

Wavelet 4R data logger

Installation and operating instructions



Wavelet 4R data logger
Installation and operating instructions
(all available languages)
<http://net.grundfos.com/qr/93225735>

Wavelet 4R data logger

English (GB)

Installation and operating instructions	4
---	---

English (GB) Installation and operating instructions

Original installation and operating instructions

Table of contents

1.	General information	4
1.1	Hazard statements	4
1.2	Notes	4
2.	Product introduction	5
2.1	Product description	5
3.	Receiving the product.	5
3.1	Scope of delivery	5
4.	Installation requirements	5
4.1	Location	5
4.2	Tools	5
5.	Mechanical installation	5
5.1	Connecting the pressure transmitter	5
5.2	Connecting the cable and the antenna	6
6.	Configuring the product	7
7.	Running a signal test	9
8.	Service	9
8.1	Replacing the battery	9
9.	Fault finding the product	9
10.	Technical data	10
10.1	Operating conditions	10
10.2	Electrical data	10
10.3	Dimensions and weights	10
10.4	Data and software	10
10.5	Connectivity	11
10.6	Cybersecurity	11
10.7	Certifications	11
11.	Disposing of the product	11
12.	Document quality feedback	11

1. General information



Read this document before you install the product. Installation and operation must comply with local regulations and accepted codes of good practice.

1.1 Hazard statements

The symbols and hazard statements below may appear in Grundfos installation and operating instructions, safety instructions and service instructions.

DANGER



Indicates a hazardous situation which, if not avoided, will result in death or serious personal injury.

WARNING



Indicates a hazardous situation which, if not avoided, could result in death or serious personal injury.

CAUTION



Indicates a hazardous situation which, if not avoided, could result in minor or moderate personal injury.

The hazard statements are structured in the following way:

SIGNAL WORD

Description of the hazard



Consequence of ignoring the warning

- Action to avoid the hazard.

1.2 Notes

The symbols and notes below may appear in Grundfos installation and operating instructions, safety instructions and service instructions.



Observe these instructions for explosion-proof products.



A blue or grey circle with a white graphical symbol indicates that an action must be taken.



A red or grey circle with a diagonal bar, possibly with a black graphical symbol, indicates that an action must not be taken or must be stopped.



If these instructions are not observed, it may result in malfunction or damage to the equipment.



Tips and advice that make the work easier.

2. Product introduction

2.1 Product description

Wavelet 4R data logger is a key component in the Grundfos Demand Driven Distribution system.

The connected pressure transmitter transmits a signal to the data logger, which logs and sends data to Grundfos Connect. Based on the data received from Grundfos Connect, the controller adjusts the performance of the pumps.

3. Receiving the product

3.1 Scope of delivery

The box contains the following items:

- data logger
- built-in SIM card
- magnetic activator key
- three meter long, PVC 8X22AWG shielded cable with M12 A-coded 8 pin female connector
- antenna.

4. Installation requirements

4.1 Location

The data logger can be placed indoors, outdoors, and underground.

Install the product in a location that meets the following requirements:

- Make sure that the ambient temperature is within the limits.
- The product must be easily accessible.
- The antenna can provide adequate signal quality.

4.2 Tools

You may need the following tools to install the product:

- rotary hammer,
- electric screwdriver, Philips PH1 bit.

5. Mechanical installation

Prerequisites:

Set up and test the entire system (data logger, pressure transmitter, and antenna connection) before going to the field for installation.

- Pressure transmitter is not supplied with the product, you have to purchase it separately.



- Use a pressure transmitter in the range of 0-10 bar, for example, from Danfoss.
- SIM card is already mounted inside the data logger. If you need to replace the SIM card, see Wavelet 4R's documentation:

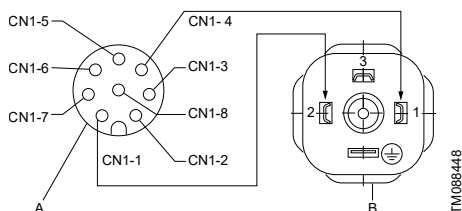
<https://www.ayyeka.com/en/knowledge/replacing-wavelet-sim-card>

5.1 Connecting the pressure transmitter

A pressure transmitter in the range of 0-10 bar, for example, Danfoss MBS3000 must be used together with the Wavelet 4R data logger.

The data logger logs the pressure every 15 minutes, creating 96 readings per day. These readings are transmitted to the CU 354 controller via Grundfos Connect (GiC), and the data is used to set the discharge pressure of the booster system.

1. Connect the provided cable to the pressure transmitter.

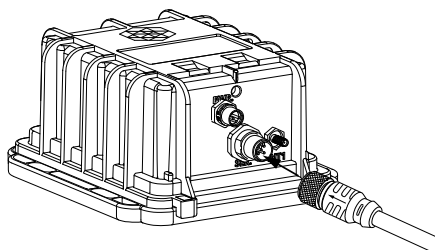


Pos.	Description
A	Shielded cable
B	Pressure transmitter
CN1-1	White wire, 4-20 mA input signal
CN1-4	Yellow wire, +12 V supply for the pressure transmitter
1	Power supply
2	Common

TM088448

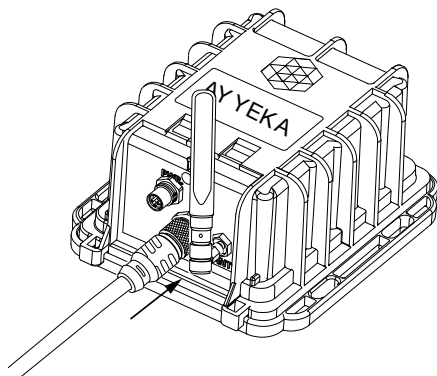
5.2 Connecting the cable and the antenna

1. Use the M12 8 pin connector, which is already attached to the cable, to connect the cable to the data logger.



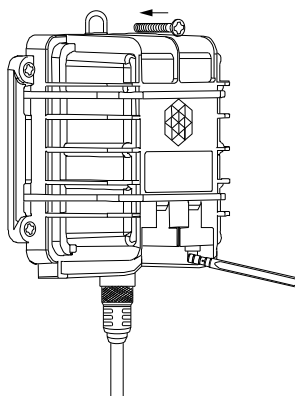
TM088008

2. Connect the antenna to the data logger.



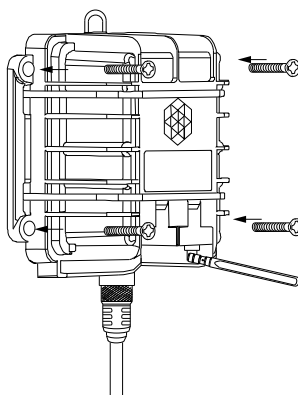
TM088009

3. Secure the data logger on a wall using one or four screws.



TM088010

Securing with one screw



TM088011

Securing with four screws

6. Configuring the product

Prerequisites:

- Install AyyekaGo app on your mobile device, and make sure that you have access to the application.

App Store



TM0088012

Google Play



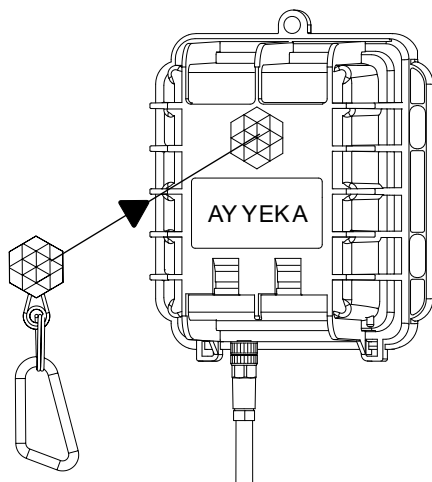
TM0088013

- You must subscribe to the Grundfos Connect (GiC) service. For more information, see PN 92711156 in Grundfos Product Center.



The AyyekaGo app does not collect or analyze data.

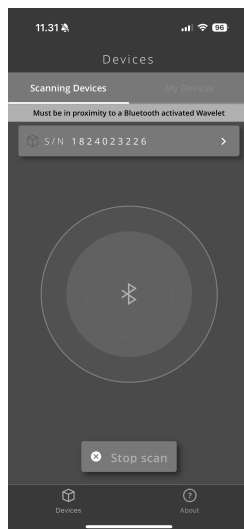
1. Open the AyyekaGO app on your mobile device.
The app uses Bluetooth to scan for any Wavelet 4R data loggers in proximity.
2. To activate the data logger, place the magnetic key or any other magnet for 3 seconds on the Ayyeka logo on the front of the Wavelet 4R data logger.



TM0089305

3. The AyyekaGo app shows the serial number of the Wavelet 4R data logger.

If the serial number is not shown in the AyyekaGo app, do a re-scan.

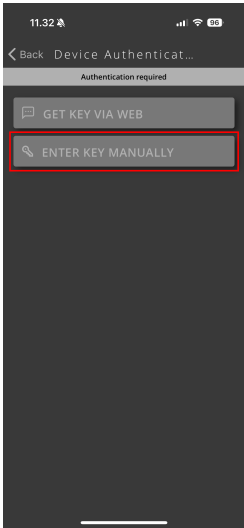


TM0089281

4. In the AyyekaGo app, press the displayed serial number, then enter the authentication mobile pair key manually.

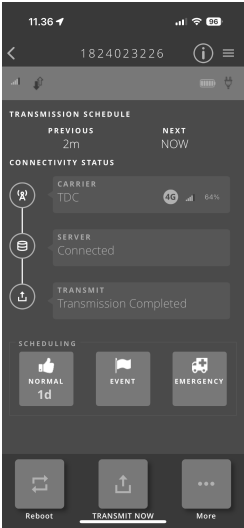


The authentication mobile pair key is delivered together with the Wavelet 4R data logger. It consists of 8 numbers and/or letters.

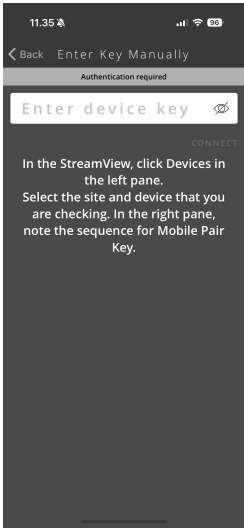


TM089282

The Wavelet 4R data logger is connected to the cellular network and registered in Grundfos Connect (GiC).



TM089284

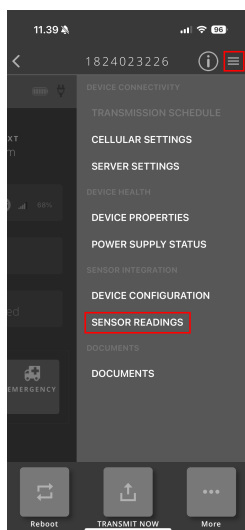


TM089283

7. Running a signal test

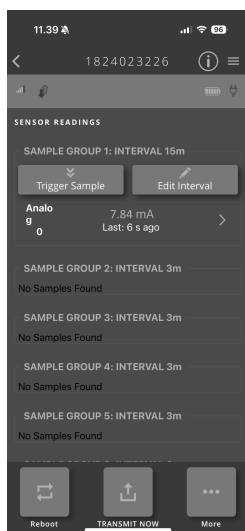
Check the pressure transmitter signal as follows:

1. Press the menu icon in the top right corner, then select **SENSOR READINGS**.



TM089285

The actual sensor signal is shown on the display.



TM089286

By default, the value of the pressure transmitter is shown in mA.

Use the following formula to convert the value to bar:

$$(\text{actual reading} - 4) \times 0.625$$

Example:

The pressure value in bar is the following in the previous example:

$$(7.84 - 4) \times 0.625 = 2.4 \text{ bar}$$

8. Service

8.1 Replacing the battery

1. To replace the battery, follow the instructions in Wavelet 4R's documentation:

<https://www.ayyeka.com/en/knowledge/replacing-the-battery>

9. Fault finding the product

WARNING

Electric shock

Death or serious personal injury



- Switch off the power supply before you start any work on the product.

1. See Wavelet 4R's documentation for troubleshooting information:

<https://www.ayyeka.com/en/knowledge/wavelet-devices#troubleshooting>

10. Technical data

10.1 Operating conditions

Enclosure class

IP68 / NEMA 6P.

Material

Polycarbonate with ABS (UL 94V-0 and UV-resistant).

Operating temperature

-40 to +80 °C (-40 to 176 °F).

Storage temperature

-40 to +80 °C (-40 to 176 °F).

10.2 Electrical data

Power

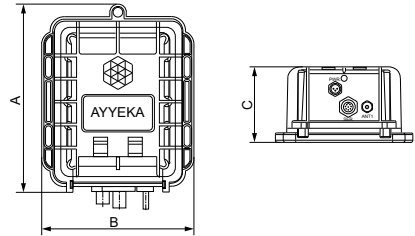
Primary power supply	Internal lithium battery (field-replaceable and non-rechargeable) 3.9 VDC, 3 A
Internal battery capacity	32 Ah
Battery life	Up to 10 years (usage dependent)
Battery life notifications	Included
External power	6-24 VDC automatic power source switching

Sensor inputs

Sensor ports	1 port, which supports up to 4 sensors using cable splitters
Sensor connection	Wired with M12 connectors
Serial interfaces	RS485 or RS232 or SDI-12
Serial protocols	Modbus, SDI-12, ASCII Text, Custom
Serial inputs	16
Analog inputs	2 (4-20 mA, 0-24 V)
Digital inputs	2 dry contact, open drain pulse counting: up to 2 at 39 Hz max pulse frequency
Digital outputs	2 at 0 V / 2.8 V
Sensor power supply output	200 mA, 12 V or 3.6 V

10.3 Dimensions and weights

Dimensions



TM088007

Pos.	Description
A	13.2 cm (5.2 inch)
B	16.5 cm (6.5 inch)
C	7.3 cm (2.9 inch)

Weight

0.9 kg (2 lbs).

10.4 Data and software

Data hosting	Cloud or on-premises
Cybersecurity	TLS 1.3 protocol (AES-256)
Software integration	REST API, CSV
SCADA integration	CSV, DNP3, OPC-UA
Ayyeka IoT platform software	Web-based from desktop, tablet, and mobile
AyyekaGo mobile app	iOS, Android
Data export options	CSV, FTP
Device memory	16 MB
Data communication	Bidirectional
Alarm threshold	Up to 4 per data stream
Alert notification	SMS, email, voice
System health check	Included

10.5 Connectivity

Cellular/IoT communication	WA4000-31 (US) - CAT-M WA4000-82 (Global) - CAT-M, NB-IoT, 2G WA4000-61-E (Global) - 4G, 3G, 2G
SIM card	Single SIM slot, 4FF
Cellular roaming	Global multi-network SIM(s) Data plan included for up to 180+ countries
Configuration and upgrades	Bluetooth Low Energy (BLE), remotely (over-the-air), USB connection
Data transmission	Periodic, data-dependent
Antenna	External antenna

10.6 Cybersecurity

Data in transit security	TLS 1.3
Device authentication	Hardware based
Bluetooth	ECC key exchange, AES-256 encryption
Firmware or security updates	Full over-the-air (FOTA)
Physical access	Restricted to diagnostics only

10.7 Certifications

Safety	EN 61010-1 2010 IEC 61010-1
FCC	FCC Part 15 Subpart B
EMC	EN 301 489-1 V2.1.1 2017 EN 301 489-7 V1.3.1 2005
Spurious emissions	EN 301 511 V12.5.1 2017
Radiated emissions	EN 301 908-1 V11.1.1 2016
IP68 / NEMA 6P	EN 60529:1992+A2:2013 IEC 60529:1989/AM1:1999

11. Disposing of the product

This product or parts of it must be disposed of in an environmentally sound way.

1. Use the public or private waste collection service.
2. If this is not possible, contact the nearest Grundfos company or service workshop.
3. Dispose of the waste battery through the national collective schemes. If in doubt, contact your local Grundfos company.



The crossed-out wheeled bin symbol on a product means that it must be disposed of separately from household waste. When a product marked with this symbol reaches its end of life, take it to a collection point designated by the local waste disposal authorities. The separate collection and recycling of such products will help protect the environment and human health.

See also end-of-life information at www.grundfos.com/product-recycling.

12. Document quality feedback

To provide feedback about this document, use your smart device to scan the QR code.



[Click here to submit your feedback](#)

FEEDBACK3225735

Argentina

Bombas GRUNDFOS de Argentina S.A.
Ruta Panamericana km. 37.500 Industrias
1619 - Garin Pcia. de B.A.
Tel.: +54-3327 414 444
Fax: +54-3327 45 3190

Australia

GRUNDFOS Pumps Pty. Ltd.
P.O. Box 2040
Regency Park
South Australia 5942
Tel.: +61-8-8461-6111
Fax: +61-8-8340-0155

Austria

GRUNDFOS Pumpen Vertrieb
Ges.m.b.H.
Grundfosstraße 2
A-5082 Grödig/Salzburg
Tel.: +43-6246-883-0
Fax: +43-6246-883-30

Belgium

N.V. GRUNDFOS Bellux S.A.
Boomsesteenweg 81-83
B-2630 Aartselaar
Tel.: +32-3-870 7300
Fax: +32-3-870 7301

Bosnia and Herzegovina

GRUNDFOS Sarajevo
Zmaja od Bosne 7-7A
BiH-71000 Sarajevo
Tel.: +387 33 592 480
Fax: +387 33 590 465
www.ba.grundfos.com
E-mail: grundfos@bih.net.ba

Brazil

BOMBAS GRUNDFOS DO BRASIL
Av. Humberto de Alencar Castelo
Branco, 630
CEP 09850 - 300
São Bernardo do Campo - SP
Tel.: +55-11 4393 5533
Fax: +55-11 4343 5015

Bulgaria

Grundfos Bulgaria EOOD
Slatina District
Iztocna Tangenta street no. 100
BG - 1592 Sofia
Tel.: +359 2 49 22 200
Fax: +359 2 49 22 201
E-mail: bulgaria@grundfos.bg

Canada

GRUNDFOS Canada inc.
2941 Brighton Road
Oakville, Ontario
L6H 6C9
Tel.: +1-905 829 9533
Fax: +1-905 829 9512

China

GRUNDFOS Pumps (Shanghai) Co. Ltd.
10F The Hub, No. 33 Suhong Road
Minhang District
Shanghai 201106 PRC
Tel.: +86 21 612 252 22
Fax: +86 21 612 253 33

Colombia

GRUNDFOS Colombia S.A.S.
Km 1.5 vía Siberia-Cota Conj. Potrero
Chico,
Parque Empresarial Arcos de Cota Bod.
1A.
Cota, Cundinamarca
Tel.: +57(1)-2913444
Fax: +57(1)-8764586

Croatia

GRUNDFOS CROATIA d.o.o.
Buzinski prilaz 38, Buzin
HR-10010 Zagreb
Tel.: +385 1 6595 400
Fax: +385 1 6595 499
www.hr.grundfos.com

Czech Republic

GRUNDFOS Sales Czechia and Slovakia
s.r.o.
Čajkovského 21
779 00 Olomouc
Tel.: +420-585-716 111

Denmark

GRUNDFOS DK A/S
Martin Bachs Vej 3
DK-8850 Bjerringbro
Tel.: +45-87 50 50 50
Fax: +45-87 50 51 51
E-mail: info_GDK@grundfos.com
www.grundfos.com/DK

Estonia

GRUNDFOS Pumps Eesti OÜ
Peterburi tee 92G
11415 Tallinn
Tel.: + 372 606 1690
Fax: + 372 606 1691

Finland

OY GRUNDFOS Pumput AB
Trukkikuja 1
FI-01360 Vantaa
Tel.: +358-(0) 207 889 500

France

Pompes GRUNDFOS Distribution S.A.
Parc d'Activités de Chesnes
57, rue de Malacombe
F-38290 St. Quentin Fallavier (Lyon)
Tel.: +33-4 74 82 15 15
Fax: +33-4 74 94 10 51

Germany

GRUNDFOS GMBH
Schlüterstr. 33
40699 Erkrath
Tel.: +49-(0) 211 929 69-0
Fax: +49-(0) 211 929 69-3799
E-mail: infoservice@grundfos.de
Service in Deutschland:
kundendienst@grundfos.de

Greece

GRUNDFOS Hellas A.E.B.E.
20th km. Athinon-Markopoulou Av.
P.O. Box 71
GR-19002 Peania
Tel.: +0030-210-66 83 400
Fax: +0030-210-66 46 273

Hong Kong

GRUNDFOS Pumps (Hong Kong) Ltd.
Unit 1, Ground floor, Siu Wai Industrial
Centre
29-33 Wing Hong Street & 68 King Lam
Street, Cheung Sha Wan
Kowloon
Tel.: +852-27861706 / 27861741
Fax: +852-27858664

Hungary

GRUNDFOS South East Europe Kft.
Tópark u. 8
H-2045 Törökbálint
Tel.: +36-23 511 110
Fax: +36-23 511 111

India

GRUNDFOS Pumps India Private
Limited
118 Old Mahabalipuram Road
Thoraiakkam
Chennai 600 097
Tel.: +91-44 2496 6800

Indonesia

PT GRUNDFOS Pompa
Graha intirub Lt. 2 & 3
Jln. Cililitan Besar No.454. Makasar,
Jakarta Timur
ID-Jakarta 13650
Tel.: +62 21-469-51900
Fax: +62 21-460 6910 / 460 6901

Ireland

GRUNDFOS (Ireland) Ltd.
Unit A, Merrywell Business Park
Ballymount Road Lower
Dublin 12
Tel.: +353-1-4089 800
Fax: +353-1-4089 830

Italy

GRUNDFOS Pompe Italia S.r.l.
Via Gran Sasso 4
I-20060 Truccazzano (Milano)
Tel.: +39-02-95838112
Fax: +39-02-95309290 / 95838461

Japan

GRUNDFOS Pumps K.K.
1-2-3, Shin-Miyakoda, Kita-ku
Hamamatsu
431-2103 Japan
Tel.: +81 53 428 4760
Fax: +81 53 428 5005

Kazakhstan

Grundfos Kazakhstan LLP
7' Kyz-Zhibek Str., Kok-Tobe micr.
KZ-050020 Almaty Kazakhstan
Tel.: +7 (727) 227-98-55/56

Korea

GRUNDFOS Pumps Korea Ltd.
6th Floor, Aju Building 679-5
Yeoksam-dong, Kangnam-ku, 135-916
Seoul, Korea
Tel.: +82-2-5317 600
Fax: +82-2-5633 725

Latvia

SIA GRUNDFOS Pumps Latvia
Deglava biznesa centrs
Augusta Deglava ielā 60
LV-1035, Rīga,
Tel.: + 371 714 9640, 7 149 641
Fax: + 371 914 9646

Lithuania

GRUNDFOS Pumps UAB
Smolensko g. 6
LT-03201 Vilnius
Tel.: +370 52 395 430
Fax: +370 52 395 431

Malaysia

GRUNDFOS Pumps Sdn. Bhd.
7 Jalan Peguam UI/25
Glenmarie Industrial Park
40150 Shah Alam, Selangor
Tel.: +60-3-5569 2922
Fax: +60-3-5569 2866

Mexico

Bombas GRUNDFOS de México
S.A. de C.V.
Boulevard TLC No. 15
Parque industrial Stiva Aeropuerto
Apodaca, N.L. 66600
Tel.: +52-81-8144 4000
Fax: +52-81-8144 4010

Netherlands

GRUNDFOS Netherlands
Veluwezoom 35
1326 AE Almere
Postbus 22015
1302 CA ALMERE
Tel.: +31-88-478 6336
Fax: +31-88-478 6332
E-mail: info_gnl@grundfos.com

New Zealand

GRUNDFOS Pumps NZ Ltd.
17 Beatrice Tinsley Crescent
North Harbour Industrial Estate
Albany, Auckland
Tel.: +64-9-415 3240
Fax: +64-9-415 3250

Norway

GRUNDFOS Pumper A/S
Strømsveien 344
Postboks 235, Leirdal
N-1011 Oslo
Tel.: +47-22 90 47 00
Fax: +47-22 32 21 50

Poland

GRUNDFOS Pompy Sp. z o.o.
ul. Klonowa 23
Baranowo k. Poznań
PL-62-081 Przeźmierowo
Tel.: (+48-61) 650 13 00
Fax: (+48-61) 650 13 50

Portugal

Bombas GRUNDFOS Portugal, S.A.
Rua Calvet de Magalhães, 241
Apartado 1079
P-2770-153 Paço de Arcos
Tel.: +351-21-440 76 00
Fax: +351-21-440 76 90

Romania

GRUNDFOS Pompe România SRL
S-PARK BUSINESS CENTER, Clădirea
A2, etaj 2
Str. Tipografilor, Nr. 11-15, Sector 1, Cod
013714
București, Romania
Tel.: 004 021 2004 100
E-mail: romania@grundfos.ro

Serbia

Grundfos Srbija d.o.o.
Ormladinskih brigada 90b
11070 Novi Beograd
Tel.: +381 11 2258 740
Fax: +381 11 2281 769
www.rs.grundfos.com

Singapore

GRUNDFOS (Singapore) Pte. Ltd.
25 Jalan Tukang
Singapore 619264
Tel.: +65-6681 9688
Fax: +65-6681 9689

Slovakia

GRUNDFOS s.r.o.
Prievozská 4D 821 09 BRATISLAVA
Tel.: +421 2 5020 1426
sk.grundfos.com

Slovenia

GRUNDFOS LJUBLJANA, d.o.o.
Leskoškova 9e, 1122 Ljubljana
Tel.: +386 (0) 1 568 06 10
Fax: +386 (0) 1 568 06 19
E-mail: tehnika-si@grundfos.com

South Africa

GRUNDFOS (PTY) LTD
16 Lascelles Drive, Meadowbrook Estate
1609 Germiston, Johannesburg
Tel.: (+27) 10 248 6000
Fax: (+27) 10 248 6002
E-mail: lgradidge@grundfos.com

Spain

Bombas GRUNDFOS España S.A.
Camino de la Fuentequilla, s/n
E-28110 Algete (Madrid)
Tel.: +34-91-848 8800
Fax: +34-91-628 0465

Sweden

GRUNDFOS AB
Box 333 (Lunnagårdsgatan 6)
431 24 Mölndal
Tel.: +46 31 332 23 000
Fax: +46 31 331 94 60

Switzerland

GRUNDFOS Pumpen AG
Bruggacherstrasse 10
CH-8117 Fällanden/ZH
Tel.: +41-44-806 8111
Fax: +41-44-806 8115

Taiwan

GRUNDFOS Pumps (Taiwan) Ltd.
7 Floor, 219 Min-Chuan Road
Taichung, Taiwan, R.O.C.
Tel.: +886-4-2305 0868
Fax: +886-4-2305 0878

Thailand

GRUNDFOS (Thailand) Ltd.
92 Chaloe Phrakiat Rama 9 Road
Dokmai, Pravej, Bangkok 10250
Tel.: +66-2-725 8999
Fax: +66-2-725 8998

Turkey

GRUNDFOS POMPA San. ve Tic. Ltd.
Stl.
Gebze Organize Sanayi Bölgesi
İhsan dede Caddesi
2. yol 200, Sokak No. 204
41490 Gebze/ Kocaeli
Tel.: +90 - 262-679 7979
Fax: +90 - 262-679 7905
E-mail: satis@grundfos.com

Ukraine

ТОВ "ГРУНДФОС УКРАЇНА"
Бізнес Центр Європа
Столичне шосе, 103
м. Київ, 03131, Україна
Tel.: (+38 044) 237 04 00
Fax: (+38 044) 237 04 01
E-mail: ukraine@grundfos.com

United Arab Emirates

GRUNDFOS Gulf Distribution
P.O. Box 16768
Jebel Ali Free Zone, Dubai
Tel.: +971 4 8815 166
Fax: +971 4 8815 136

United Kingdom

GRUNDFOS Pumps Ltd.
Grovebury Road
Leighton Buzzard/Beds. LU7 4TL
Tel.: +44-1525-850000
Fax: +44-1525-850011

U.S.A.

Global Headquarters for WU
856 Koomey Road
Brookshire, Texas 77423 USA
Phone: +1-630-236-5500

Uzbekistan

Grundfos Tashkent, Uzbekistan
The Representative Office of Grundfos
Kazakhstan in Uzbekistan
38a, Oybek street, Tashkent
Tel.: (+998) 71 150 3290 / 71 150 3291
Fax: (+998) 71 150 3292

93225735 04.2025

ECM: 1421675
