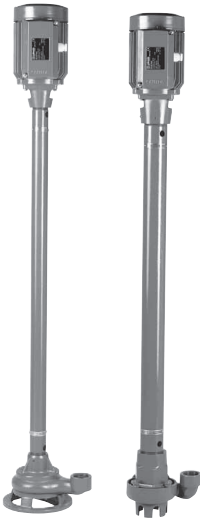


BEDU
≡ POMPEN ≡

***Vertical submerged pumps (sump pumps)**



VAL, SC

ORIGINAL OPERATING INSTRUCTIONS

made for your process

SUMMARY

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1. GENERAL INFORMATION

Before using the product carefully read the information contained in this instruction manual, the manual should be kept for future reference.

Italian is the original language of this instruction manual, this language is the reference language in case of discrepancies in the translations.

This manual is part of the essential safety requirement and must be retained until the product is finally de-commissioned.

The customer, in case of loss, can request a copy of the manual by contacting Calpeda S.p.A. or their agent, specifying the type of product data shown on the label of the machine (see 2.3 Marking)

Any changes, alterations or modifications made to the product or part of it, not authorized by the manufacturer, will revoke the "CE declaration" and warranty.

This appliance should not be operated by children younger than 8 years, people with reduced physical, sensory or mental capacities, or inexperienced people who are not familiar with the product, unless they are given close supervision or instructions on how to use it safely and are made aware by a responsible person of the dangers its use might entail.

Children must not play with the appliance.

It is the user's responsibility to clean and maintain the appliance. Children should never clean or maintain it unless they are given supervision.

Do not use in ponds, tanks or swimming pools or where people may enter or come into contact with the water.

Read carefully the installation section which sets forth:

- The maximum permissible structural working pressure (chapter 3.1).
- The type and section of the power cable (chapter 6.5).
- The type of electrical protection to be installed (chapter 6.5).

EN

1.1. Symbols

To improve the understanding of the manual, below are indicated the symbols used with the related meaning.



Information and warnings that must be observed, otherwise there is a risk that the machine could damage or compromise personnel safety.



The failure to observe electrical information and warnings, could damage the machine or compromise personnel safety.



Notes and warnings for the correct management of the machine and its parts.



Operations that could be performed by the final user. After carefully reading of the instructions, is responsible for maintenance under normal conditions. They are authorized to affect standard maintenance operations.



Operations that must be performed by a qualified electrician. Specialized technician authorised to affect all electrical operations including maintenance. They are able to operate with in the presence of high voltages.



Operations that must be done performed by a qualified technician. Specialized technician able to install the device, under normal conditions, working during "maintenance", and allowed to do electrical and mechanical interventions for maintenance. They must be capable of executing simple electrical and mechanical operations related to the maintenance of the device.



Indicates that it is mandatory to use individual protection devices.



Operations that must be done with the device switched off and disconnected from the power supply.



Operations that must be done with the device switched on.

1.2. Manufacturer name and address

Manufacturer name: Calpeda S.p.A.
Address: Via Roggia di Mezzo, 39
36050 Montorso Vicentino - Vicenza / Italia
www.calpeda.it

1.3. Authorized operators


The product is intended for use by expert operators divided into end users and specialized technicians. (see the symbols above).



It's forbidden, for the end user, carry out operations which must be done only by specialized technicians. The manufacturer declines any liability for damage related to the non-compliance of this warning.

1.4. Warranty

For the product warranty refer to the general terms and conditions of sale.

 The warranty covers only the replacement and the repair of the defective parts of the goods (recognized by the manufacturer).

The Warranty will not be considered in the following cases:

- Whenever the use of the device does not conform to the instructions and information described in this manual.
- In case of changes or variations made without authorization of the manufacturer.
- In case of technical interventions executed by a non-authorized personnel.
- In case of failing to carry out adequate maintenance.

1.5. Technical assistance

Any further information about the documentation, technical assistance and spare parts, shall be requested from: Calpeda S.p.A. (paragraph 1.2).

2. TECHNICAL DESCRIPTION

Vertical column sump pumps, with motor in dry installation and with pump body submerged in the liquid handled (without suction line or foot valve).

Impeller - VAL: free-flow impeller (vortex or recessed impeller).

- SC: open impeller.

Connection - VAL 30, SC 30, SC 50: threaded port ISO 228 (BS 2779).

- VAL 65: flange with plain face oval threaded counter-flange UNI 2245, PN 2.5.

2.1. Intended use

- For draining a basin or a sump with domestic or industrial sewage.
- For slightly dirty waste water, for liquids which are non-aggressive for the pump materials.
- Maximum size of solids:


VAL 30 = 25 mm; **VAL 65** = 50 mm;

SC 30 = 3 mm; **SC 50** = 6 mm.

Liquid temperature up to 40 °C.

2.2. Improper use

The device is designed and built only for the purpose described in paragraph 2.1.

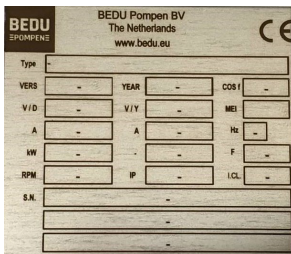
 Improper use of the device is forbidden, as is use under conditions other than those indicated in these instructions.

Improper use of the product reduces the safety and the efficiency of the device, Calpeda shall not be responsible for failure or accident due to improper use.

2.3. Marking

The following picture is a copy of the name-plate (see Pic.1) that is on the external case of the pump.

Example plate pump



BEDU		BEDU Pompen BV		CE	
SPOMPENE		The Netherlands			
www.bedu.eu					
Type	-				
VERS	-	YEAR	-	COSI	-
V/D	-	V/I	-	MSI	-
A	-	A	-	Hz	-
kW	-		-	F	-
RPM	-	IP	-	I.C.L.	-
S.N.	-		-		-

3. TECHNICAL FEATURES

3.1. Technical data

Dimensions and weight (see technical catalogue).

Nominal speed 2900/3450 rpm

Protection IP54 (IP 55 Special construction)

Supply voltage / Frequency:

- up to 240V 1~ 50/60 Hz

- up to 480V 3~ 50/60 Hz

Check that the mains frequency and voltage correspond to the electrical characteristics shown on the indicator plate.

The electric data marked on the label are referred to the nominal power of the motor.

Sound pressure: ≤ 70 dB (A);

Max. starts per hour: 30 at regular intervals.

Maximum suction pressure: PN (Pa) - Hmax (Pa).

3.2. Operating conditions

Installation in well ventilated location protected from the weather, with a maximum ambient temperature of 40 °C.

4. SAFETY

4.1. General provisions


 Before using the product it is necessary to know all the safety indications.


Carefully read all operating instructions and the indications defined for the different steps: from transportation to disposal.

The specialized technicians must carefully comply with all applicable standards and laws, including local regulations of the country where the pump is sold.


The device has been built in conformity with the current safety laws. The improper use could damage people, animals and objects.

The manufacturer declines any liability in the event of damage due to improper use or use under conditions other than those indicated on the name-plate and in these instructions.

 Follow the routine maintenance schedules and the promptly replace damaged parts, this will allow the device to work in the best conditions. Use only original spare parts provided from Calpeda S.p.A or from an authorized distributor.

 Don't remove or change the labels placed on the device.

Do not start the device in case of defects or damaged parts.

 Maintenance operations, requiring full or partial disassembly of the device, must be done only after disconnection from the supply.

4.2. Safety devices

The device has an external case that prevents any contact with internal parts.

4.3. Residual risks

The appliance, designed for use, when used in-line with the design and safety rules, doesn't have residual risks.

4.4. Information and Safety signals

For this kind of product there will not be any signals on the product.

4.5. Individual protection devices

During installation, starting and maintenance it is suggested to the authorized operators to consider

the use of individual protection devices suitable for described activities.

During ordinary and extraordinary maintenance interventions, safety gloves are required.

Signal individual protection device
HAND PROTECTION
(gloves for protection against chemical, thermal and mechanical risks).



5. TRANSPORTATION AND HANDLING

The product is packed to maintain the content intact. During transportation avoid to stack excessive weights. Ensure that during the transportation the box cannot move.

It is not necessary to use any special vehicle to transport the packaged device.

The transport vehicles must comply, for the weight and dimensions, with the chosen product (see technical catalogue dimensions and weights).

5.1. Handling

Handle with care, the packages must not receive impacts.

Avoid to impact onto the package materials that could damage the pump.

If the weight exceeds 25 Kg the package must be handled by two person at the same time.

6. INSTALLATION

6.1. Dimensions

For the dimensions of the device (see technical catalogue).

6.2. Ambient requirements and installation site dimensions

The customer has to prepare the installation site in order to guarantee the right installation and in order to fulfill the device requirements (electrical supply, etc...). The place where the device will be installed must fulfill the requirements in the paragraph 3.2.

It's Absolutely forbidden to install the machine in an environment with potentially explosive atmosphere.

6.3. Unpacking



Inspect the device in order to check any damages which may have occurred during transportation.

Package material, once removed, must be discarded/ recycled according to local laws of the destination country.

6.4. Installation

Minimum dimensions of installation pit: 0,6x0,6 m.

Minimum and maximum immersion depth within the marks on the pump column.

The pump must be installed vertically, with the pump casing submerged in the liquid handled and with the motor in a well ventilated location, protected from the weather.

The motor is not submersible.



Make sure all necessary precautionary measures are taken to avoid minor or serious accidents which may be caused by toxic exhalation at the site of installation.

The internal diameter of the delivery pipe must never be smaller than the diameter of the pump port.

If slime deposits are expected to form at the bottom of the installation pit, a support must be provided to keep the pump raised.

Secure pump and delivery pipe to suitable rests.

6.5. Electrical connection



Electrical connection must be carried out only by a qualified electrician in accordance with local regulations.

Follow all safety standards.

The unit must be properly earthed (grounded).

Connect the earthing (grounding) conductor to the terminal with the ⊕ marking.

Compare the frequency and mains voltage with the name-plate data and connect the supply conductors to the terminals in accordance with the appropriate diagram inside the terminal box cover.



ATTENTION: never allow washers or other metal parts to fall into the internal cable opening between the terminal box and stator. If this occurs, dismantle the motor to recover the object which has fallen inside.

Place the power supply cable and all electrical components above the top grade level of the sump.

If the terminal box is provided with an inlet gland, use a flexible power supply cord of the H07 RN-Ftype with section of cable not less than (par. 12.3 TAB 1).

If the terminal box is provided with an inlet bushing, connect the power supply cord through a conduit.

For use in swimming pools (not when persons are in the pool), garden ponds and similar places, a **residual current device** with IΔN not exceeding 30 mA must be installed in the supply circuit.

Install a **device for disconnection from the mains** (switch) with a contact separation of at least 3 mm in all poles.

With a three-phase motor install an overload protection device with curve D appropriate for the rated current of the pump.

Single-phase **VALM, SCM**, are supplied with a capacitor connected to the terminals and (for 220-240 V - 50 Hz) with an incorporated thermal protector.

Float switch supplied only on demand:

- for single-phase units, connected to the terminals in the terminal box;
- for three-phase units, to be connected to the control panel.

When the water level is not under direct visible control, install a float switch or an automatic control system with electrodes **to protect the pump against dry running.**

7. STARTUP AND OPERATION

7.1. Preliminary checks before start-up of the pump

Do not start-up the device in case of damaged parts.

7.2. First starting



ATTENTION: never run the pump dry.

Start the pump only when immersed in the liquid within the minimum and maximum depth marks on the pump column.

Before starting, check that the shaft turns by hand. For this purpose use the screwdriver notch on the shaft end on the ventilation side.

With a three-phase motor check that the rotation is in the clockwise direction as seen from the motor fan side; otherwise disconnect electrical power and

reverse the connections of two phases. Check that the pump works within its field of performance, and that the absorbed current shown on the name-plate is not exceeded. Otherwise adjust the delivery gate valve or the setting of any pressure switches.



Never run the pump for more than five minutes with a closed gate valve.



Never introduce fingers in the suction opening unless it is absolutely certain the electric power has been disconnected (that the pump cannot be accidentally switched on) and the impeller has stopped rotating completely.

7.3. Switch off of the pump



The appliance must be switch off every time there are faults. (see troubleshooting).

The product is designed for a continuous duty, the switch off is performed by disconnecting the power supply by means the expected disconnecting devices. (see paragraph "6.5 Electrical connection").

8. MAINTENANCE

Before any operations it's necessary to disconnect the power supply.

If required ask to an electrician or to an expert technician.



Every maintenance operations, cleaning or repairation executed with the electrical system under voltage, it could cause serious injuries to people.



If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

In case of extraordinary maintenance, or maintenance operations that require part-removing, the operator must be a qualified technician able to read schemes and drawings.

It is suggest to register all maintenance operation executed.



During maintenance keep particular attention in order to avoid the introduction of small external parts, that could compromise the device safety.



It is forbidden to execute any operations with the direct use of hands. Use water-resistant, anti-cut gloves to disassemble and clean.



During maintenance operations external personnel is not allowed.

Maintenance operations that are not described in this manual must be made only by special personnel authorized by Calpeda S.p.A.

For further technical information regarding the use or the maintenance of the device, contact Calpeda S.p.A.

8.1. Routine maintenance



Under normal operating conditions the pump will not require maintenance.



Before every maintenance operations disconnect the power supply and make sure that the device could not accidentally operate.



The pump may have been immersed in hazardous substances or products emanating toxic gases, or may be located in an environment which is toxic due to other reasons; make sure all necessary precautionary measures are taken to avoid accidents.

Any pumps that require inspection/repair must be drained and carefully cleaned inside and outside before dispatch/submission.

Hose down all accessible parts with a jet of water.

If freezing may be expected while the pump remains inactive and it is not submersed at a safe depth, remove the pump from the water and leave in a dry place.

If the pump is temporarily used with incrusting liquids (liquids with particles that solidify when exposed to air in stagnant conditions) **or water containing chloride**, flush the pump briefly with clean water immediately after use to remove any deposit.

If the pump has not been used for a long time and does not start or gives no water (but electrical connections are in order), the pump must be removed from the water and checked to see if it is choked by any foreign matter or blocked by sediment, deposits or any other cause.

8.2. Dismantling the pump



For **disassembly and reassembly**, refer to the cross-section drawing.

If the ball bearing (73.00) has to be replaced, remove the shear pin (64.24) and the screws (70.18) to separate the motor from the pump (mark first the position of the motor-shaft 78.00 in the pump-shaft 64.00).

If the bearing sleeve (52.00) has to be replaced, remove the screws (14.24), the pump casing (14.00), the nut or screw (28.04), the impeller (28.00) and the key (28.20) to draw out the pump shaft (64.00).

8.3. Pumps with IP 55 protection (Special construction)



To always assure IP 55 degree of protection, it is necessary to check the following points:

- Before starting the motors, carefully control the position of the gasket between terminal box and its cover. For cable of small size, use a protective covering between cable and cable gland.
- When disassembling the end shields of the motors, restore the existing joint using the sealing glue LOCTITE type 510 or other equivalent sealing system, if any, and check the perfect assembly of the sealing ring on the shaft.

9. DISPOSAL



European Directive
2012/19/EU (WEEE)

The final disposal of the device must be done by specialized company.

Make sure the specialized company follows the classification of the material parts for the separation. Observe the local regulations and dispose the device accordingly with the international rules for environment protection.

10. SPARE PARTS

10.1. Spare-parts request

When ordering spare parts, please quote their designation, position number in the cross section drawing and rated data from the pump name plate (type, date and serial number).

The spare parts request shall be sent to CALPEDA S.p.A. by phone, fax, e-mail.

11. DESIGNATION OF PARTS

Nr.	Designation
12.00	Casing cover
12.20	Screw
13.12	Delivery side counterflange
13.16	Screw
13.20	Nut
14.00	Pump casing
14.24	Screw
14.29	Washer
28.00	Impeller
28.04	Impeller nut (or screw)
28.08	Washer
28.20	Key
50.00	Lower bearing bush housing
52.00	Bearing sleeve
52.04	Grub screw
54.00	Support column
54.04	Grub screw

54.08	Grub screw
56.00	Adapter
64.00	Pump shaft
64.08	Shaft sleeve
64.20	Key
64.24	Shear pin
70.00	Motor cover, pump side
70.18	Screw
70.20	Screw
73.00	Pump side ball bearing
76.00	Motor casing with winding
76.04	Cable gland
76.54	Terminal board, set
78.00	Shaft with rotor packet
81.00	Fan side ball bearing
82.00	Motor end shield, fan side
82.04	Compensating spring
82.08	Screw
88.00	Motor fan
90.00	Fan cover
90.04	Screw
94.00	Capacitor
94.04	Capacitor collar
98.00	Terminal box cover
98.04	Screw
98.08	Gasket

Changes reserved.

12. TROUBLESHOOTING



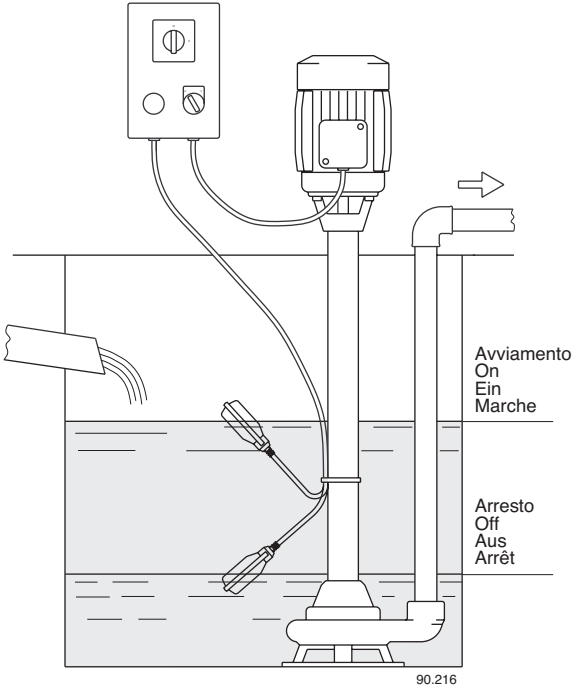
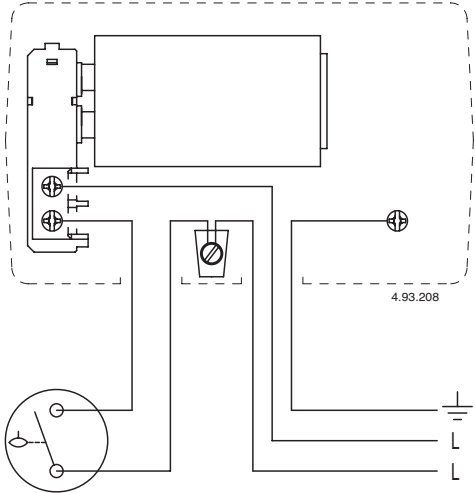
WARNING: Turn off the power supply before performing any operations.

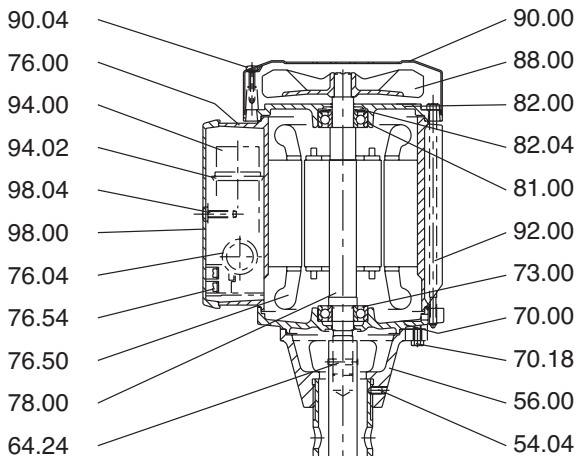
Do not allow the pump or motor to run when dry even for a short period.

Strictly follow the user instructions and if necessary contact an authorised service centre.

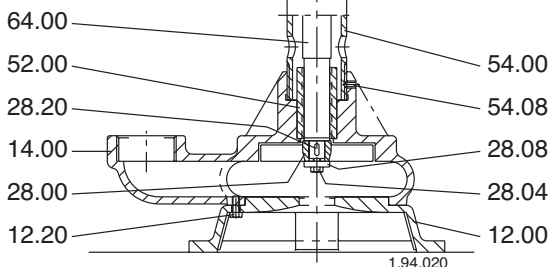
PROBLEM	PROBABLE CAUSES	POSSIBLE REMEDIES
1) The motor does not start	1a) Unsuitable power supply 1b) Incorrect electrical connections 1c) Engine overload protective device cuts in. 1d) Blown or defective fuses 1e) Shaft blocked 1f) Motor failed	1a) Check that the mains frequency and voltage are suitable. 1b) Connect the power supply cable correctly. Check the setting of the thermal overload protection. 1c) Check the power supply and make sure that the pump shaft is turning freely. Check the setting of the thermal overload protection. 1d) Replace the fuses, check points a) and c) 1e) See "Blocked pump" instruction booklet 1f) Repair or replace the engine.
2) Pump blocked	2a) Prolonged periods of inactivity . 2b) Presence of solid bodies in the impeller 2c) Bearings or bearing sleeve siezed	2a) Unblock the pump by using a screw driver to turn the relevant notch on the back of the shaft. 2b) Remove any solid foreign bodies inside the impeller 2c) Replace the bearings or bearing sleeve.
3) The pump functions but no water comes out	3a) Insufficient immersion depth 3b) Possible infiltration of air.	3a) Increase the immersion depth 3b) Increase the immersion depth
4) Insufficient flow	4a) Pipes and accessories with diameter too small 4b) Presence of deposits or solid bodies in the impeller 4c) Rotor deteriorated 4d) Worn rotor and pump case 4e) Gases dissolved in the water 4f) Excessive viscosity of the liquid pumped 4g) Incorrect direction of rotation	4a) Use pipes and accessories suitable for the specific application 4b) Clean the impeller and install a suction filter 4c) Replace the impeller 4d) Replace the impeller and the pump casing 4e) Perform the opening and closing manoeuvres through the feeder gate 4f) The pump is unsuitable 4g) Invert the electrical connections in the terminal board
5) Noise and vibrations from the pump	5a) Worn bearings or bearing sleeve 5b) Unbalanced power supply	5a) Replace the bearings or bearing sleeve 5b) Check that the mains voltage is right

Electrical diagram for single-phase pumps VALM, SCM with float switch.

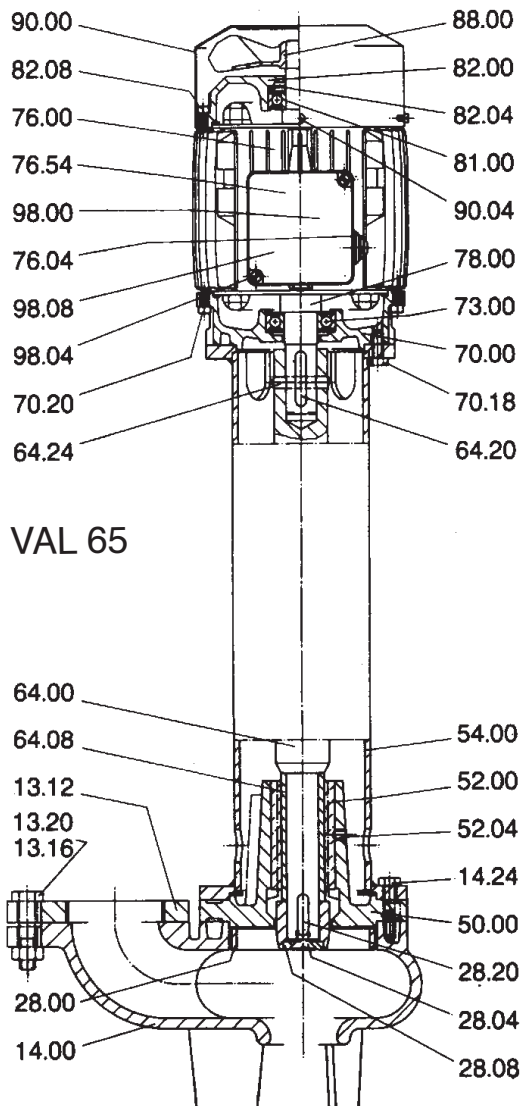


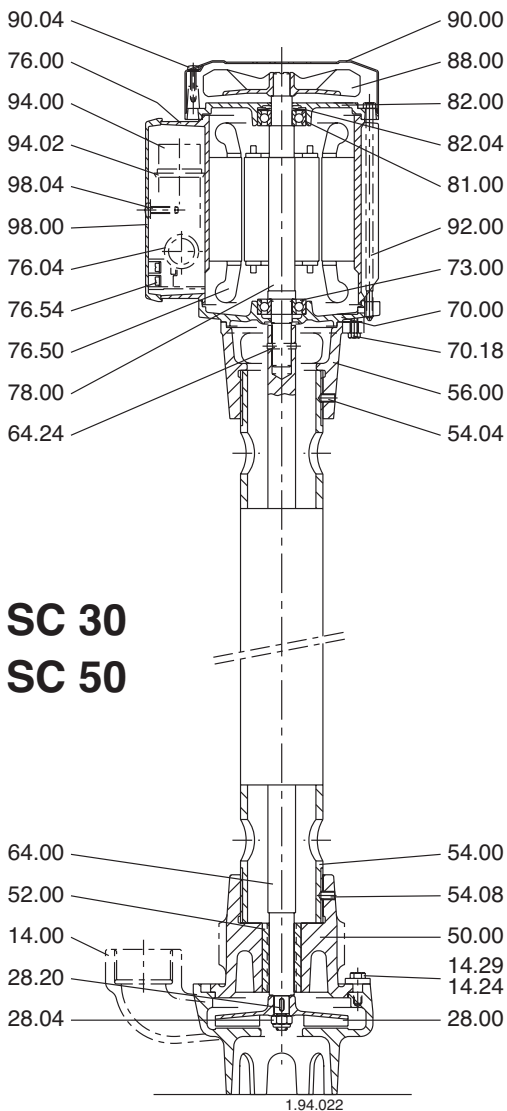


VAL 30



1.94.020





Minimum cross-sectional area of conductors

Tab. 1

TAB 1IEC 60335-1

Rated current of appliance A	Nominal cross-sectional area mm ²
>3 + ≤6	0,75
>6 + ≤10	1,0
>10 + ≤16	1,5
>16 + ≤25	2,5
>25 + ≤32	4
>32 + ≤40	6
>40 + ≤63	10



EC - Declaration of Conformity

Manufacturer Details

Tradename

Bedu Pompen BV

Address

Poort van Midden Gelderland Rood 10, 6666 LT, Heteren, Netherlands

Product Details

Product Name

Vertical sump pumps

Model (+series) Name

Val/SC Series

Applicable Standards Details

Directives

2006/42/EC (Machinery Directive)
2014/35/EU (Low Voltage Directive)
2014/30/EU (Electromagnetic compatibility)

Standards

EN-ISO 12100:2010
EN-IEC 60204-1:2006
EN 809+A1/C1

Additional information

No further details.

Declaration

We hereby declare under our sole responsibility that the product(s) mentioned above to which this declaration relates complies with the above mentioned standards and Directives.

Business Unit Manager: Issued Date:

01/10 2014

BEDU Pompen BV

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Website : www.bedu.eu

Marco Breunissen

Signature of representative(s)



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- Repair, maintenance and revision

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