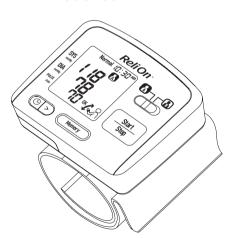
# Reli On

# **INSTRUCTION MANUAL**

# BP300W Wrist Blood Pressure Monitor

Model 6021RELN2



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## INTRODUCTION

Thank you for purchasing the ReliOn<sup>-</sup> BP300W Wrist Blood Pressure Monitor, Model # 6021RELN2.

Staple your purchase receipt here	
SERIAL NUMBER:	
DATE PURCHASED:	
Fill in for future reference.	

The monitor is compact and easy-to-use at home, at work, and during travel. Perfect for people who frequently monitor their own blood pressure.

Your new digital blood pressure monitor uses the oscillometric method of blood pressure measurement. This means the monitor detects your blood's movement through your brachial artery and converts the movements into a digital reading. An oscillometric monitor does not need a stethoscope so the monitor is simple to use. Clinical research has proven a direct relationship between blood pressure in the wrist

and blood pressure in the arm. Changes in wrist blood pressure reflect changes in arm blood pressure because the arteries in the wrist and the arm are close to each other. Frequently measuring the blood pressure in your wrist will provide your physician with an accurate indication of changes in your blood pressure.

The 6021RELN2 comes with the following components:

- Monitor 2 "AAA" Alkaline Batteries
- Instruction Manual Quick Start Guide

Please read this instruction manual thoroughly before using the unit. Please keep for future reference.

For specific information about your own blood pressure, CONSULT YOUR DOCTOR.

## SAVE THESE INSTRUCTIONS

## **SAFETY INFORMATION**

#### INTENDED USE

This device is a digital monitor intended for use in measuring blood pressure and pulse rate in adult patient population. The device detects the appearance of irregular heartbeats during measurement and gives a warning signal with the readings.

To assure the correct use of the product, basic safety measures should always be followed including the warnings and cautions listed in this instruction manual.

SAFETY SYMBOLS USED IN THIS INSTRUCTION MANUAL			
▲ WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.			
<b>⚠</b> CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury to the user or patient or damage to the equipment or other property.		

#### GENERAL USAGE

- ▲ DO NOT adjust medication based on measurement values from this blood pressure monitor. Take medication as prescribed by your physician. Only a physician is qualified to diagnose and treat High Blood Pressure.
- ⚠ The monitor is not intended to be a diagnostic device.
- ▲ Consult your physician before using the device for any of the following conditions: common arrhythmias such as atrial or ventricular premature beats or atrial fibrillation, arterial sclerosis, poor perfusion, diabetes, age, pregnancy, pre-eclampsia, renal diseases.
  - Note that PATIENT motion, trembling, shivering may affect the measurement value.
- ⚠ Do not use the device on the injured wrist or the wrist under medical treatment.
- ⚠ Consult your physician before using the device on the wrist with an arterio-venous (A-V) shunt.
- ▲ Do not use the device with other medical electrical (ME) equipment simultaneously.
- ▲ Do not use the device in the area of HF surgical equipment, MRI, or CT scanner, or in an oxygen rich environment.
- A Contains small parts that may cause a choking hazard if swallowed by infants and small children.

## SAFETY INFORMATION

#### GENERAL USAGE

- ⚠ Always consult your physician. Self-diagnosis of measurement values and self-treatment are dangerous.
- ⚠ Consult your physician before using the device for any of the following conditions:
  - If you have had a mastectomy.
  - If you have a condition that may compromise circulation, you may get an inaccurate reading with this device.
  - People with severe blood flow problems or blood disorders as cuff inflation can cause bruising.
- ⚠ Do not take measurements more than necessary. It may cause bruising due to blood flow interference.
- ⚠ Do not use this device on infants or persons who cannot express their intentions.
- ⚠ Do not use the device for any purpose other than measuring blood pressure.
- ⚠ Do not use a cellular phone near the device. It may result in an operational failure.
- ⚠ Use only Omron authorized parts and accessories. Parts and accessories not approved for use with the device may damage the unit.
- ⚠ Dispose of the device, components and optional accessories according to applicable local regulations. Unlawful disposal may cause environmental pollution.

#### BATTERY USAGE

- ⚠ Do not insert the batteries with their polarities incorrectly aligned.
- ⚠ Use only 2 "AAA" Alkaline batteries with this device. Do not use other types of batteries. Do not use new and used batteries together.
- ⚠ Remove the batteries if the device will not be used for three months or more.
- ⚠ If battery fluid should get in your eyes, immediately rinse with plenty of clean water. Contact a physician immediately.

## **SAFETY INFORMATION**

### GENERAL PRECAUTIONS

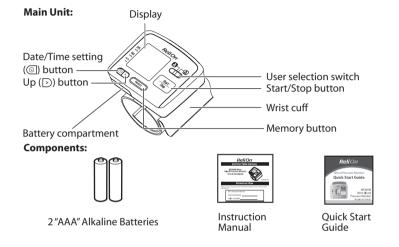
- Store the device and the components in a clean, safe location.
- Do not drop the monitor or subject device to strong shocks or vibrations.
- Do not submerge the device or any of the components in water.
- Do not use the device outside the specified environment. It may cause an inaccurate reading.

## **BEFORE TAKING A MEASUREMENT**

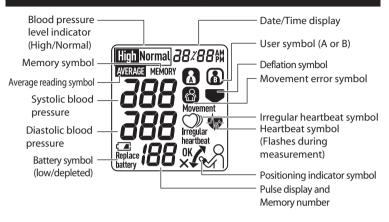
To ensure a reliable reading follow these recommendations:

- Avoid eating, drinking alcohol, smoking, exercising, and bathing for 30 minutes before taking a measurement. Rest for at least 5 minutes before taking the measurement.
- 2. Stress raises blood pressure. Avoid taking measurements during stressful times.
- 3. The cuff can be applied to your left or right wrist.
- 4. Measurements should be taken in a quiet place.
- 5. Position the unit at heart level throughout the measurement.
- 6. Remain still and do not talk during the measurement.
- 7. Keep a record of your blood pressure and pulse readings for your physician. A single measurement does not provide an accurate indication of your true blood pressure. You need to take and record several readings over a period of time. Try to measure your blood pressure at the same time each day for consistency.

# **KNOW YOUR UNIT**



# **UNIT DISPLAY**



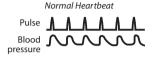
## **DISPLAY SYMBOLS**

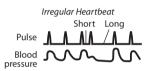
# IRREGULAR HEARTBEAT SYMBOL ( Integrater )

When the monitor detects an irregular rhythm two or more times during the measurement, the Irregular Heartbeat Symbol will appear on the display with the measurement values.

An irregular heartbeat rhythm is defined as a rhythm that varies by 25% less or 25% more than the average rhythm detected while the monitor is measuring the systolic and diastolic blood pressure.

If the irregular heartbeat symbol displays with your measurement values, we recommend you consult your physician. Follow the directions of your doctor.





# MOVEMENT ERROR SYMBOL ( Movement )

The Movement Error Symbol is displayed if you move your body during the measurement. Please remove the wrist cuff, and wait 2-3 minutes. Re-apply the wrist cuff and take another measurement.

## AVERAGE READING SYMBOL (AVERAGE MEMORY)

The Average Reading Symbol is displayed when you press and hold the Memory button for more than 3 seconds. The most recent average reading appears on the display screen.

## HEARTBEAT SYMBOL (🏶)

The Heartbeat symbol flashes on the display at every heartbeat during the measurement.

## BLOOD PRESSURE LEVEL INDICATOR (High Normal)

If your Systolic Blood Pressure is 135 mmHg or above and/or the Diastolic Blood Pressure is 85 mmHg or above, the High blood pressure level indicator (High) will display when the measurement value is displayed. If the measurements are within the standard range, the Normal blood pressure level indicator (Normal) will display.



## **DISPLAY SYMBOLS**

# **2013** ESH/ESC Guidelines for the management of arterial hypertension Definitions of hypertension by office and home blood pressure levels

	Office	Home
Systolic Blood Pressure	≥ 140 mmHg	≥ 135 mmHg
Diastolic Blood Pressure	≥ 90 mmHg	≥ 85 mmHg

These are from statistical values for blood pressure.

## **BATTERY INSTALLATION**

 Press the indicator on two sides of the battery cover and slide the cover off in the direction of the arrow.



Install 2 "AAA" size batteries so the + (positive) and

 (negative) polarities match the polarities of the battery compartment as indicated.



3. Replace the battery cover.

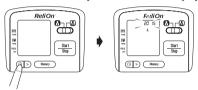


- - Turn the unit off before replacing the batteries. If the batteries are removed while the unit is still on, the date and time will be reset to that of the previous use. The measurement values are not deleted.
  - When the batteries are replaced, you may need to reset the date and time. If "-:--" appears on the display, refer to "Setting the Date and Time".
  - The batteries included with the device may have a shorter life.

## SETTING THE DATE AND TIME

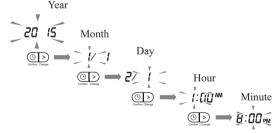
Set the monitor to the correct date and time before taking a measurement for the first time or after replacing the batteries.

1. Press and hold the button until the year flashes on the display.



- 2. Press the  $\bigcirc$  button to advance by one year.
  - The year can be set between 2015 and 2045.
  - When the display reaches 2045, it will return to 2015.

**NOTE:** Press and hold the button to increase the date and time values faster.



4. After setting the correct minute, press the button to confirm the date and time setting and start to set the positioning indicator.

NOTE: Refer to the "Setting the Positioning Indicator" to set the positioning indicator.

## SETTING THE POSITIONING INDICATOR

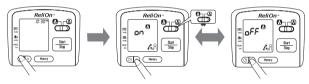
The monitor has a built-in positioning indicator that is used as an aid in determining if the monitor is at the correct height. When using this positioning indicator, the distance from the top of your seat measuring to the top of the table you are sitting at, should be  $12\pm 2$  inches ( $30\pm 5$  cm). If the distance measured between the top of your seat and table do not fall within this parameter, please correct your seat or table height. If you are unable to make any seat or table adjustments, please turn-off the position sensor and position your wrist at heart-level by yourself.

#### SETTING THE POSITIONING INDICATOR

After the time setting, press the button to set the positioning indicator.

- 1. Select the user ID (A or B).
- Press the 
   button to select the positioning indicator "on", or "oFF".

   NOTE: The default setting is "on". The positioning indicator setting is just for the user you select.



on: After the positioning indicator ( ( ) lights for more than 2 seconds, or the positioning indicator symbol ( ( ) blinks for more than 5 seconds, measurement starts automatically, even though the monitor is not in the proper position.

The monitor was in proper position during the measurement, of symbol is displayed with the measurement values.

The monitor was not in the proper position, \* symbol is displayed with the measurement values.

- oFF: Measurement starts without the positioning indicator.
- 3. Press the Start/Stop to store the setting.

## **APPLYING THE WRIST CUFF**

#### APPLYING THE CUFF ON THE LEFT WRIST

- Roll up sleeve. Make sure your sleeve is not rolled up too tightly on your arm. This may constrict the flow of blood in your arm.
- Put your arm through the cuff loop. Your palm should face upward. The blood pressure monitor should be facing straight up.



- Position the cuff leaving a clearance of approximately 1/2 inch (1-2 cm) between the cuff and the bottom of your palm.
- 4. Wrap the wrist cuff around your wrist. Do not apply over clothing.



**NOTE:** Make sure the wrist cuff does not cover the protruding part of the wrist bone on the outside of the wrist.



### APPLYING THE CUFF ON THE RIGHT WRIST

When taking a measurement using the right wrist position the cuff as shown in the illustration.



## **TAKING A MEASUREMENT**

The monitor is designed to store the blood pressure and the pulse rate in the memory for two people (user A or user B) every time a measurement is completed.

 Sit comfortably with the elbow of the arm being measured resting on a table and elevate cuff wrist to heart level.



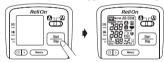








- 2. Select the user ID (A or B).
- 3. Press the Start/Stop button. All symbols appear on the display.



The monitor has a built-in positioning indicator that is used as an aid in determining if the monitor is at the correct height. Due to difference in individual size and physique, this feature may not be helpful in all cases and you may wish to turn off this feature. If you feel the position of the wrist according to positioning indicator's guidance does NOT match your heart height, please turn off this feature.

For more information on setting the built-in positioning indicator, please refer to the "Setting the Positioning Indicator".

**NOTE:** Even if the device is not positioned properly, after 5 seconds the monitor will still start the measurement and the wrist cuff will start to inflate.

## **TAKING A MEASUREMENT**

The monitor is in proper position.



The monitor is higher than the heart and needs to be lowered.



The monitor is lower than the heart and needs to be raised.











As the cuff inflates, the monitor automatically determines your ideal inflation level. This monitor detects your blood pressure and pulse rate during inflation. The Heartbeat Symbol ( ) flashes at every heartbeat.

Remain still and do not move until the entire measurement process is completed.



- 4. Press the Start/Stop button to turn the monitor off.
  - **NOTES:** The monitor will automatically turn off after 2 minutes.
    - Wait 2-3 minutes between measurements. The wait time allows the arteries to return to the condition prior to taking the blood pressure measurement.
       You may need to increase the wait time depending on your individual physiological characteristics.



## **USING THE MEMORY FUNCTION**

The monitor automatically stores the results up to 90 sets for each user (A and B). It can also calculate an average reading based on the last 3 measurement values taken within 10 minutes.

### TO VIEW THE MEASUREMENT VALUES STORED IN MEMORY

- 1. Select the user ID (A or B).
- 2. Press the Memory button to display the set of measurement values.
- 3. Press the Memory button repeatedly to view the values from the more recent to the oldest.



- **NOTES:** The memory number appears for a second before the pulse rate is displayed. The newest set is number "1".
  - If the positioning indicator is set to "on" before the measurement, the positioning indicator symbol displayed with the measurement values.
  - If the memory is full, the monitor will delete its oldest value.
  - The date and time are alternately displayed with the measurement values.
  - When viewing the measurement value taken without setting the date and time, "-:--" is displayed instead of the date and time.
  - If there are no measurement values stored in the memory, the screen to the right is displayed.



4. Press the Start/Stop button to turn the monitor off.

## **USING THE MEMORY FUNCTION**

#### TO VIEW THE AVERAGE READING

- 1. Select the user ID (A or B).
- 2. While display off or just completing a measurement, press and hold the Memory button for more than 3 seconds.



NOTES: • If the previous measurement was taken without setting the date and time, the average reading is not calculated.

If two sets of measurement values are stored in the memory for the 10 minute period, the average is based on the two sets of measurement values.
 If only one set of measurement values is stored, this is displayed as the average.

#### TO DELETE ALL VALUES IN THE MEMORY

The values stored in the memory are deleted by user ID.

You cannot partially delete values stored in the memory. All values for the user you select will be deleted.

- 1. Select the user ID (A or B).
- 2. Press the Memory button to turn the monitor on.
- When the memory symbol (MEMORY) appears, while pressing and holding the Memory button, press the Start/Stop button for two seconds to delete all values in the memory.



Press the Start/Stop button to turn the monitor off.
 NOTE: The monitor will automatically turn off after 2 minutes.

## **CARE AND MAINTENANCE**

To keep your digital blood pressure monitor in the best condition and protect the unit from damage, follow the directions listed below:

Do not forcefully bend the cuff. Do not fold tightly.

### Clean the monitor with a soft dry cloth.

Do not use any abrasive or harsh cleaners such as bleach.

Do not attempt to clean the cuff.

### **⚠** CAUTION

Do not submerge the device or any of the components in water. Do not subject the monitor to extreme hot or cold temperatures, humidity or direct sunlight.

#### **⚠** CAUTION

Store the device and the components in a clean, safe location.

#### **⚠** CAUTION

Do not subject the monitor to strong shocks, such as dropping the unit on the floor.

**Remove the batteries** if the unit will not be used for three months or longer. Always replace all the batteries with new ones at the same time.

Use the unit in a manner consistent with the instructions provided in this manual.

### **⚠** CAUTION

Use only authorized parts and accessories. Parts and accessories not approved for use with the device may damage the unit.

### **⚠** CAUTION

Changes or modification not approved by the manufacturer will void the user warranty. Do not disassemble or attempt to repair the unit or components.

# **ERROR INDICATORS**

SYMBOL	CAUSE	CORRECTION
Irregular heartbeat	Irregular heartbeats are detected.	Remove the arm cuff. Wait 2-3 minutes and then take another measurement. Repeat the steps in "Taking a Measurement". If this error continues to appear, contact your physician.
Movement	Movement during measurement.	Remain still and do not talk during the measurement. Carefully read and repeat the steps in "Taking a Measurement".
	Batteries are low.	Recommend to replace the batteries with new ones ahead of time. Refer to "Battery Installation".
Replace battery	Batteries are depleted.	Replace the two batteries. Refer to "Battery Installation".
EI	Wrist cuff not applied correctly.	Apply the wrist cuff correctly. Refer to "Applying the Wrist Cuff".
E3 E4	Movement during measurement.	Do not hold the wrist cuff. Remain still and do not talk during measurement. Refer to "Taking a Measurement".
Wrist cuff not applied correctly or movement during measurement.		Apply the wrist cuff correctly. Refer to "Applying the Wrist Cuff". Remain still and do not talk during measurement. Refer to "Taking a Measurement".
En	Arm position changed during measurement.	Remain still until the measurement is complete. Refer to "Taking a Measurement".
Er	Device error.	Contact Customer Service.

# TROUBLESHOOTING TIPS

PROBLEM	CAUSES AND SOLUTIONS
No power. No display appears on the unit.	Replace both batteries with new ones at the same time. Check the battery installation for proper placement of the battery polarities.
Measurement values appear too high or too low.	Blood pressure varies constantly. Many factors including stress, time of day, how you wrap the cuff, may affect your blood pressure. Review the sections "Before Taking a Measurement" and "Taking a Measurement".

## **FCC STATEMENT**

#### Note:

POTENTIAL FOR RADIO/TELEVISION INTERFERENCE (for U.S.A. only)

This product has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. The product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If the product does cause harmful interference to radio or television reception, which can be determined by turning the product on and off, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the product and the receiver.
- Connect the product into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

## LIMITED WARRANTY

Your ReliOn BP300W Wrist Blood Pressure Monitor, Model # 6021RELN2, excluding battery, is warranted to be free from defects in materials and workmanship appearing within one year from the date of purchase, when used in accordance with the instructions provided with the monitor. The above warranty extends only to the original retail purchaser.

We will, at our option, replace without charge any monitor covered by the above warranty. Replacement is our only responsibility and your only remedy under the above warranty.

To obtain warranty service contact Customer Service by calling **1-855-776-0662** for the address of Inspection center.

Enclose the Proof of Purchase. Include a letter, with your name, address, phone number, and description of the specific problem. Pack the product carefully to prevent damage in transit. Because of possible loss in transit, we recommend insuring the product with return receipt requested.

THE FOREGOING IS THE SOLE WARRANTY PROVIDED BY RELION IN CONNECTION WITH THIS PRODUCT, AND RELION HEREBY DISCLAIMS ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IMPLIED WARRANTIES AND OTHER TERMS THAT MAY BE IMPOSED BY LAW, IF ANY, ARE LIMITED IN DURATION TO THE PERIOD OF THE ABOVE EXPRESS WARRANTY.

RELION SHALL NOT BE LIABLE FOR LOSS OF USE OR ANY OTHER SPECIAL, INCIDENTAL, CONSEQUENTIAL OR INDIRECT COSTS, EXPENSES OR DAMAGES.

This warranty provides you with specific legal rights, and you may have other rights which vary from state to state.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

#### FOR CUSTOMER SERVICE

Call toll free: 1-855-776-0662

	SPECIFICATIONS
Model:	6021RELN2 REF HEM-8625-WM
Display:	LCD Digital Display
Measurement Range:	Pressure: 0 to 299 mmHg, Pulse: 40 beats/min to 180 beats/min.
Accuracy/Calibration:	Pressure: ±3mmHg or 2% of reading Pulse: ±5% of reading
Inflation:	Automatic by electric pump
Deflation:	Automatic rapid deflation
Measurement Method:	Oscillometric method
Power Source:	2 "AAA" alkaline batteries 1.5V
Battery Life:	Approximately 300 uses with 2 new alkaline batteries
Operating Temperature /Humidity:	$50^{\rm o}{\rm F}$ to $104^{\rm o}{\rm F}$ ( $10^{\rm o}{\rm C}$ to $40^{\rm o}{\rm C})$ /15% RH to 90% RH
Storage Temperature /Humidity/Air Pressure:	-4°F to 140°F (-20°C to 60°C) /10% RH to 95% RH 700 hPa to 1060 hPa
Main Unit Weight:	Approximately 4 1/4 oz. (120g) not including batteries
Main Unit Dimensions:	Approximately 3 2/5"(1) $\times$ 3 4/5"(w) $\times$ 19/20" (h) without the wrist cuff (87 mm $\times$ 72 mm $\times$ 24 mm)
Measurable circumference of wrist:	Approximately 5 1/4" to 8 1/2" (13.5 cm to 21.5 cm)
Memory:	90 Measurements for each user (A and B)
Contents:	Main Unit, 2 "AAA" Alkaline Batteries, Instruction Manual, and Quick Start Guide
Applied part:	† = Type B

NOTE: These specifications are subject to change without notice.

ReliOn Wrist Blood Pressure Monitor

Information for accompanying documents in the scope of IEC60601-1-2:2007

Model: 6021RELN2

### Important information regarding Electro Magnetic Compatibility (EMC)

With the increased number of electronic devices such as PC's and mobile (cellular) telephones, medical devices in use may be susceptible to electromagnetic interference from other devices. Electromagnetic interference may result in incorrect operation of the medical device and create a potentially unsafe situation. Medical devices should also not interfere with other devices.

In order to regulate the requirements for EMC (Electro Magnetic Compatibility) with the aim to prevent unsafe product situations, the IEC60601-1-2 standard has been implemented. This standard defines the levels of immunity to electromagnetic interferences as well as maximum levels of electromagnetic emissions for medical devices.

Medical devices manufactured by OMRON Healthcare conform to this IEC60601-1-2:2007 standard for both immunity and emissions.

Nevertheless, special precautions need to be observed:

- The use of accessories and cables other than those specified by ReliOn, with the
  exception of cables sold by ReliOn as replacement parts for internal components,
  may result in increased emission or decreased immunity of the device.
- The medical devices should not be used adjacent to or stacked with other equipment. In case adjacent or stacked use is necessary, the medical device should be observed to verify normal operation in the configuration in which it will be used.
- Refer to further guidance below regarding the EMC environment in which the device should be used.
- The MEDICAL ELECTRICAL EQUIPMENT 6021RELN2 needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in this documentations.
- The Essential Performance of the 6021RELN2 is to measure a blood pressure and a pulse rate and using the memory function.

The 6021RELN2 may be interfered with by other equipment, even if that other equipment complies with CISPR EMISSION requirements.

(Table 1)

## Guidance and manufacturer's declaration - electromagnetic emissions

ReliOn<sup>-</sup> 6021RELN2 is intended for use in the electromagnetic environment specified below. The customer or the user of this ReliOn<sup>-</sup> 6021RELN2 should assure that it is used in such environment.

Emissions test	Compliance	Electromagnetic environment  – guidance
RF emissions CISPR 11	Group 1	The ReliOn 6021RELN2 uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The ReliOn™ 6021RELN2 is suitable
Harmonic emissions IEC 61000-3-2	Not Applicable.	for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power
Voltage fluctuations/ flicker emissions IEC61000-3-3	Not Applicable.	supply network that supplies buildings used for domestic purposes.

(Table 2)

## Guidance and manufacturer's declaration - electromagnetic immunity

ReliOn<sup>--</sup> 6021RELN2 is intended for use in the electromagnetic environment specified below. The customer or the user of this ReliOn<sup>--</sup> 6021RELN2 should assure that it is used in such environment.

Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment  – guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floor should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	Not Applicable.	Not Applicable.
Surge IEC 61000-4-5	±1 kV line(s) to line(s) ±2 kV line(s) to earth	Not Applicable.	Not Applicable.

Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment – guidance	
	<5 % <b>U</b> <sup>T</sup> (>95 % dip in <b>U</b> <sup>T</sup> ) for 0.5 cycle	Not Applicable.		
Voltage dips, short interruptions and voltage	40 % <b>U</b> <sub>T</sub> (60 % dip in <b>U</b> <sub>T</sub> ) for 5 cycles		N	
variations on power supply inputlines IEC 61000-4-11 fo	70 % <b>U</b> <sub>T</sub> (30 % dip in <b>U</b> <sub>T</sub> ) for 25 cycles		Not Applicable.	
	<5 % <b>U</b> <sub>T</sub> (>95 % dip in <b>U</b> <sub>T</sub> ) for 5 sec.			
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.	

Note:  $U_T$  is the A.C. mains voltage prior to application of the test level.

(Table 4)

### Guidance and manufacturer's declaration – electromagnetic immunity

ReliOn<sup>--</sup> 6021RELN2 is intended for use in the electromagnetic environment specified below. The customer or the user of this ReliOn<sup>--</sup> 6021RELN2 should assure that it is used in such environment.

Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment  – guidance
Conducted RF IEC 61000-4-6 Radiated RF IEC 61000-4-3	3 V rms 150 kHz to 80 MHz 3 V/m 80 MHz to 2.5 GHz	Not Applicable. 3 V/m	Portable and mobile RF communications equipment should be used no closer to any part of the ReliOn- 6021RELN2 including cables, than the recommended separation distance calculated from the equation appropriate to the frequency of the transmitter. <b>Recommend separation distance</b> Not Applicable. $d = 1.2 \sqrt{P}$ 80 MHz to 800 MHz $d = 2.3 \sqrt{P}$ 800 MHz to 2.5 GHz

Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment  – guidance
			where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters as determined by an electromagnetic site survey, a should be less than the compliance level in each frequency range. Interference may occur in the vicinity of equipment marked with the following symbol:

Note1: At 80 MHz and 800 MHz, the higher frequency range applies.

Note2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

<sup>b</sup> Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

<sup>&</sup>lt;sup>a</sup> Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radio, AM and FM radio broadcast, and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the ReliOn<sup>--</sup> 6021RELN2 is used exceeds the applicable RF compliance level above, the ReliOn<sup>--</sup> 6021RELN2 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the ReliOn<sup>--</sup> 6021RELN2.

(Table 6)

# Recommended separation distance between portable and mobile RF communications equipment and the ReliOn-6021RELN2

ReliOn- 6021RELN2 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of this ReliOn- 6021RELN2 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the ReliOn- 6021RELN2 as recommended below, according to the maximum output power of the communications equipment.

Output Power of Transmitter in Watt	Separation distance according to frequency of transmitter in meter		
	150 kHz to 80 MHz Not Applicable.	80 MHz to 800 MHz $d = 1.2 \sqrt{P}$	800 MHz to 2.5GHz $d = 2.3 \sqrt{P}$
0.01	Not Applicable.	0.12	0.23
0.1	Not Applicable.	0.38	0.73
1	Not Applicable.	1.2	2.3
10	Not Applicable.	3.8	7.3
100	Not Applicable.	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Note: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies. Note: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

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