeper chambers or pits using a rope or chain.

Dimensions [mm]



ELECTRICAL CONNECTION

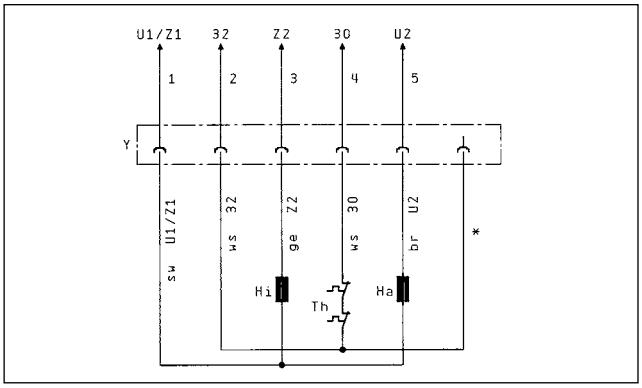
By using our controls, you can be sure that the requirements of the EU type-testing certificate are met.

NOTICE! Only qualified electricians may carry out electrical works to the pump or the controls.

The relevant standards (such as EN standards), country-specific regulations (such as VDE in Germany), and the regulations of the local power supply companies must be observed.

NOTICE! Never put the mains plug or a free lead end in water! If water gets into the plug, this can cause malfunctions and damage.

Circuitry for pumps running on alternating current (24089)

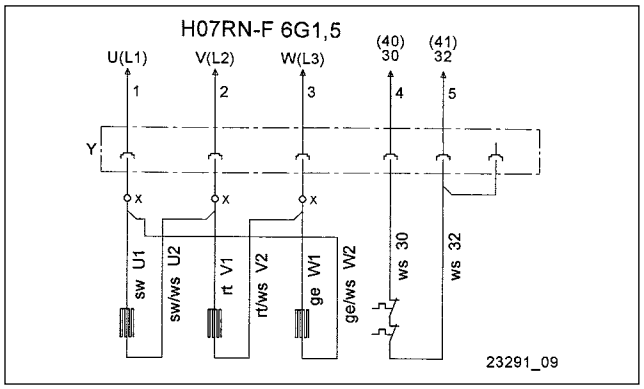


US... EX pumps running on alternating current must not be used without a control unit.

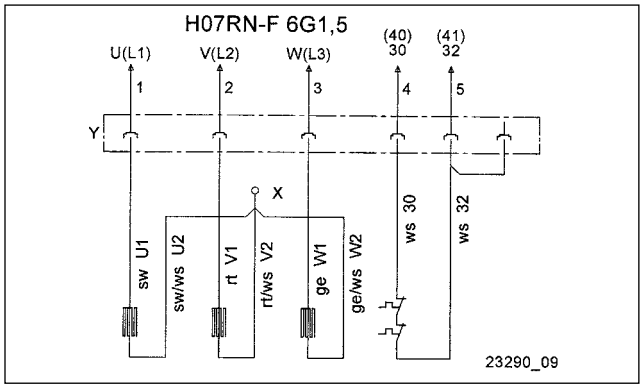
Pumps in alternating current versions are protected by 2 winding thermostats and a motor contact switch in the AD 4 XE or AD 8 XE control unit. The two operating condensers in the control unit must be dimensioned according to the measurements indicated in the Type Examination Certificate.

Capacity	8 µF or 20 µF
tolerance	± 10%
Operating voltage	400 V
Operating mode	continuous operation

Circuitry for low voltage (23291)



Circuitry for high voltage (23290)



Alterations to the circuitry are to be made using crimp connectors (X) between the Coni plug connection (Y) and the built-in motor. The new crimp connection must be professionally made.

Only slow-blow fuses or automatic fuses with C or D characteristics are to be used as pre-fuses for the pump. Necessary fuse protection for direct on-line start: 16 A.

The pump must be protected via an overload trip. Setting for direct on-line start = nominal current, and for star-delta start = nominal current x 0.58.

If the protective device has been triggered, the cause of the malfunction must be eliminated before switching on again.

Potential equalisation

To comply with EN 60079-14 and EN 1127-1, an additional potential equalisation must be installed for facilities with protective earth conductors in TN/TT networks in areas subject to explosion hazards. Explosion-protected pumps have a connection facility for this at the cable entry point. In Germany, for example, the design must be in accordance with VDE 0100, Part 540 (from the Association of German Electrical Engineers).

According to a statement made by the German inspection authority TÜV Nord in March 2008, it is not necessary to provide any additional potential equalisation on site for Pentair Jung Pumpen concrete and plastic pump chambers in Ex zones 1 or 2.

Exception: If conductive parts such as a corrugated tube cable protection or a metal pressure pipe lead to the pump chamber connection from outside. In these cases, an electrically conductive connection must be made with the housing of the pump(s). For reasons of corrosion protection, stainless steel should be used for this connection.

Rotational direction

Applies only for three-phase pumps. The rotational direction must be checked before installation! If the rotational direction is correct, the start-up jolt should be in the opposite direction to the rotational direction arrow on the motor housing. The wrong rotational direction is also indicated if the pump performs inadequately when installed, or if loud noises can be heard during operation. If the rotational direction is wrong, 2 phases of the supply cable must be swapped over.

⚠ CAUTION!

The start-up jolt can be very forceful.

Coil thermostats

NOTICE! In addition to the overload trip and/or the motor protection switch, the thermostats incorporated in the motor windings must be connected. The thermostats are suitable for 250 V / 1.2 A (cos phi = 0.6) and are labelled 30 and 32 for connection purposes.

The thermostats are to be connected in such a way that the motor is switched off via the control circuit when the response temperature is reached. It must not be possible for the motor to switch on again automatically after the winding has cooled down.

After an automatic cut-out via the temperature limiters, the cause of the malfunction must first be eliminated. Only then may the motor be switched on again manually.

The restart interlock must be "non-resetting on power failure", i.e. the lock must be in place to prevent restarting even after a power cut (in Europe: Directive 94/9/EC, Appendix II 1.5, EN 60079-17 Table1, B10).

Operation with frequency converter

Frequency converters may only be used for controlling the frequency of special models of three-phase pumps. Alternating current pumps are unsuitable as a rule.

NOTICE! For physical reasons, pumps may not be operated at a higher frequency than that shown on the type plate. If the frequency increases beyond the value on the type plate, the power input increases and the motor is then overloaded.

For special models of three-phase pumps that are designed for frequency converter operation, the motor type shown on the type plate is labelled with an additional "K" (e.g. D90-2/75 CK). These pumps also have a sticker on the end of the cable that indicates their suitability for use with a frequency converter.

These motors are fitted with PTC thermistors as winding protectors. Voltages > 2.5 volt must **not** be applied to terminals 40 and 41 of the winding protectors! For explosion protected pumps, a type-tested tripping unit that complies with the EC type-testing requirements is also necessary.

INSTALLATION

The pump must be installed as shown in the examples. For installations in accordance with DIN EN 12056-4, the pressure pipe must be laid in a loop above the local backflow level and protected with a backflow prevention valve.

The minimum flow rate of 0.7 m/s in the piping must be adhered to.

⚠ WARNING!

In accordance with the explosion protection laws and regulations, these pumps should never be allowed to run dry or to operate in "snore" mode.

The pump must switch off when the water level sinks to the upper edge of the pump housing, at the very latest (see drawings). This shut-down must be implemented via a separate switching circuit. Dry running for servicing or inspection purposes may only take place outside the potentially explosive area.

A correspondingly larger diameter pipe should be used for longer pressure pipelines to avoid pipe friction losses.

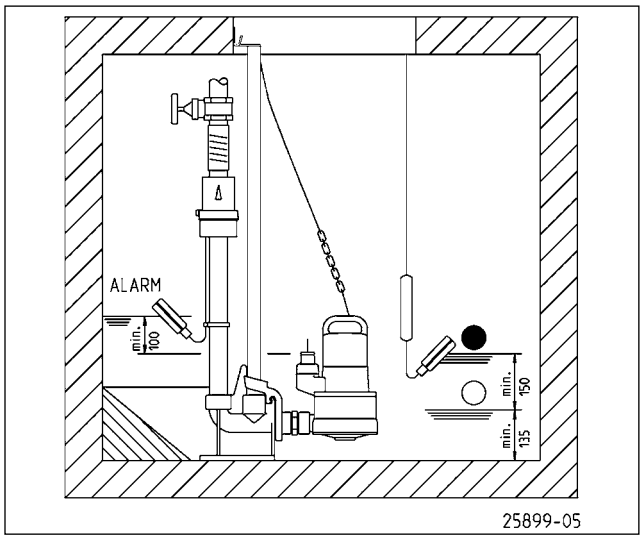
The pump housing can be permanently vented if necessary by drilling a 6 mm hole in the pressure pipe above the pressure outlet.

NOTICE! If the pump is faulty, part of the contents of the oil reservoir could escape into the pumped media.

Dimensions of chamber

Single unit with pump base: 40 x 40 cm
Single unit with guide rail: 40 x 60 cm
Duplex unit: 60 x 60 cm

Example of installation with guide rail

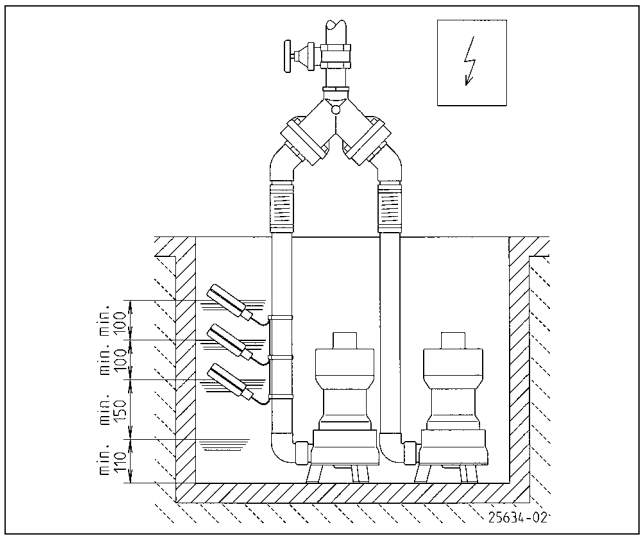


Installation: Fix the coupling base firmly to the floor of the collection chamber using wall plugs and then mount the guide rails. Next, install the pressure pipe including the necessary fittings, such as the non-return valve and shut-off valves.

Finally, fit the pump with the screwed-on coupling catch onto the guide rail and lower it into place using a chain fixed to the shackle.

A fixing facility for lifting gear should be provided above the chamber opening at a sufficient height.

Example of installation with pump base:



Installation: The submersible pump is fitted with a 90° connection and then lowered into the chamber or collecting pit using a chain.

Level monitoring can be carried out using various systems. Their specific characteristics and requirements can be found in the relevant operating manuals.

SERVICING

Maintenance and inspection of this product must be carried out in accordance with EN 12056-4 and EN 60074-19. To ensure continued reliability of service, we recommend that you take out a service contract.

⚠ WARNING!

Before carrying out any work: disconnect the pump and the control unit from the mains and take action to ensure that no one else can reconnect them to the power supply.

⚠ WARNING!

Check the plug and the mains cable for signs of mechanical and chemical damage. Damaged or kinked cables must be replaced..

NOTICE! When using a chain to lift the pump, please observe the relevant national regulations regarding accident prevention. Lifting gear must be checked regularly by an expert in accordance with the legal regulations.

Oil check

The oil reservoir is sealed on the outside with a brass screw. In order to check the mechanical seal, the oil, including any residue, must be drained from the oil reservoir and collected in a clean measuring container.

- If the oil is contaminated with water (milky), an oil change must be carried out. Check again after a further 300 operating hours, but at the very latest after 6 months!
- However, if the oil is contaminated with both water and pollutants, then not only the oil must be replaced, but the mechanical seal as well.

For monitoring the oil reservoir, it is also possible to retrofit the

electrode of our "DKG-Ex" seal leak control device in place of the brass screw on the oil reservoir.

Changing the oil

To ensure operational reliability, the first oil change should be carried out after 300 operating hours, with further oil changes carried out after every 1000 operating hours.

If the number of operating hours is very low, an oil change should still be carried out at least once a year.

If wastewater with strongly abrasive constituents is being pumped, the oil changes should be carried out at correspondingly shorter intervals.

Use HLP hydraulic mineral oil, viscosity class 22 to 46, e.g. Nuto from ESSO or DTE 22, DTE 24, or DTE 25 from Mobil, to replace the oil in the oil reservoir.

The filling quantity of oil required is 390 cm^3.

Notice! The oil reservoir must only be filled with the specified quantity of oil. Overfilling will result in the pump being rendered inoperable.

Cleaning

To clean the impeller in the event of an obstacle or blockage, the hexagon socket screws on the underside of the pump must be removed, any base feet fitted must be taken off and the cover must be lifted off the pump housing. The impeller can then be removed.

⚠ CAUTION!
Worn impellers can have sharp edges.

Tightening torque M_A for A2 screw materials for M 6 is M_A = 8 Nm

QUICK TIPS FOR REMEDYING FAULTS

Pump does not work

- Check mains current (do not use a pin gauge)
- Fuse faulty = may be too weak (please refer to the section entitled Electrical connection)
- Mains supply cable damaged = repair to be carried out by manufacturer only

Pump runs but does not pump

- Empty the pressure pipe or hose to allow the non-return valve to open and the air to escape from the pump housing.

Impeller jammed

- Solids and fibrous matter have become lodged in the pump housing = clean

Decreased pumping performance

- Pump housing obstructed = clean
- Impeller worn = replace
- Wrong direction of rotation for a three-phase current = ask a qualified electrician to change 2 phases of the supply line

TECHNISCHE DATEN • TECHNICAL DATA • CARACTÉRISTIQUES TECHNIQUES • TECHNISCHE GEGEVENS • DATI TECNICI

		US 73 E, Ex	US 73 D, Ex	US 103 E, Ex	US 103 D, Ex
	[kg]	19,0	19,0	21,5	21,5
	DN	1 ½ "	1 ½ "	1 ½ "	1 ½ "
	[mm]	30	30	30	30
S2 / S3*		20 min / 50 %	30 min / 65 %	18 min / 40 %.	30 min / 50%
Motor		E 71-2/50 W	E 71-2/50 D	E 71-2/80 C	E 71-2/80 B
		08 ATEX 1114 X	08 ATEX 1114 X	08 ATEX 1114 X	08 ATEX 1114 X
	II 2 G	Ex d IIB T4	Ex d IIB T4	Ex d IIB T4	Ex d IIB T4
P1	[kW]	0,83	0,85	1,37	1,36
P2	[kW]	0,50	0,60	0,98	1,06
U	[V]	1/N/PE ~230	3/PE ~400	1/N/PE ~230	3/PE ~400
f	[Hz]	50	50	50	50
I	[A]	3,9	1,4	6,0	2,4
cos phi		0,94	0,87	0,98	0,84
n	[min^{-1}]	2510	2800	2700	2740

* Beispiel: 20% = 2 min Betrieb + 8 min Pause (Zyklusdauer 10 min)
* Example for 40%: 4 min. operation and 6 min. rest (Cycle duration 10 min.)
* Exemple: 40% = 4 min de service et 6 min de pause (Durée du jeu 10 min)
* Eksempel: 40 %: 4 min drift + 6 min pause (spilletid 10 min)
* Esempio: 20% = 2 min funzionamento + 8 min pausa (durata del ciclo 10 min)

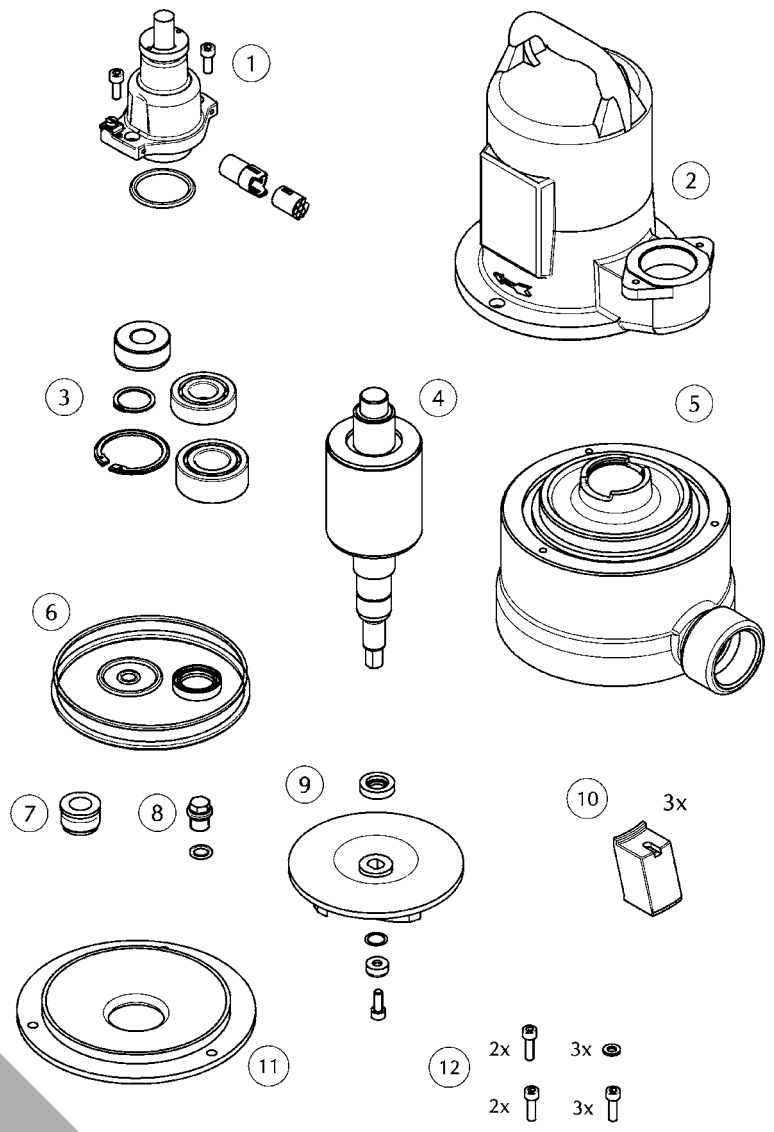
Leistungen • Performance • Puissances • Capaciteit • Prestazioni

H [m]	1	2	3	4	5	6	7	8	9	10	11	12
											Q [m^3 /h]	
US 73 E, Ex	19	17	15	12	10	8	6	4	2			
US 73 D, Ex	22	20	17	15	12	10	8	6	4			
US 103 E, Ex	28	26	23	21	19	17	15	12	10	8	5	2
US 103 D, Ex	28	26	23	21	19	17	15	12	10	8	5	2

PENTAIR JUNG PUMPEN

US 73 EX • US 103 EX

Ersatzteile - Spare parts - Pièces de rechange - Reserveonderdelen - Parti di ricambio - Reservedele - Reservdelar
Varaosat - Części zamienne - Náhradní díly - Alkatrészek - Piese de schimb - Запасные части - 备件



①	Leitung	Cable	
	US ... E, EX		**JP46225**
	US ... D, EX		**JP45469**
②	Stator + Gehäuse	Stator + Housing	
	US 73 D, EX		**JP47854**
	US 73 E, EX		**JP47855**
	US 103 D, EX		**JP47856**
	US 103 E, EX		**JP47857**
③	Lagersatz	Bearing set	**JP47862**
④	Rotorwelle	Rotor shaft	
	US 73 D, EX		**JP47858**
	US 73 E, EX		**JP47859**
	US 103 D, EX		**JP47860**
	US 103 E, EX		**JP47861**
⑤	Pumpengehäuse	Pump casing	**JP47864**
⑥	Dichtungssatz	Seal set	**JP46829**
⑦	Gleitringdichtung	Mechanical seal	**JP46043**
⑧	Ölschraube	Oil screw	**JP46046**
⑨	Laufrad	Impeller	
	US 73,EX		**JP46052**
	US 103, EX		**JP46053**
⑩	Füße	Pedestal	**JP46047**
⑪	Gehäusedeckel	Housing cover	**JP46050**
⑫	Schraubensatz	Screw set	**JP47863**
⑬	1l Öl	1l Oil	**JP48236**

PENTAIR JUNG PUMPEN

EU-Konformitätserklärung
EU-Prohlášeni o shodě
EU-Overensstemmelseserklæring
EU-Declaration of Conformity
EU-Vaatimustenmukaisuusvakuutus

EU-Déclaration de Conformité
EU-Megfelelöségi nyilatkozat
EU-Dichiarazione di conformità
EU-Conformiteitsverklaring
EU-Deklaracja zgodności

EU-Declarație de conformitate
EU-Vyhlásenie o zhode
EU-Försäkran om överensstämmelse

DE - Richtlinien - Harmonisierte Normen
CS - Směrnice - Harmonizované normy
DA - Direktiv - Harmoniseret standard
EN - Directives - Harmonised standards
FI - Direktiivi - Yhdenmukaistettu standardi
FR - Directives - Normes harmonisées
HU - Irányelve - Harmonizá szabványok
IT - Direttive - Norme armonizzate
NL - Richtlijnen - Geharmoniseerde normen
PL - Dyrektywy - Normy zharmonizowane
RO - Directivă - Norme coroborate
SK - Smernice - Harmonizované normy
SV - Direktiv - Harmoniserade normer

- **2006/42/EG** (MD) **EN 809:1998/AC:2010, EN ISO 12100:2010**
- **2011/65/EU** (RoHS)
- **2014/30/EU** (EMC) **EN 60034-1:2010, EN 61000-3-2:2014, EN 61000-3-3:2013**
- **2014/34/EU** (ATEX) **EN 60079-0:2012/A11:2013, EN 60079-1:2014**

JUNG PUMPEN GmbH - Industriestr. 4-6 - 33803 Steinhagen - Germany - www.jung-pumpen.de

DE - Wir erklären in alleiniger Verantwortung, dass das Produkt den aufgeführten Richtlinien entspricht.
CS - Prohlašujeme na svou výlučnou odpovědnost, že výrobek odpovídá jmenovaným směrnicím.
DA - Vi erklærer under ansvar at produktet i overensstemmelse med de retningslinjer
EN - We hereby declare, under our sole responsibility, that the product is in accordance with the specified Directives.
FI - Me vakuutamme omalla vastuullamme, että tuote täyttää ohjeita.
FR - Nous déclarons sous notre propre responsabilité que le produit répond aux directives.
HU - Kizárólagos felelősségünk tudatában kijelentjük, hogy ez a termék megfelel az Európai Unió fentnevezett irányelveinek.
IT - Noi dichiariamo sotto la nostra esclusiva responsabilità che il prodotto è conforme alle direttive citate
NL - Wij verklaren geheel onder eigen verantwoordelijkheid dat het product voldoet aan de gestelde richtlijnen.
PL - Z pełną odpowiedzialnością oświadczamy, że produkt odpowiada postanowieniom wymienionych dyrektyw.
RO - Declarăm pe proprie răspundere că produsul corespunde normelor prevăzute de directivele mai sus menţionate.
SK - Na výlučnú zodpovednosť vyhlasujeme, že výrobok spĺňa požiadavky uvedených smerníc.
SV - Vi försäkrar att produkten på vårt ansvar är utförd enligt gällande riktlinjer.

US 73 E, EX (JP09292)
US 103 E, EX (JP09294)
US 73 D, EX (JP00595/2)
US 103 D, EX (JP09293)

DE - Weitere normative Dokumente CS - Jinými normativními dokumenty DA - Andre normative dokumenter EN - Other normative documents FI - Muiden normien FR - Autres documents normatifs HU - Egyéb szabályozó dokumentumokban leírtaknak IT - Altri documenti normativi NL - Verdere normatieve documenten PL - Innymi dokumentami normatywnymi RO - Alte acte normative SK - Iným záväzným dokumentom SV - Vidare normerande dokument:
EN 60034-5:2001/A1:2007

Ex II 2 G Ex d IIB T4Gb PTB 11 ATEX 1014 X

Physikalisch-Technische Bundesanstalt
Zertifizierungssektor Explosionsschutz (0102)
Bundesallee 100 - 38116 Braunschweig - Germany

DE - Bevollmächtigter für technische Dokumentation CS - Oprávněná osoba pro technickou dokumentaci DA - Autoriseret person for teknisk dokumentation EN - Authorized person for technical documentation FI - Valtuutettu henkilö tekninen dokumentaatio FR - Personne autorisée à la documentation technique HU - Hivatalos személy műszaki dokumentáció IT - Persona abilitata per la documentazione tecnica NL - Bevoegd persoon voor technische documentatie PL - Pełnomocnik ds. dokumentacji technicznej RO - Persoană autorizată pentru documentatiei tehnice SK - Oprávnená osoba pre technickú dokumentáciu SV - Auktoriserad person för teknisk dokumentation:

JUNG PUMPEN - Stefan Sirges - Industriestr. 4-6 - 33803 Steinhagen

Steinhagen, 10-09-2018

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Stefan Sirges, General Manager

i.V. _____
Rüdiger Rokohl, Sales Manager

CE 305-15-1809

CE 0197

JUNG PUMPEN GmbH - Industriestr. 4-6 33803 Steinhagen, Germany

13

403.11.1504

EN 12050-2:2001
Abwasserhebeanlage für fäkalienfreies Abwasser DN 40

US 73 E, EX (JP09292)

US 103 E, EX (JP09294)

US 73 D, EX (JP00595/2)

US 103 D, EX (JP09293)

Sammeln und automatisches Heben von fäkalienfreiem Abwasser innnerhalb und außerhalb von Gebäuden über die Rückstauebene

BRANDVERHALTEN	NPD
WASSERDICHTHEIT	Bestanden
WIRKSAMKEIT (HEBEWIRKUNG)	
- Förderung von Feststoffen	Bestanden
- Rohranschlüsse	Bestanden
- Mindestmaße von Lüftungsleitungen	NPD
- Mindestfließgeschwindigkeit	Bestanden
- Freier Mindestdurchgang der Anlage	Bestanden
- Mindestnutzvolumen	NPD
MECHANISCHE FESTIGKEIT	
- Tragfähigkeit und strukturelle Stabilität des Sammelbehälters für die Verwendung außerhalb von Gebäuden	NPD
- Strukturelle Stabilität des Sammelbehälters für die Verwendung innerhalb von Gebäuden	NPD
GERÄUSCHPEGEL	≤ 70 dB(A)
DAUERHAFTIGKEIT	
- der Wasserdichtheit und Luftdichtheit	NPD
- der Hebewirkung	Bestanden
- der mechanischen Festigkeit	NPD
GEFÄHRLICHE SUBSTANZEN	NPD

CE 0197

JUNG PUMPEN GmbH - Industriestr. 4-6 33803 Steinhagen, Germany

13

403.11.1504

EN 12050-2:2001
Lifting plant for faecal-free wastewater DN 40

US 73 E, EX (JP09292)

US 103 E, EX (JP09294)

US 73 D, EX (JP00595/2)

US 103 D, EX (JP09293)

Collecting and automatically lifting faecal-free waste water above the backflow level in buildings and sites

REACTION TO FIRE	NPD
WATERTIGHTNESS	Pass
EFFECTIVENESS (LIFTING EFFECTIVENESS)	
- Pumping of solids	Pass
- Pipe connections	Pass
- Minimum dimensions of ventilating pipes system	NPD
- Minimum flow velocity	Pass
- Minimum free passage of the plant	Pass
- Minimum useful volume	NPD
MECHANICAL RESISTANCE	
- Load bearing capacity and structural stability of collection tank for use outside buildings	NPD
- Structural stability of collection tank for use inside buildings	NPD
NOISE LEVEL	≤ 70 dB(A)
DURABILITY	
- of structural stability	NPD
- of lifting effectiveness	Pass
- of mechanical resistance	NPD
DANGEROUS SUBSTANCES	NPD

(1) # EG-Baumusterprüfbescheinigung

(2) Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 94/9/EG**

(3) EG-Baumusterprüfbescheinigungsnummer

PTB 08 ATEX 1114 X

(4) Gerät: Tauchpumpenmotoren Typ . 71-./....

(5) Hersteller: Jung Pumpen GmbH

(6) Anschrift: Industriestraße 4 - 6, 33803 Steinhagen, Deutschland

(7) Die Bauart dieses Gerätes sowie die verschiedenen zulässigen Ausführungen sind in der Anlage und den darin aufgeführten Unterlagen zu dieser Baumusterprüfbescheinigung festgelegt.

(8) Die Physikalisch-Technische Bundesanstalt bescheinigt als benannte Stelle Nr. 0102 nach Artikel 9 der Richtlinie des Rates der Europäischen Gemeinschaften vom 23. März 1994 (94/9/EG) die Erfüllung der grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Geräten und Schutzsystemen zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie.

Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht PTB Ex 08-18364 festgehalten.

(9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit

EN 60079-0:2006 **EN 60079-1:2007**

(10) Falls das Zeichen „X" hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Gerätes in der Anlage zu dieser Bescheinigung hingewiesen.

(11) Diese EG-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Prüfung des festgelegten Gerätes gemäß Richtlinie 94/9/EG. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Inverkehrbringen dieses Gerätes. Diese Anforderungen werden nicht durch diese Bescheinigung abgedeckt.

(12) Die Kennzeichnung des Gerätes muss die folgenden Angaben enthalten:

II 2 G Ex d IIB T4

Zertifizierungssektor Explosionsschutz
Im Auftrag

Braunschweig, 2. Februar 2009

Dr.-Ing. M. Thedens
Oberregierungsrat

ZSEx10100d.dot

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(13) # Anlage

(14) **EG-Baumusterprüfbescheinigung PTB 08 ATEX 1114 X**

(15) Beschreibung des Gerätes

Bei dem Gerät handelt es sich um eine drehende elektrische Maschine zum Antrieb von Pumpen. Der Motorteil ist in der Zündschutzart Druckfeste Kapselung "d" ausgeführt. Die Stromzufuhr erfolgt über schwere Gummischlauchleitung NSSHöu oder ein mindest gleichwertiges, geprüftes Kabel.

(16) Prüfbericht PTB Ex 08-18364

(17) Besondere Bedingungen

Eine Reparatur an den zünddurchschlagsicheren Spalten darf nur entsprechend den konstruktiven Vorgaben des Herstellers erfolgen. Die Reparatur entsprechend den Werten der Tabelle 1 bzw. 2 der EN 60079-1 ist nicht zulässig.

Zusätzliche Hinweise für den sicheren Betrieb:

Für den Ein- und Anbau von Komponenten (Anschlussräume, Durchführungen, Ex-Kabel- und Leitungseinführungen, Anschlussteile) sind nur solche zugelassen, die mindestens dem auf dem Deckblatt angegebenen Normenstand technisch entsprechen und für die eine gesonderte Prüfbescheinigung vorliegt. Die in den entsprechenden Bescheinigungen der Komponenten aufgeführten Einsatzbedingungen sind dabei unbedingt zu beachten und müssen mindestens den in der vorstehenden EG-Baumusterprüfbescheinigung spezifizierten Einsatzbedingungen entsprechen.

Für den Abschluss des druckfesten Raumes sind mindestens Schrauben der Festigkeitsklasse A2-70 zu verwenden.

1. Für den Betrieb am Netz

Die Motoren dieses Typs müssen zusätzlich zu thermisch verzögerten Überstromauslösern durch 2 Temperaturbegrenzer (150 °C) geschützt werden.

2. Für den Betrieb am Umrichter

2.1 Die Motoren müssen durch eine Einrichtung zur direkten Temperaturüberwachung geschützt werden. Diese besteht aus

in die Wicklung eingebauten Temperaturfühlern
(Kaltleiter DIN 44 082-150) und einem Auslösegerät
mit dem Prüfzeichen PTB 3.53 – PTC/A bzw. nach
Richtlinie 94/9/EG auf Funktion geprüft.

EG-Baumusterprüfbescheinigungen ohne Unterschrift und ohne Siegel haben keine Gültigkeit.
Diese EG-Baumusterprüfbescheinigung darf nur unverändert weiterverbreitet werden.
Auszüge oder Änderungen bedürfen der Genehmigung der Physikalisch-Technischen Bundesanstalt.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig • DEUTSCHLAND

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

Anlage zur EG-Baumusterprüfbescheinigung PTB 08 ATEX 1114 X

Die Zusammengehörigkeit von Motor und Überwachungseinrichtung wird auf dem Motor durch ein Zusatzschild gekennzeichnet.

Überstromschutzeinrichtungen mit stromabhängig verzögerter Auslösung sind hierbei als zusätzliche Überwachung anzusehen.

2.2 Die Motoren werden im Frequenzbereich von 15 Hz bis 50/60 Hz betrieben. Die Ausgangsspannung des Umrichters wird dabei so geregelt, dass im Bereich von 15 Hz bis 50/60 Hz eine annähernd lineare Abhängigkeit zwischen der Spannung und der Frequenz eingehalten wird, d.h. Einhaltung eines praktisch konstanten Maschinenflusses entsprechend den Bemessungsdaten.

Die Strombegrenzung des Umrichters wird höchstens auf den 3fachen Motorstrom eingestellt.

Zusatz- und Überwachungseinrichtungen mit eigener Bescheinigung und Explosionsschutzkennzeichnung sind den am Einsatzort vorliegenden Bedingungen entsprechend auszuwählen.

Überwachungseinrichtungen müssen den Anforderungen nach Richtlinie 94/9/EG, Anhang II, Abschnitt 1.5 und EN 1127-1 genügen.

Weitere einschränkende Hinweise für den sicheren Betrieb sind dem jeweiligen Datenblatt für die Maschinenauslegung zu entnehmen.

Elektrisch-thermische Motorauslegung

Die Datenblätter 01 bis 04 der EG-Baumusterprüfbescheinigung PTB 00 ATEX 1054 sind gleichzeitig Bestandteil der vorstehenden EG-Baumusterprüfbescheinigung.

Zusätzlich sind zur Vermeidung unzulässig hoher Temperaturen am Motorteil folgende Bedingungen zu beachten:

Bei der Betriebsart S1 muss sichergestellt werden, dass der komplette Motor in das Fördermedium eingetaucht ist. Bei den Betriebsarten S2 und S3 wie in den jeweiligen Datenblättern spezifiziert muss mindestens das Pumpengehäuse komplett in das Fördermedium eingetaucht sein. Die Einhaltung der Betriebsart S2 bzw. S3 ist durch die elektrische Steuerung zu gewährleisten. Bei Nichteinhaltung einer dieser Bedingungen für die entsprechende Betriebsart, muss der Motor unverzüglich ausgeschaltet werden.

(18) Grundlegende Sicherheits- und Gesundheitsanforderungen

Erfüllt durch Übereinstimmung mit den vorgenannten Normen.

Zertifizierungssektor Explosionsschutz
Im Auftrag

Dr.-Ing. M. Thedens
Oberregierungsrat

Braunschweig, 2. Februar 2009

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

Datenblatt 02 zur EG-Baumusterprüfbescheinigung PTB 00 ATEX 1054

Firma Jung Pumpen GmbH & Co
Motortyp Typ E 71 - 2 / 50 W bzw. E 71 - 2 / 50 WK

Bemessungsgrößen und Daten

Diese Bescheinigung gilt unter der Voraussetzung, daß sich die Motoren dieses Typs hinsichtlich der elektrischen und thermischen Beanspruchungen nur unwesentlich von dem geprüften Muster unterscheiden, für die folgenden Ausführungen:

Leistung (Aufnahme):	0,96	kW
Spannung:	218...242	V
Strom:	4,2	A
Leistungsfaktor:	0,93...0,96	
Kondensator:	8 ± 10 %	µ F
Frequenz:	50	Hz
Drehzahl:	2159	min^{-1}
Umgebungstemperatur:	max. 40	°C
Betriebsart:	S1 bei eingetauchtem Motorteil S2 (8,5 min.) S3 (20 %) [1]	

[1] Spieldauer 10 min.

Die Bescheinigung gilt auch für Motoren mit einer geringeren Leistung. Aber maximal bis zu 0,96 kW. Die entsprechenden Daten sind vom Hersteller auf dem Leistungsschild anzugeben.

Gegenüber den Bemessungswerten darf die Netzspannung bis zu ± 5 % und die Netzfrequenz bis zu ± 2 % entsprechend dem Bereich A nach IEC 34-1 schwanken.

Bei Motoren mit Kaltleiterschutz muß sichergestellt sein, daß bei festgebremstem Läufer und einem Verhältnis I_A/I_N = 1,2 die Auslösezeit t_A = 248 s mit einer Toleranz von ± 20 % eingehalten wird. Dabei ist vom kalten Motor (20°C) und einer Netzspannung 230 V bei 50 Hz auszugehen.

Im Auftrag

Dr.-Ing. Klausmeyer
Regierungsdirektor

Braunschweig, 16. August 2000

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

Datenblatt 01 zur EG-Baumusterprüfbescheinigung PTB 00 ATEX 1054

Firma Jung Pumpen GmbH & Co
Motortyp Typ E 71 - 2 / 80 C bzw. E 71 - 2 / 80 CK

Bemessungsgrößen und Daten

Diese Bescheinigung gilt unter der Voraussetzung, daß sich die Motoren dieses Typs hinsichtlich der elektrischen und thermischen Beanspruchungen nur unwesentlich von dem geprüften Muster unterscheiden, für die folgenden Ausführungen:

Leistung (Aufnahme):	1,7	kW
Spannung:	218...242	V
Strom:	7,1	A
Leistungsfaktor:	0,96...0,99	
Kondensator:	20 ± 10 %	µ F
Frequenz:	50	Hz
Drehzahl:	2483	min^{-1}
Umgebungstemperatur:	max. 40	°C
Betriebsart:	S1 bei eingetauchtem Motorteil S2 (7 min.) S3 (15 %) [1]	

[1] Spieldauer 10 min.

Die Bescheinigung gilt auch für Motoren mit einer geringeren Leistung. Aber maximal bis zu 1,7 kW. Die entsprechenden Daten sind vom Hersteller auf dem Leistungsschild anzugeben.

Gegenüber den Bemessungswerten darf die Netzspannung bis zu ± 5 % und die Netzfrequenz bis zu ± 2 % entsprechend dem Bereich A nach IEC 34-1 schwanken.

Bei Motoren mit Kaltleiterschutz muß sichergestellt sein, daß bei festgebremstem Läufer und einem Verhältnis I_A/I_N = 1,6 die Auslösezeit t_A = 80 s mit einer Toleranz von ± 20 % eingehalten wird. Dabei ist vom kalten Motor (20°C) und einer Netzspannung 230 V bei 50 Hz auszugehen.

Im Auftrag

Dr.-Ing. Klausmeyer
Regierungsdirektor

Braunschweig, 16. August 2000

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

Datenblatt 03 zur EG-Baumusterprüfbescheinigung PTB 00 ATEX 1054

Firma Jung Pumpen GmbH & Co
Motortyp Typ D 71 - 2 / 50 D bzw. D 71 - 2 / 50 DK

Bemessungsgrößen und Daten

Diese Bescheinigung gilt unter der Voraussetzung, daß sich die Motoren dieses Typs hinsichtlich der elektrischen und thermischen Beanspruchungen nur unwesentlich von dem geprüften Muster unterscheiden, für die folgenden Ausführungen:

Leistung (Aufnahme):		1,07		kW
Spannung:	218...242	380 ... 420	655 ... 725	V
Strom:	2,9	1,6	1,0	A
Leistungsfaktor:		0,9		
Frequenz:		50 bzw. 60		Hz
Drehzahl:		2587 bzw. 3187		min^{-1}
Umgebungstemperatur:		max. 40		°C
Betriebsart:		S1 bei eingetauchtem Motorteil S2 (10 min.) S3 (30 %) [1]		

[1] Spieldauer 10 min.

Die Bescheinigung gilt auch für Motoren mit einer geringeren Leistung. Aber maximal bis zu 1,07 kW, auch wenn die Motoren mit 60 Hz betrieben werden. Die entsprechenden Daten sind vom Hersteller auf dem Leistungsschild anzugeben.

Neben den oben angegebenen Spannungen sind auch dazwischenliegende Werte zulässig. Die zugehörigen Ströme sind im reziproken Verhältnis der Spannungen umzurechnen. Gegenüber den Bemessungswerten darf die Netzspannung bis zu ± 5 % und die Netzfrequenz bis zu ± 2 % entsprechend dem Bereich A nach IEC 34-1 schwanken.

Bei Motoren mit Kaltleiterschutz muß sichergestellt sein, daß bei festgebremstem Läufer und einem Verhältnis I_A/I_N = 3,5 die Auslösezeit t_A = 46,5 s mit einer Toleranz von ± 20 % eingehalten wird. Dabei ist vom kalten Motor (20°C) und einer Netzspannung 400 V bei 50 Hz auszugehen.

Im Auftrag

Dr.-Ing. Klausmeyer
Regierungsdirektor

Braunschweig, 16. August 2000

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

Datenblatt 04 zur EG-Baumusterprüfbescheinigung PTB 00 ATEX 1054

Firma Jung Pumpen GmbH & Co
Motortyp Typ D 71 - 2 / 80 B bzw. D 71 - 2 / 80 BK

Bemessungsgrößen und Daten

Diese Bescheinigung gilt unter der Voraussetzung, daß sich die Motoren dieses Typs hinsichtlich der elektrischen und thermischen Beanspruchungen nur unwesentlich von dem geprüften Muster unterscheiden, für die folgenden Ausführungen:

Leistung (Aufnahme):		1,9		kW
Spannung:	218...242	380 ... 420	655 ... 725	V
Strom:	6,4	3,7	2,1	A
Leistungsfaktor:		0,88		
Frequenz:		50 bzw. 60		Hz
Drehzahl:		2447 bzw. 3047		min^{-1}
Umgebungstemperatur:		max. 40		°C
Betriebsart:		S1 bei eingetauchtem Motorteil S2 (7 min.) S3 (15 %) [1]		

[1] Spieldauer 10 min.

Die Bescheinigung gilt auch für Motoren mit einer geringeren Leistung. Aber maximal bis zu 1,9 kW, auch wenn die Motoren mit 60 Hz betrieben werden. Die entsprechenden Daten sind vom Hersteller auf dem Leistungsschild anzugeben.

Neben den oben angegebenen Spannungen sind auch dazwischenliegende Werte zulässig. Die zugehörigen Ströme sind im reziproken Verhältnis der Spannungen umzurechnen. Gegenüber den Bemessungswerten darf die Netzspannung bis zu ± 5 % und die Netzfrequenz bis zu ± 2 % entsprechend dem Bereich A nach IEC 34-1 schwanken.

Bei Motoren mit Kaltleiterschutz muß sichergestellt sein, daß bei festgebremstem Läufer und einem Verhältnis I_A/I_N = 2,7 die Auslösezeit t_A = 49,3 s mit einer Toleranz von ± 20 % eingehalten wird. Dabei ist vom kalten Motor (20°C) und einer Netzspannung 400 V bei 50 Hz auszugehen.

Im Auftrag

Braunschweig, 16. August 2000

Dr.-Ing. Klausmeyer
Regierungsdirektor

Blatt 1/1

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(1) EC-TYPE-EXAMINATION CERTIFICATE

(Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 08 ATEX 1114 X

(4) Equipment: Submersible pump motors, type . 71-./....

(5) Manufacturer: Jung Pumpen GmbH

(6) Address: Industriestraße 4 - 6, 33803 Steinhagen, Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 08-18364.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2006 **EN 60079-1:2007**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

Ex II 2 G Ex d IIB T4

Zertifizierungssektor Explosionsschutz
By order:

Braunschweig, February 2, 2009

Dr.-Ing. M. Thedens
Oberregierungsrat

ZSEx10100e.dot

sheet 1/3

(13) # SCHEDULE

(14) ## EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 1114 X

(15) Description of equipment

The device is a rotary electric machine used for driving pumps. The motor section is designed to Flameproof Enclosure "d" type of protection. For power supply, heavy-duty NSSHöu rubber hose lines are used or tested cables of equivalent or better quality.

(16) Test Report PTB Ex 08-18364

(17) Special conditions for safe use

Repairs of the flameproof joints must be made in compliance with the structural specifications provided by the manufacturer. Repairs must not be made on the basis of values specified in tables 1 and 2 of EN 60079-1.

Additional notes for safe operation

Components attached or installed (terminal compartments, bushings, 'Ex' cable glands, connectors) must be of a technical standard that at least complies with the specifications on the cover sheet and for which a separate examination certificate has been issued. The operating conditions specified in component certificates must be followed and they must as a minimum conform with the operating conditions specified in the above EC Type Examination Certificate.

Screws complying with strength class A2-70 as a minimum must be used for enclosure of the flameproof chamber.

1. For mains operation

   Motors of this type must be protected by two temperature limiters (150 °C) in addition to thermally delayed overcurrent releases.

2. For converter operation

2.1 The motors must be protected by a device providing for direct temperature monitoring. This device will comprise:

> temperature sensors embedded in the winding
> (PTC resistor DIN 44 082-150) and a tripping device
> with test mark PTB 3.53 – PTC/A or function tested
> in accordance with Directive 94/9/EC.

The concerted operation of motor and monitoring device will be indicated by a plate additionally provided on the motor.

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 1114 X

Overcurrent protection devices with current-based delayed tripping must in this context be regarded as additional monitoring devices.

2.2 The motors will be operated within the 15-Hz to 50/60-Hz frequency range. The converter output voltage will be controlled so that within the 15-Hz to 50/60-Hz range an approximately linear relationship between voltage and frequency will be maintained, i.e. that a basically constant machine flow in compliance with the ratings will be maintained.

The converter current limitation will be set at three times the motor current as a maximum.

Supplementary and monitoring devices with their own certificate and explosion protection marking have to be selected so that they comply with the conditions at the place of installation.

Monitoring devices must satisfy the requirements in Directives 94/9/EC, Annex II, section 1.5, and EN 1127-1.

For any additional notes concerning restrictions for safe use, reference is made to the data sheet for the machine design.

Electro-thermal motor design

Data sheets 01 to 04 of EC Type Examination Certificate PTB 00 ATEX 1054 also form part of the above EC Type Examination Certificate.

Additionally, to avoid inadmissibly high temperatures on the motor the following conditions are to be considered:

For duty type S1 it must be ensured that the complete motor is immersed into the pumping medium. For the duty types S2 and S3 as specified in the appropriate data sheets at least the pump housing must be complete immersed into the pumping medium. The adherence to the duty type S2 resp. S3 is to be ensured by the electrical control. When one of these conditions for the respective duty type cannot be maintained, the motor must be switched off immediately.

(18) Essential health and safety requirements

Met by compliance with the standards mentioned above.

Zertifizierungssektor Explosionsschutz
By order:

Dr.-Ing. M. Thedens
Oberregierungsrat

Braunschweig, February 2, 2009

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig • GERMANY

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

DATA SHEET 02 TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1054

Manufacturer Jung Pumpen GmbH & Co
Motor types E 71 - 2 / 50 W and E 71 - 2 / 50 WK

Ratings

This certificate is valid for the following designs, provided the motors of this type differ only negligibly from the sample tested as regards the electrical and thermal stresses:

Power on the output shaft:	0.96	kW
Voltage:	218...242	V
Current:	4.2	A
Power factor:	0.93...0.96	
Capacitor	8 ± 10 %	µF
Frequency:	50	Hz
Speed: (motor)	2159	rpm
Ambient temperature	max. 40	°C
Duty Type:	S1 with immersed motor section S2 (8.5 min.) S3 (20 %) [1]	

[1] cycle time 10 min.

The certificate shall also apply to motors with a lower output, but up to 0.96 kW as a maximum. The actual rating shall be specified by the producer on the rating plate.

According to section A of IEC 34-1, the mains voltage may vary from the rating by up to ± 5 %, the mains frequency by up to ± 2 %.

Motors with PTC thermistor must safeguard that with a locked rotor and a ratio of I_A/I_N = 1.2, the release time t_A = 248 s will be maintained at a tolerance of ± 20 %. This applies for a cold motor (20 °C) and a mains voltage of 230 V at 50 Hz.

By order

Dr.-Ing. Klausmeyer
Regierungsdirektor

Braunschweig, August 16, 2000

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

DATA SHEET 01 TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1054

Manufacturer: Jung Pumpen GmbH & Co
Motor types E 71 - 2 / 80 C and E 71 - 2 / 80 CK

Ratings

This certificate is valid for the following designs, provided the motors of this type differ only negligibly from the sample tested as regards the electrical and thermal stresses:

Power on the output shaft:	1.7	kW
Voltage:	218...242	V
Current:	7.1	A
Power factor:	0.96...0.99	
Capacitor	20 ± 10 %	µ F
Frequency:	50	Hz
Speed: (motor)	2483	rpm
Ambient temperature	max. 40	°C
Duty Type:	S1 with immersed motor section S2 (7 min.) S3 (15 %) [1]	

[1] cycle time 10 min.

The certificate shall also apply to motors with a lower output, but up to 1.7 kW as a maximum. The actual rating shall be specified by the producer on the rating plate.

According to section A of IEC 34-1, the mains voltage may vary from the rating by up to ± 5 %, the mains frequency by up to ± 2 %.

Motors with PTC thermistor must safeguard that with a locked rotor and a ratio of I_A/I_N = 1.6, the release time t_A = 80 s will be maintained at a tolerance of ± 20 %. This applies for a cold motor (20 °C) and a mains voltage of 230 V at 50 Hz.

By order

Dr.-Ing. Klausmeyer
Regierungsdirektor

Braunschweig, August 16, 2000

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

DATA SHEET 03 TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1054

Manufacturer Jung Pumpen GmbH & Co
Motor types D 71 - 2 / 50 D and D 71 - 2 / 50 DK

Ratings

This certificate is valid for the following designs, provided the motors of this type differ only negligibly from the sample tested as regards the electrical and thermal stresses:

Power on the output shaft:		1.07		kW
Voltage:	218...242	380 ... 420	655 ... 725	V
Current:	2.9	1.6	1.0	A
Power factor:		0.9		
Frequency:		50 and 60		Hz
Speed: (motor)		2587 and 3187		rpm
Ambient temperature		max. 40		°C
Duty Type:		S1 with immersed motor section S2 (10 min.) S3 (30 %) [1]		

[1] cycle time 10 min.

The certificate shall also apply to motors with a lower output, but up to 1.07 kW as a maximum, even if the motors are operated at 60 Hz. The actual rating shall be specified by the producer on the rating plate.

Voltages between the values specified above are also acceptable. The relevant current rating shall be calculated with a ratio which is the reciprocal of the voltage rating. According to section A of IEC 34-1, the mains voltage may vary from the rating by up to ± 5 %, the mains frequency by up to ± 2 %.

Motors with PTC thermistor must safeguard that with a locked rotor and a ratio of I_A/I_N = 3.5, the release time t_A = 46.5 s will be maintained at a tolerance of ± 20 %. This applies for a cold motor (20 °C) and a mains voltage of 400 V at 50 Hz.

By order

Dr.-Ing. Klausmeyer
Regierungsdirektor

Braunschweig, August 16, 2000

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

DATA SHEET 04 TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1054

Manufacturer Jung Pumpen GmbH & Co
Motor types D 71 - 2 / 80 B and D 71 - 2 / 80 BK

Ratings

This certificate is valid for the following designs, provided the motors of this type differ only negligibly from the sample tested as regards the electrical and thermal stresses:

Power on the output shaft:		1.9		kW
Voltage:	218...242	380 ... 420	655 ... 725	V
Current:	6.4	3.7	2.1	A
Power factor:		0.88		
Frequency:		50 and 60		Hz
Speed: (motor)		2447 and 3047		rpm
Ambient temperature		max. 40		°C
Duty Type:		S1 with immersed motor section S2 (7 min.) S3 (15 %) [1]		

[1] cycle time 10 min.

The certificate shall also apply to motors with a lower output, but up to 1.9 kW as a maximum, even if the motors are operated at 60 Hz. The actual rating shall be specified by the producer on the rating plate.

Voltages between the values specified above are also acceptable. The relevant current ratings shall be calculated with a ratio which is the reciprocal of the voltage rating. According to section A of IEC 34-1, the mains voltage may vary from the rating by up to ± 5 %, the mains frequency by up to ± 2 %.

Motors with PTC thermistor must safeguard that with a locked rotor and a ratio of I_A/I_N = 2.7, the release time t_A = 49.3 s will be maintained at a tolerance of ± 20 %. This applies for a cold motor (20 °C) and a mains voltage of 400 V at 50 Hz.

By order

Dr.-Ing. Klausmeyer
Regierungsdirektor

Braunschweig, August 16, 2000

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