

Wilo-Drain TS/TSW

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|--|---|
| D Einbau- und Betriebsanleitung | S Monterings- och skötselanvisning |
| GB Installation and operating instructions | FIN Asennus- ja käyttöohje |
| F Notice de montage et de mise en service | DK Monterings- og driftsvejledning |
| NL Inbouw- en bedieningsvoorschriften | H Beépítési és üzemeltetési utasítás |
| E Instrucciones de instalación y funcionamiento | PL Instrukcja montażu i obsługi |
| I Istruzioni di montaggio, uso e manutenzione | CZ Návod k montáži a obsluze |
| P Manual de Instalação e funcionamento | RUS Инструкция по монтажу и эксплуатации |
| TR Montaj ve kullanma kılavuzu | LT Montavimo ir naudojimo instrukcija |
| GR Οδηγίες εγκατάστασης και λειτουργίας | |

Fig.1:

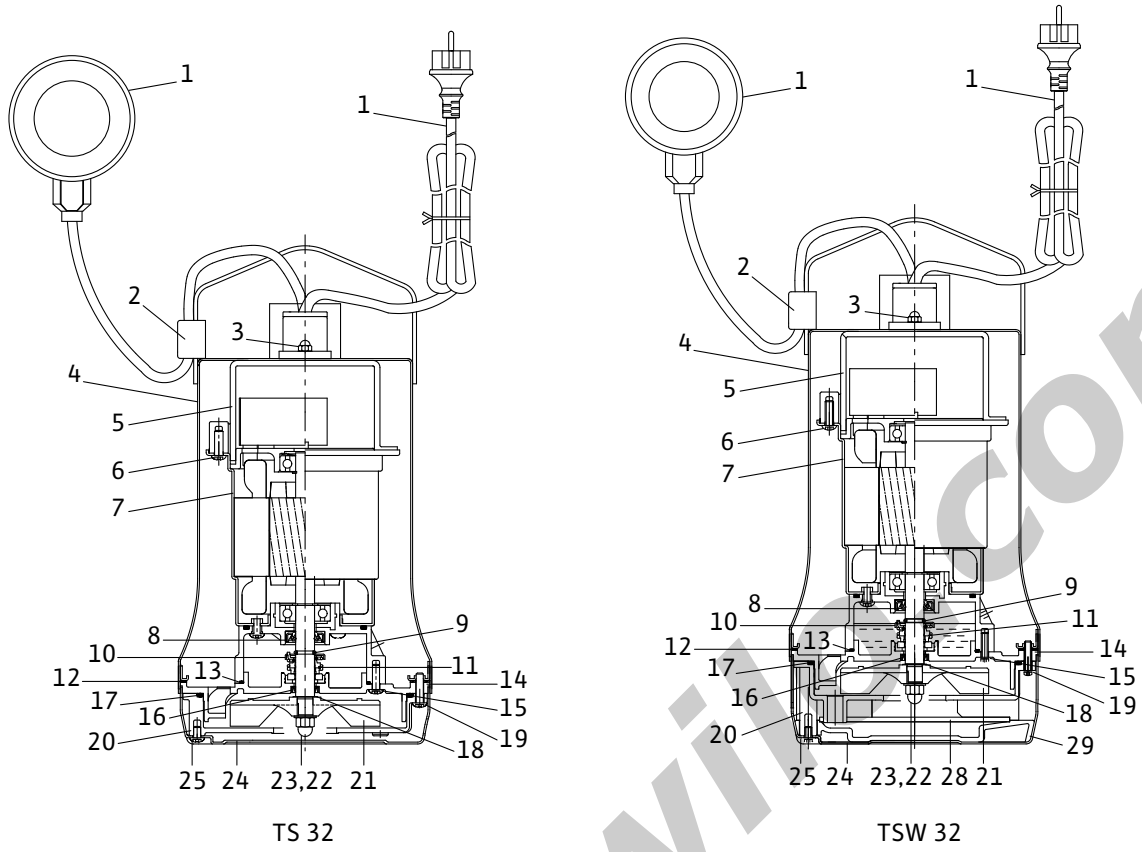
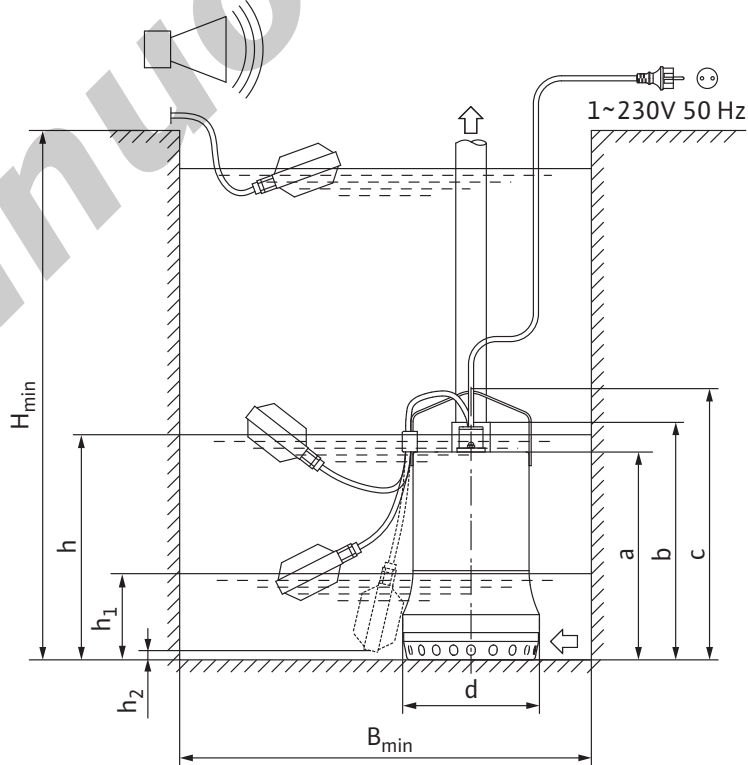


Fig.2:



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1 General

About this document

These installation and operating instructions are an integral part of the product. They must be kept readily available at the place where the product is installed. Strict adherence to these instructions is a precondition for the proper use and correct operation of the product.

These installation and operating instructions correspond to the relevant version of the product and the underlying safety standards valid at the time of going to print.

2 Safety

These operating instructions contain basic information which must be adhered to during installation and operation. For this reason, these operating instructions must, without fail, be read by the service technician and the responsible operator before installation and commissioning. It is not only the general safety instructions listed under the main point "safety" that must be adhered to but also the special safety instructions with danger symbols included under the following main points.

2.1 Indication of instructions in the operating instructions

Symbols:

General danger symbol



Danger due to electrical voltage



USEFUL INFORMATION



Signal words:

DANGER!

Acutely dangerous situation

Non-observance results in death or the most serious of injuries.

WARNING!

The user can suffer (serious) injuries. 'Warning' implies that (serious) injury to persons is probable if this information is disregarded.

CAUTION!

There is a risk of damaging to the pump/installation. 'Caution' implies that damage to the product is likely if the information is disregarded.

NOTE: Useful information on using the product. It draws attention to possible problems.

2.2 Personnel qualifications

The installation personnel must have the appropriate qualifications for this work.

2.3 Danger in the event of non-observance of the safety instructions

Non-observance of the safety instructions can result in risk of injury to persons and damage to pump/installation. Non-observance of the safety instructions can result in the loss of any claims for damages.

In detail, non-observance can, for example, result in the following risks:

- Failure of important functions of the pump/installation,
- Failure of specified maintenance and repair procedures,
- Risks to persons through electrical, mechanical and bacteriological effects,
- Property damage.

2.4 Safety instructions for the operator

The existing directives for accident prevention must be adhered to. Danger from electrical current must be eliminated. Local directives or general directives [e.g. IEC, VDE etc.] and local power supply companies must be adhered to.

Risks through mechanical or bacteriological effects must be prevented. Local conditions and guidelines relating to sewage technology must be adhered to.

2.5 Safety instructions for inspection and installation work

The operator must ensure that all inspection and installation work is carried out by authorised and qualified personnel, who are sufficiently informed from their own detailed study of the operating instructions.

Work to the pump/installation must only be carried out when at a standstill.

2.6 Unauthorised modification and manufacture of spare parts

Modifications to the pump/installation are only permissible after consultation with the manufacturer. Original spare parts and accessories authorised by the manufacturer ensure safety. The use of other parts can nullify the liability from the results of their usage.

2.7 Improper use

The operational safety of the supplied pump/unit is only guaranteed for conventional use in accordance with section 4 of the installation and operating instructions. The limit values must on no account fall under or exceed those specified in the catalogue/data sheet.

3 Transport and interim storage

As soon as the product arrives:

- Check the product for damage in transit,
- In the case of transport damage, initiate the necessary procedures with the forwarding agent within the time stipulated.



CAUTION! Danger of property damage!

Incorrect transport and incorrect intermediate storage can lead to product damage.

- **The pump may only be suspended/carried by the strap provided for transport purposes. The cable should never be used for lifting!**
- **The pump must be protected against moisture, frost and mechanical damage when transported and stored.**

4 Intended use

The Drain-TS series drainage and submersible waste water pumps are used:

- for the automatic drainage of pits and shafts,
 - for keeping dry yard areas and basement rooms exposed to flooding,
 - for lowering surface water,
- if the waste water is not able to flow off into the sewer system through natural fall.

The pumps are suitable for pumping slightly contaminated water, rainwater, drainage water and washing water.

The pumps are usually installed under water (submerged) and can only be permanently or transportably installed vertically. Because of the sheath current cooling, the pumps can also be operated unsubmerged.

Submersible pumps with a mains connection cable of less than 10 metres are (according to EN 60335) only permitted for use inside buildings, i.e. not for operating outside.

Pumps that are intended for use in or at garden ponds or similar places must have a mains con-

necting cable that is not lighter than rubber sheathed cables reference H07 RN-F (245 IEC 66) according to EN 60335.

Danger! Mortal danger due to electric shock
The pump may not be used to drain swimming pools / garden ponds or similar places if anyone is in the water.

WARNING! Hazardous to health!

Owing to the materials used, the pumps are not suitable for potable water! Unpurified foul and waste water represents a health hazard.

CAUTION! Danger of property damage!
Pumping unpermitted substances can lead to product damage.

The pumps are not suitable for water with coarse contamination such as sand, fibres or combustible, caustic fluids or for use in potentially explosive areas.

Correct use of the pump/unit also includes following these instructions.

Any use over and beyond these is interpreted as incorrect use.



5 Product information

5.1 Type key

Example:	TS 32/9 A -10M KA, TSW 32/8 A -10M KA,
TS	Series: T = submersible pump S = wastewater
W	with turbulator
32	Nominal diameter of pressure port [mm]: 32 = Rp 1¼
/8	Max. delivery head [m] when Q=0m³/h
A	A = with float switch
10M KA	Length of mains connecting cable [m]: 10

5.2 Technical data

Mains voltage:	1~230 V, ± 10 %
Mains frequency:	50 Hz
Protection class:	IP 68
Insulation class:	B
Speed:	2900 rpm (50 Hz)
Max. current consumption:	See name plate
Power consumption P ₁ :	See name plate
Max. flow rate:	See name plate
Max. delivery head:	See name plate
Operating mode:	4000 operating hours a year
Operating mode S3 (optimum):	Intermittent duty, 30 % (3.0 min. operation, 7.0 min. interval).
Recommended switching frequency:	20/h
Max. switching frequency:	50/h
Free ball passage:	10 mm
Nominal diameter of the pressure port:	Ø 32 mm (Rp 1¼)
Admissible fluid temperature:	+3 to 35 °C
briefly 3 min.:	90 °C
Max. submersion depth:	10 m
Flat suction up to:	8 mm (TSW: 18 mm)

5.3 Scope of delivery

Pump with

- 10 metre connecting cable with mains plug
- Connected float switch (design-A)
- Turbulator (TSW)
- Hose connection (\varnothing 32 mm / R 1)
- Non-return valve
- Installation and operating instructions

5.4 Accessories

Accessories must be ordered separately (see catalogue):

- Switchgear for 1 or 2 pump operation
- External monitoring devices / tripping unit
- Level control (e.g. flow switch)
- Accessories for transportable wet sump installation (e.g. hose couplings, hoses, etc.).
- Accessories for stationary wet sump installation (e.g. check valves, non-return valves, etc.)

6 Description and function

6.1 Description of the product (Fig. 1)

Pos.	Description of the component	Pos.	Description of the component
1	Cable and float switch	16	Rotary shaft seal
2	Clip for float switch	17	O-ring
3	Cap nut	18	Supporting ring
4	Housing	19	Screw
5	Motor cover, top	20	Pump housing
6	Screw	21	Impeller
7	Motor housing	22	Washer
8	Rotary shaft seal	23	Cap nut
9	Circlip	24	Strainer
10	Washer	25	Screw
11	Mechanical seal	26	Hose connector \varnothing 32 mm / R 1 (not illustrated)
12	Seal	27	Non-return valve (not illustrated)
13	O-ring	28	Guide plate
14	Seal housing	29	Turbulator
15	Screw		

The pump can be completely submerged in the fluid.

The submersible pump housing consists of stainless steel.

The electric motor is protected against the pump chamber by a rotary shaft seal to seal the motor against the oil chamber and a mechanical seal to seal the oil chamber against the fluid. The mechanical seal chamber is filled with medical white oil so that the mechanical seal is lubricated and cooled during a dry run. A further rotary shaft seal protects the mechanical seal facing the fluid. The motor is cooled by the surrounding fluid.

The pump is installed on the floor of a shaft. For a stationary installation, it is bolted to a fixed pressure pipe or for a transportable installation, it is

connected to a hose connection.

The pumps are commissioned by plugging in the protective contact plug.

They operate automatically, when the float switch switches the pump on from a certain water level "h" (Fig. 2) and switches it off at a minimum water level "h1".

The motors are equipped with thermal motor protection, which switches off the motor automatically if it overheats and switches it on again when it has cooled down. The condenser is integrated in the single-phase motor.

Version TSW with turbulator

For waste water with precipitating and floating particles, the submersible pump has been equipped with a turbulator at the suction strainer. Precipitating particles are continuously whirled up in the suction area of the pump and pumped off with the water. Therefore, mud accumulation in the pump shaft, with problematic consequences such as clogging of the pump and odour formation, is largely prevented.

If the removal of the waste water does not allow any interruption, a second pump (automatic standby pump), together with the necessary switchgear (accessory), increases the operating reliability if the 1st pump develops a fault.

7 Installation and electrical connection



DANGER! Risk of fatal injury!

Incorrect installation and improper electrical connections can result in a risk of fatal injury.

- **The installation and electrical connections should only be done by properly skilled staff and in compliance with the applicable regulations!**
- **Follow all accident prevention regulations!**

7.1 Installation

The pump is designed for stationary or transportable installation.



CAUTION! Danger of property damage!

Danger of damage due to incorrect handling.

Only suspend the pump by the strap with the aid or a chain or rope, never by the electrical or float switch cable or the pipe/hose connection.

The installation site or shaft for the pump must be free of frost.

The shaft must be cleared of coarse material such as rubble before setting up and starting the pump.

The quality of the shaft must guarantee the unhindered mobility of the float switch.

Installation dimension / shaft dimensions (cf. Fig 2)

Pump	H _{min}	B _{min}	h ± 8	h1 ± 8	h2 ± 8
Drain					[mm]
TS 32/9	400	400 x 400	330	130	14
TSW 32/8	400	400 x 400	340	140	24
TS 32/12	400	400 x 400	350	130	14
TSW 32/11	400	400 x 400	360	140	24

Pump	a	b	c	d
Drain				
TS 32/9	246	280	320	161
TSW 32/8	266	300	340	161
TS 32/12	270	300	340	171
TSW 32/11	290	320	360	171

The diameter of the pressure pipe (pipe/hose connection) should not be smaller than the pressure connection of the pipe because of the increased risk of clogging and greater pressure losses. To avoid pressure losses, it is recommended that the pipe connection one number higher is selected.

Stationary wet sump installation

In the case of a stationary wet sump installation of the pump with a permanent pressure pipe, the pump must be positioned and secured so that:

- The pressure pipe connection does not support the weight of the pump.
- The load of the pressure pipe does not act on the connecting socket.
- The pump is installed stress-free.

To protect against any backflow from the public drainage pipe, the pressure pipe must be taken in an arc over the locally established backflow level (usually street level). A non-return valve does not represent a guaranteed backflow seal.

- The attached non-return valve should be installed if the pump is installed permanently.
- Seal the pipe connections to the pressure port with Teflon tape.



NOTE: Permanent leakage in this area can lead to destruction of the non-return valve and of the screwed connection.

Transportable wet sump installation

In the case of a transportable wet sump installation with hose connection, the pump must be secured in the shaft to prevent it from falling over and wandering (e.g. secure chain / rope with slight pre-tension).



NOTE: When used in a sump without a firm base, the pump must be put on a sufficiently large plate or hung from a rope or a chain in a suitable position.

7.2 Electrical connection



Danger! Risk of fatal injury!

If the electrical connection is not made properly, there is a risk of fatal injury from an electric shock.

Only allow the electrical connection to be made by an electrician approved by the local electricity supplier and in accordance with the local regulations in force.

- The type of mains connection current and voltage must correspond to the details on the name plate
- Fuse in the power supply: 10 A, slow,
- Earth the installation according to the regulations.
- The installation of a leakage current protection switch to be provided on site for a trip current of 30 mA is recommended (caution when installing outside).
- The pump is ready to connect.

To connect the pump to the switchgear, the shock-proof plug is disconnected and the connecting cable is then connected as follows (see Installation and operating instructions for the switchgear):

3-wire connection cable: 3x1.0 mm²

Conductor	Terminal
brown	L1
blue	N
green/yellow	PE

Socket and switchgear must be installed in a dry room and protected against flooding.

8 Commissioning



Danger! Danger through electric shock!

The pump may not be used to drain swimming pools / garden ponds or similar place if anyone is in the water.



CAUTION! Danger of property damage!

Do not allow the mechanical seal to run dry! Dry running shortens the service life of the motor and the mechanical seal. If the mechanical seal is damaged, small amounts of oil may escape into the pumped fluid.

- When filling the shaft or lowering the pump into the pit, make sure that the float switches can move freely. The switch must switch off the pump before the intake openings of the pump can draw in air.
- After filling the shaft and opening the check valve on the pressure side (if provided), the pump starts up automatically when the switch-on level 'h' is reached and switches off as soon as the switch-off level 'h1' responds.
- Do not point the water jet entering the shaft at the pump strainer. Entrained air can prevent the pumping of the pump when it is starting up.
- The maximum volume of water entering the shaft must not exceed the performance of the pump. Keep an eye on the shaft when commissioning the pump.



NOTE: The venting of the pump when commissioned for the first time will be improved by submersion in the fluid at an angle or by positioning it at a slight angle.

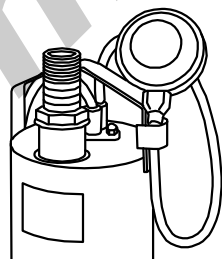
Adjusting the switching level of the float switch

The perfect functioning of the level control system is guaranteed if the details according to the table in 7.1 and Fig. 2 are observed. The switching level (switch-on/off point) can be changed via the free float switch cable by moving the cable within the clip on the pump handle.



NOTE: In order not to damage the float switch cable when adjusting the level, the clip has to be released.

If necessary, by pegging the float switch in a higher position, a drainage level of up to approximately 8 mm (TSW: 18 mm) can be achieved.



To do this, release the float switch clip on the pump handle.

Raise the float switch in relation to the handle and, working in the opposite direction, fix the cable, as close to the switch as possible, on the handle again with the aid of the clip. The automatic system is then switched off and the pump runs continuously.

An automatic operation can also be achieved with the aid of switchgear from the accessories range.

9 Maintenance

Maintenance and repairs may only be carried out by qualified experts!



DANGER! Risk of fatal injury!

There is a mortal danger through shock when working on electrical equipment.

- **Before any maintenance and repair work, the pump must be switched off and prevented from being switched on again in an unauthorised manner.**
- **Damage to the connecting cable may only be repaired by a qualified electrical contractor in principle.**
- **When checking the function following long downtimes, avoid contact with the fluid.**

In order to prevent blockage of the pump resulting from long downtimes, its ability to function should be checked at regular intervals (every 2 months) by manual raising of the float switch or direct switching-on and brief start-up of the pump. Minor wear of the rotary shaft seal and mechanical seal can lead to fouling of the liquid following an oil leak from the oil chamber, which is filled with medical white oil.

Only specialist companies or Wilo After-sales Service may open the encapsulated motor.

Cleaning the pump

Depending on the use of the pump, fouling can occur within the suction strainer and the impeller. Rinse off the pump under running water after use.

- 1 Switch off the power supply. Disconnect the mains plug.
- 2 Drain the pump
- 3 The suction strainer is bolted to the pump housing. Undo the 2 screws on the suction strainer with a suitable screwdriver and remove the suction strainer.
- 4 Clean the suction strainer under running water.
- 5 Undo the 4 screws on the bottom part of the pump housing and remove the housing. Handle the O-ring between the pump housing and motor housing carefully.
- 6 Clean the impeller and pump housing under running water. The impeller must turn freely.
- 7 Replace damaged or worn parts with original spares.
- 8 Re-assembly the pump in the reverse order.

10 Faults, causes and remedies

Only have faults remedied by qualified personnel!

Observe safety instructions in 9 Maintenance.

Fault	Cause	Remedy
The pump does not start or stops during operation	Current supply interrupted	Check fuses, cables and electrical connections.
	Motor protection switch has tripped	Allow the pump to cool down, it will start again automatically
	Fluid temperature too high	Allow to cool down
	Pump silted up or blocked	Disconnect the pump from the mains and remove from the shaft. Remove the suction strainer and rinse the suction strainer / impeller under running water
Pump does not switch on/off	Float switch blocked or cannot move freely	Check float switch and ensure mobility
Pump does not pump	Air in the installation cannot escape	Place the pump at an angle in water briefly until the air escapes. Vent the installation / drain if necessary Check the switch-off level
	Water level below the intake port	If possible, submerge the pump deeper (observe the switch-off level)
	Pressure pipe / hose diameter too small (losses too high)	Bigger dimensioning of the pressure pipe / hose diameters
	Non-return valve sticking in the pressure port	check function
	Hose kinked / check valve closed	Clear kink in hose / open check valve
Flow rate drops during operation	Suction strainer blocked / impeller blocked	Disconnect the pump from the mains and remove from the shaft. Remove the suction strainer and rinse the suction strainer / impeller under running water.

If the fault cannot be remedied, please contact the trade or your nearest Wilo-After-sales Service or agent.

11 Spare parts

Spares should be ordered through local trade outlets and/or the Wilo-After-sales Service.

To avoid queries and incorrect orders, all the data on the name plate must be indicated when ordering.

Subject to change without prior notice!

D **EG – Konformitätserklärung**
GB **EC – Declaration of conformity**
F **Déclaration de conformité CEE**

Hiermit erklären wir, dass die Bauarten der Baureihe : **TS 32/...**
Herewith, we declare that this product: **TSW 32/...**
Par le présent, nous déclarons que cet agrégat :

in der gelieferten Ausführung folgenden einschlägigen Bestimmungen entspricht:
in its delivered state comply with the following relevant provisions:
est conforme aux dispositions suivants dont il relève:

Elektromagnetische Verträglichkeit – Richtlinie **2004/108/EG**
Electromagnetic compatibility – directive
Compatibilité électromagnétique- directive

Niederspannungsrichtlinie **2006/95/EG**
Low voltage directive
Direction basse-tension

Bauproduktenrichtlinie **89/106/EWG**
Construction product directive i.d.F./ as amended/ avec les amendements suivants :
Directive de produit de construction 93/68/EWG

und entsprechender nationaler Gesetzgebung.
and with the relevant national legislation.
et aux législations nationales les transposant.

Angewendete harmonisierte Normen, insbesondere: **EN 12050-2**
Applied harmonized standards, in particular: **EN 12050-4**
Normes harmonisées, notamment: **EN 60335-2-41**
EN 61000-6-3
EN 61000-6-4

Bei einer mit uns nicht abgestimmten technischen Änderung der oben genannten Bauarten, verliert diese Erklärung ihre Gültigkeit.
 If the above mentioned series are technically modified without our approval, this declaration shall no longer be applicable.
 Si les gammes mentionnées ci-dessus sont modifiées sans notre approbation, cette déclaration perdra sa validité.

Dortmund, 29.01.2008

i. V. 
 Erwin Prieß
 Quality Manager



WILO SE
 Nortkirchenstraße 100

44263 Dortmund

<p>NL EG-verklaring van overeenstemming Hiermede verklaren wij dat dit aggregaat in de geleverde uitvoering voldoet aan de volgende bepalingen:</p> <p>Elektromagnetische compatibiliteit 2004/108/EG EG-laagspanningsrichtlijn 2006/95/EG Bouwproductenrichtlijn 89/106/EEG als vervolg op 93/86/EEG Gebruikte geharmoniseerde normen, in het bijzonder: 1)</p>	<p>I Dichiarazione di conformità CE Con la presente si dichiara che i presenti prodotti sono conformi alle seguenti disposizioni e direttive rilevanti:</p> <p>Compatibilità elettromagnetica 2004/108/EG Direttiva bassa tensione 2006/95/EG Direttiva linee guida costruzione dei prodotti 89/106/CEE e seguenti modifiche 93/68/CEE Norme armonizzate applicate, in particolare: 1)</p>	<p>E Declaración de conformidad CE Por la presente declaramos la conformidad del producto en su estado de suministro con las disposiciones pertinentes siguientes:</p> <p>Directiva sobre compatibilidad electromagnética 2004/108/EG Directiva sobre equipos de baja tensión 2006/95/EG Directiva sobre productos de construcción 89/106/CEE modificada por 93/68/CEE Normas armonizadas adoptadas, especialmente: 1)</p>
<p>P Declaração de Conformidade CE Pela presente, declaramos que esta unidade no seu estado original, está conforme os seguintes requisitos:</p> <p>Compatibilidade electromagnética 2004/108/EG Directiva de baixa voltagem 2006/95/EG Directiva sobre produtos de construção 89/106/CEE com os aditamentos seguintes 93/68/EEG Normas harmonizadas aplicadas, especialmente: 1)</p>	<p>S CE- försäkran Härmed förklarar vi att denna maskin i levererat utförande motsvarar följande tillämpliga bestämmelser:</p> <p>EG-Elektromagnetisk kompatibilitet – riktlinje 2004/108/EG EG-Lågspänningsdirektiv 2006/95/EG EG-Byggmaterialdirektiv 89/106/EEG med följande ändringar 93/68/EEG Tillämpade harmoniserade normer, i synnerhet: 1)</p>	<p>N EU-Overensstemmelseserklæring Vi erklærer hermed at denne enheten i utførelse som levert er i overensstemmelse med følgende relevante bestemmelser:</p> <p>EG-EMV-Elektromagnetisk kompatibilitet 2004/108/EG EG-Lavspenningsdirektiv 2006/95/EG Byggevaredirektiv 89/106/EEG med senere tilføyelser 93/68/EEG Anvendte harmoniserte standarder, særlig: 1)</p>
<p>FIN CE-standardinmukaisuusseloste Ilmoitamme täten, että tämä laite vastaa seuraavia asiaankuuluvia määräyksiä:</p> <p>Sähkömagneettinen soveltuvuus 2004/108/EG Matalajännite direktiivit: 2006/95/EG EU materiaalidirektiivi 89/106/EEG seuraavien täsmennyksin 93/68/EEG Käytetyt yhteensovitettut standardit, erityisesti: 1)</p>	<p>DK EF-overensstemmelseserklæring Vi erklærer hermed, at denne enhed ved levering overholder følgende relevante bestemmelser:</p> <p>Elektromagnetisk kompatibilitet: 2004/108/EG Lavvolts-direktiv 2006/95/EG Produktkonstruktionsdirektiv 98/106/EEG følgende 93/68/EEG Anvendte harmoniserede standarder, særligt: 1)</p>	<p>H EK. Azonossági nyilatkozat Ezennel kijelentjük, hogy az berendezés az alábbiaknak megfelel:</p> <p>Elektromágneses zavarás/tűrés: 2004/108/EG Kisfeszültségű berendezések irány-Elve: 2006/95/EG Építési termékek irányelv 98/106/EEG és az azt kiegészítő 93/68/EEG Felhasznált harmonizált szabványok, különösen: 1)</p>
<p>CZ Prohlášení o shodě EU Prohlašujeme tímto, že tento agregát v dodaném provedení odpovídá následujícím příslušným ustanovením:</p> <p>Směrnícím EU-EMV 2004/108/EG Směrnícím EU-nízké napětí 2006/95/EG Směrnícím stavebních produktů 89/106/EEG ve sledu 93/68/EEG Použité harmonizační normy, zejména: 1)</p>	<p>PL Deklaracja Zgodności CE Niniejszym deklaruujemy z pełną odpowiedzialnością że dostarczony wyrób jest zgodny z następującymi dokumentami:</p> <p>Odpowiedniość elektromagnetyczna 2004/108/EG Normie niskich napięć 2006/95/EG Wyroby budowlane 89/106/EEG ze zmianą 93/68/EEG Wyroby są zgodne ze szczegółowymi normami zharmonizowanymi: 1)</p>	<p>RUS Декларация о соответствии Европейским нормам Настоящим документом заявляем, что данный агрегат в его объеме поставки соответствует следующим нормативным документам:</p> <p>Электромагнитная устойчивость 2004/108/EG Директивы по низковольтному напряжению 2006/95/EG Директива о строительных изделиях 89/106/EEG с поправками 93/68/EEG Используемые согласованные стандарты и нормы, в частности: 1)</p>
<p>GR Δήλωση προσαρμογής της Ε.Ε. Δηλώνουμε ότι το προϊόν αυτό σ' αυτή την κατάσταση παράδοσης ικανοποιεί τις ακόλουθες διατάξεις :</p> <p>Ηλεκτρομαγνητική συμβατότητα 2004/108/EG Οδηγία χαμηλής τάσης EG-2006/95/EG Οδηγία κατασκευής 89/106/EEG όπως τροποποιήθηκε 93/68/EEG Εναρμονισμένα χρησιμοποιούμενα πρότυπα, ιδιαίτερα: 1)</p>	<p>TR CE Uygunluk Teyid Belgesi Bu cihazın teslim edildiği şekliyle aşağıdaki standartlara uygun olduğunu teyid ederiz:</p> <p>Elektromanyetik Uyumluluk 2004/108/EG Alçak gerilim direktifi 2006/95/EG Ürün imalat direktifi 89/106/EEG ve takip eden, 93/68/EEG Kismen kullanılan standartlar: 1)</p>	<p>1) EN 12050-2 EN 12050-4 EN 60335-2-41 EN 61000-6-3 EN 61000-6-4</p>

i. V. Erwin Prieb
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Quality Manager



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