

Overensstemmelseerklæring:

Vi, **T. Smedegaard A/S**, erklærer hermed at vort produkt IsoBar er i overensstemmelse med:

- Rådets Direktiv 73/23 om indbyrdes tilnærmelse af EU-medlemsstaternes lovgivning om elektrisk materiel bestemt til anvendelse indenfor visse spændingsgrænser.
- Rådets Direktiv 89/336, om, indbyrdes tilnærmelse af EU-medlemsstaternes lovgivning om elektromagnetisk kompatibilitet
- Rådets Direktiv 89/392, om indbyrdes tilnærmelse af EU-medlemsstaternes lovgivning om konstruktion og fremstilling af maskiner.

Hvis yderligere information ønskes, bedes De venligst kontakte **T. Smedegaard A/S** eller en af de regionale importører.

Declaration of conformity

We **T. Smedegaard A/S**, hereby declare that our product IsoBar, is in conformity with:

- Council Directive 73/23 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.
- Council Directive 89/336 on the approximation of the laws of the Member States relating to electromagnetic compatibility.
- Council Directive 89/392 on the approximation of the laws of the Member States relating to construction and making of machines.

If further information is required, please contact **T. Smedegaard A/S** or their representatives whose addresses are listed at the end of this installation guide.

Übereinstimmungserklärung

T. Smedegaard A/S erklært hermit die Übereinstimmung der Smedegaard IsoBar™ mit:

- EG-Richtlinie 73/23 zur Harmonisierung der Vorschriften der Mitgliedsstaaten, welche sich auf elektrische Geräte beziehen, die für den Betrieb innerhalb bestimmter Spannungsgrenzen bestimmt sind.
- EG-Richtlinie 89/336 zur Annäherung der Vorschriften der Mitgliedsstaaten, welche sich auf die elektromagnetische Verträglichkeit beziehen.
- EG-Richtlinie 89/392 zur Annäherung der Vorschriften der Mitgliedsstaaten, welche sich auf die Konstruktion und Fertigung von Maschinen beziehen.

Fals Sie weitere Informationen benötigen, wenden sie sich bitte an Fa. **T. Smedegaard A/S** oder an eine Vertretung. Die Adressen finden Sie am Ende der Betriebsanleitung

Déclaration de Conformité

Nous **T. Smedegaard A/S**, déclarons que nos produits type IsoBar™ sont en conformité avec:

- La directive 73/23 du conseil pour le rapprochement des lois des pays membres concernant les équipements électriques étudiés pour être utilisés sous des limites de tension définies.
- La directive 89/336 du conseil pour le rapprochement des lois des pays membres concernant la compatibilité électromagnétique.
- La directive 89/392 du conseil pour le rapprochement des lois des pays membres concernant la construction des machines.

Si vous désirez de plus amples informations S.V.P. contactez **T. Smedegaard A/S** ou notre représentant, les adresses sont listées à la fin de ce guide d'installation.

Declaración de conformidad

Nosotros **T. Smedegaard A/S**, por la presente declaramos que nuestro producto, bombas de tipo IsoBar™, es conforme a:

- Directiva 73/23 sobre la coordinación de la legislación de los Estados Miembros relativa a equipos eléctricos designados para su uso dentro de ciertos límites de voltaje.
- Directiva 89/336 sobre la coordinación de la legislación de los Estados Miembros relativa a la compatibilidad electromagnética.
- Directiva 89/392 sobre la coordinación de la legislación de los Estados Miembros relativa a la construcción y montaje de máquinas.

Para información adicional, por favor, contactar con **T. Smedegaard A/S** o sus representantes.

EN standards used:

EN 292 part 1+2, EN 809, EN 60335-2-51,
EN 50081-1 and EN 50082-2.

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SMEDEGAARD OF DENMARK

■ **Montagevejledning IsoBar™**
2-65, 3-65, 2-70, 3-70, 2-72, 3-72, 4-60

■ **Installation Guide IsoBar™**
2-65, 3-65, 2-70, 3-70, 2-72, 3-72, 4-60

■ **Einbauanleitung IsoBar™**
2-65, 3-65, 2-70, 3-70, 2-72, 3-72, 4-60

■ **Guide d'installation IsoBar™**
2-65, 3-65, 2-70, 3-70, 2-72, 3-72, 4-60

■ **Guía de instalación IsoBar™**
2-65, 3-65, 2-70, 3-70, 2-72, 3-72, 4-60



Installation Guide IsoBar™

2-65, 3-65, 2-70, 3-70, 2-72, 3-72, 4-60

This installation guide gives basic instructions which are to be observed during installation, operation and maintenance of the pump. It is therefore imperative that this manual is read by the responsible person/operator prior to the installation and should always be kept available at the site.

It is not only the general safety instructions under this main heading "Safety" that are to be observed but also the specific information provided under the other main headings.

Serial No: See nameplate

Application

The IsoBar™ circulating pumps are used in all types of heating systems. Via an internal speed Control, the pump maintains predetermined differential heads at varying flows (see control details under the heading "Duty control"). This design concept gives electrical and thermal savings together with reduced noise level in the installation.

Pump medium

Clean, thin, nonaggressive and nonexplosive fluids without any solids or fibres.

Antifreeze without any mineral oil (special model available upon request).

Kinematic viscosity: Max. 10mm²/s

Please note: If any liquid other than water is being pumped, we recommend that you contact

T. Smedegaard A/S or their representative as the pump characteristics may change.

Technical data

Electrical data: See nameplate

Max. working pressure: 10 bar (1000 kPa)

Min. static head at 82°C: 4 - 5 m depending upon model

Min. static head at 95°C: 5 - 7 m depending upon model

IsoBar type	Water temp. Range max. [C°]	Max. ambient temp. [C°]
2/3-65, 2/3-70,	110	30
2/3-72, 4-60	90	40

Safety



- The surface temperature might be hot.
- When venting the pump (see fig. 3), it could result in a slight escape of hot water or steam!



- Pump should be wired in line with the existing regulations.
- The mains electrical supply must be isolated before any work is carried out on the pump. The IsoBar pump must be earthed.

Personnel qualification and training

Personnel responsible for operation, maintenance, inspection and installation of the pump must be adequately qualified.

The person responsible for the complete installation must ensure that the contents of this manual are fully understood by any personnel working on the system.

Airborne sound pressure level

IsoBar 2-65 to IsoBar 4-75: Max. 33 dB(A)

According to EN 12639

Installation

- 1) The pump should always be installed with the pump shaft horizontal (see fig. 1). Direction of flow through the pump casing is indicated by an arrow.
- 2) If terminal box is to be repositioned by rotating head, care must be taken to ensure the casing "0" ring is correctly positioned.
- 3) Ensure pipework alignment and the pump and pipework are adequately supported. Sharp bends should be avoided adjacent to the pump.
- 4) If pump is mounted in vertical pipework, flow should be upwards. If flow is downwards, an air-vent must be fitted at the highest point before pump suction.
- 5) Pump should never be allowed to operate for a long period in a closed valve condition.
- 6) To avoid accumulation of impurities in the pump, make sure that it is not mounted at the lowest point in a system.
- 7) It is recommended that isolating valves are fitted on either side of the pump.
- 8) System should be thoroughly flushed out to clear any solder, steel wool, plaster or any other foreign matter that may be lodged in the pump.

Electrical connection

Electrical data is shown on the nameplate and a wiring diagram is located in the terminal box (see figs. 2a).

The pump needs no external protection but must be earthed.

The IsoBar circulating pumps, with the exception of the IsoBar 2-65, 3-65 are fitted with a potential free status relay, (open at alarm) which opens under a fault condition or by disconnection of mains. The relay is using terminals 1 and 2 (see figs. 2b). Maximum load: - 250V AC /1A, 30V DC/5A

Venting

Once the system has been filled and pressurised, vent the pump before start-up. Venting can be achieved by

removing the plug positioned in centre of nameplate (see fig. 3) This process should be repeated periodically until all air held in suspension in the system water has been removed.

Duty Control

Please note: IsoBar 2-65, 3-65 can not be controlled by external input.

Without external input

There are two modes for controlling the pumps.

Mode 1: Controlled to follow a works pre-set system characteristic (orange LED).

Mode 2: Controlled to follow a specific defined differential head at different flows (green LED).

Mode change is achieved by simultaneously pushing the two control buttons located on the terminal box (see fig. 4a).

Mode 2 adjustment: Push + button - set point increases.

Push - button - set point decreases. Indication of set point - red flash LED according to the following:

Min set point 1 flash with an interval of 1 sec.

Max. set point 10 flashes with an interval of 1 sec.

With external input

The pumps can also be controlled by external input. There are three functions of control.

- 1) Control by integrated analog input, terminals 4 and 5 to be used (see fig. 2c).

Terminal 4: 2,5-10 VDC & 4-20mA

Terminal 5: Common (1)

Integration time from minimum to maximum duty, approximately 60 sec.

- 2) Night-setback, terminals 3, 4 and 5 to be used (see fig. 2d).

Terminal 3: 10 VDC & 10mA

Terminal 5: Common

- 3) External stop of pump, terminals 3 and 5 to be used (see fig. 2e).

Terminal 3 and 4: 10 VDC & 30mA

Terminal 5: Common

When controlled by external input, it will be indicated by Green flash LED.

In the case of the function being inactive, the pump will revert to the Mode last chosen (see under

Without external input).

Note: The pump is works supplied set in mode 1.

General

In all IsoBar pumps, **Pressure Loss Compensation (P.L.C.)** is included in the control, which means that the pump does not follow a constant differential head but takes into account the decreasing pressure needs at decreasing flow (see fig. 5b).

Signals

The IsoBar™ pumps have one or two LED's on the terminal box for external fault indication (see fig. 5a). When indicating fault the pump is stopped. Reset is carried out by switching the mains supply off for 5 sec. and then on.

IsoBar 2-65, 3-65, 2-70, 3-70, 3-72 and 4-60

Signal LED	Description
No light	Main supply switched off
Orange	Running in Mode 1.(see under heading "Duty control")
Green	Running in Mode 2. (see under heading "Duty control")
Green flash	Controlled by external input
Red	Blocked / too hot motor

Service/Maintenance

Smedegaard's IsoBar range of glandless pumps are virtually maintenance free and in a well designed system should give many years of operation. If motor shaft is seized as a result of pump standing for a long period without use or by a limited accumulation of magnetite or other impurities, it should be freed. Insert a screwdriver through vent plug hole into the slot in the end of the shaft and rotate (see fig. 3).

Please note: Any repairs required to the internal electrical parts of the pump/terminal box, except points mentioned under the heading "Electrical connection", are to be carried out by a Service Department approved by **T. Smedegaard A/S**.

Fault finding

Fault	Cause	Action
The pump is not running.	See under heading "Signals"	Reset fault indication. Check main supply and fuses.
Pump will not start / is running irregular.	Impurities in the pump.	See under heading "Service/Maintenance".
The pump is running but no flow.	Air in the system. Closed valve.	Vent pump and system. Open valve.
Pump noisy.	Pump speed too high. Static head too low. Air in system.	Decrease set point of control. Increase inlet pressure. Vent pump and system.

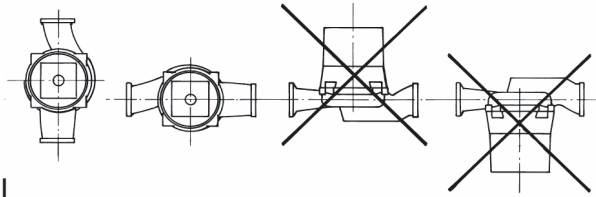


Fig. 1

Main connection

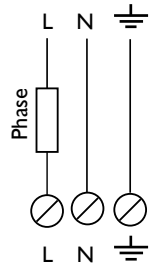


Fig. 2a

Fail Relay

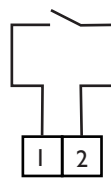


Fig. 2b

Analog input

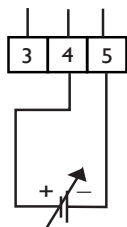


Fig. 2c

Night setback

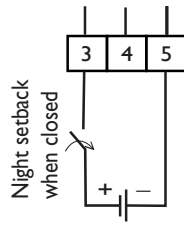


Fig. 2d

Pump stop

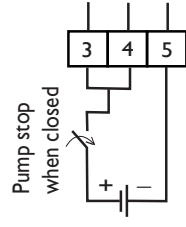


Fig. 2e

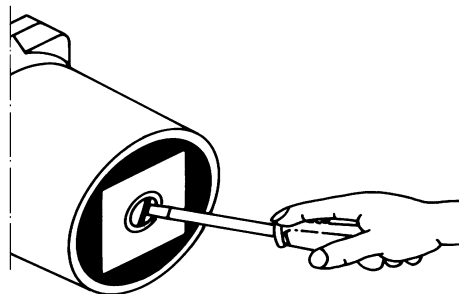


Fig. 3

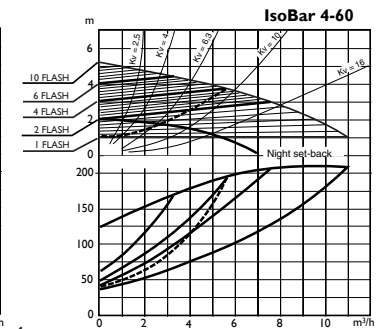
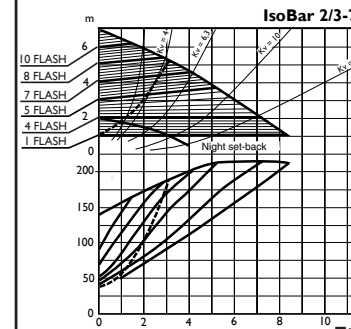
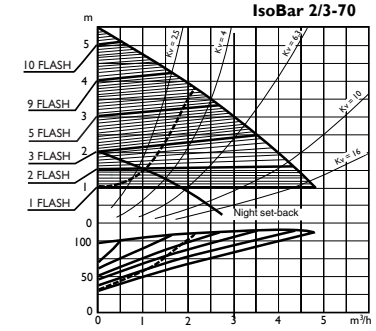
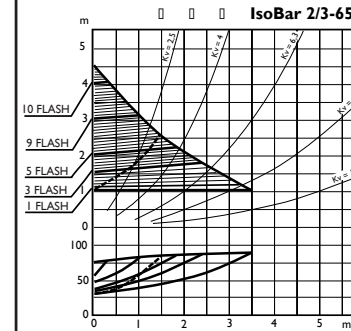


Fig. 4

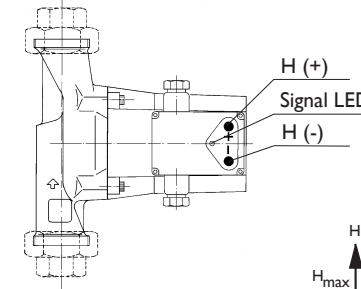


Fig. 5a

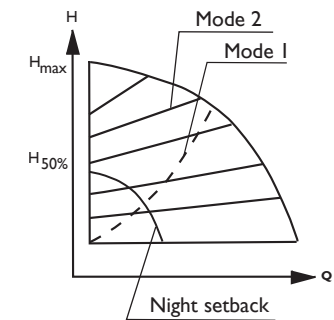


Fig. 5b