GXM - 06AN

6 Channel Analog Output Expansion Module

USER MANUAL

GMT ENDÜSTRİYEL ELEKTRONİK SAN. ve TİC. LTD. ŞTİ

Let's start...

GXM-06AN Expansion Module

GMTCNT

This user manual contains the operating instructions of the 6 Channel Analog Output Expansion Module for the PLC.

Please read and observe this user manual before operating your device! Please keep it for later use!

The user shall be liable for the damage caused by the failure to follow the instructions in the operating instructions and the accidents to be incurred by persons. In this case, the device is not covered by the warranty.

6 Channel Analog Output Expansion Module

Foreword

GMT Electronics is technology enterprise which is specialized R&D, manufacture, sales and service of industrial control, automation and process control products with our experiences over than 30 years.

GMTCNT is trade mark of GMT offers total solution with 5 main core products; PLC, HMI, AC drive, Stepper, Servo system and industrial communication products.

GMT products are widely used in different sector. These are not only machine manufacturers such as food machinery, textile machinery, packaging, extruder, press, wood machinery also factory automation such as data acquisition and remote monitoring process.

Our products have proved themselves in many different places at the sector with their performance and quality.

GMT provides also cost performance products to customer, in order to make the customers more competitive in sector.

GMT will always continue to make investment to innovation and offer cost effective, easy and quick solutions.

We thank you for purchasing GMT GXM - 06AN 6 Channel Analog Output Expansion Module and congratulate you on your decision.

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1 INTRODUCTION TO USER MANUAL

When you purchase the product, please check and confirm whether there is a missing, damaged condition, otherwise please contact your dealer.

1.1 Correct Usage and Safety Requirements

Security definition:

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol. In this manual, safety precautions are classified as follows:

Danger

Operations which are not performed according to requirements may cause serious equipment loss or personal injury.

Caution

Operations which are not performed according to requirements may cause medium hurt or light hurt or material loss.

During the installation, commissioning and maintenance of the system, please make sure to follow the instructions in the safety and precautions section of the manual.

- This user manual requires attention and care both for your personal safety and for the protection of this product and its equipment. Only qualified personnel should be allowed to install the device. Qualified personnel are defined as persons authorized to perform commissioning, wiring, grounding according to current regulations and safety standards.
- Always cut off all energy when connecting or disconnecting the device to DIN rail or panel. Take precautions to prevent unwanted relay opening. Make connect the required ground and short circuit connections.
- Automation and control devices must be mounted in such a way that they are protected against the risk of unwanted operation. All connections of the control system must comply with the applicable safety standards.

- Fluctuations or variations in the supply voltage must not exceed the threshold values specified in the technical specifications, otherwise it may cause malfunctions and potentially hazardous situations.
- When an application has been interrupted due to interruptions in the supply voltage, take all necessary measures to ensure that the application continues to function correctly and that no hazardous situation occurs.
- Please do not interfere to the device during the technical problem and contact with the technical service as soon as possible.
- This device and its packing is not litter and may not be disposed of with domestic waste. Please return this device to an appropriate recycling point (Contact a certified electronic waste disposal center) at the end of its service life.

In case the above-mentioned warnings are not taken into account, our company or the authorized dealer cannot be held responsible for any negative consequences.

2 GXM-06AN Definition

2.1 Definition

- **GXM-06AN**, 6 Channel Analog Output Expansion Modules are used to increase the output number and variety of the CPU. They don't work alone. They are used first in the CPU and then optionally in other expansion modules. The module can be used in any number and order in order not to exceed 16.

2.2 General Structure

- **Figure 1** shows the general structure of **GXM-06AN**, 6 Channel Analog Output Expansion Module numbered in 8 main sections.

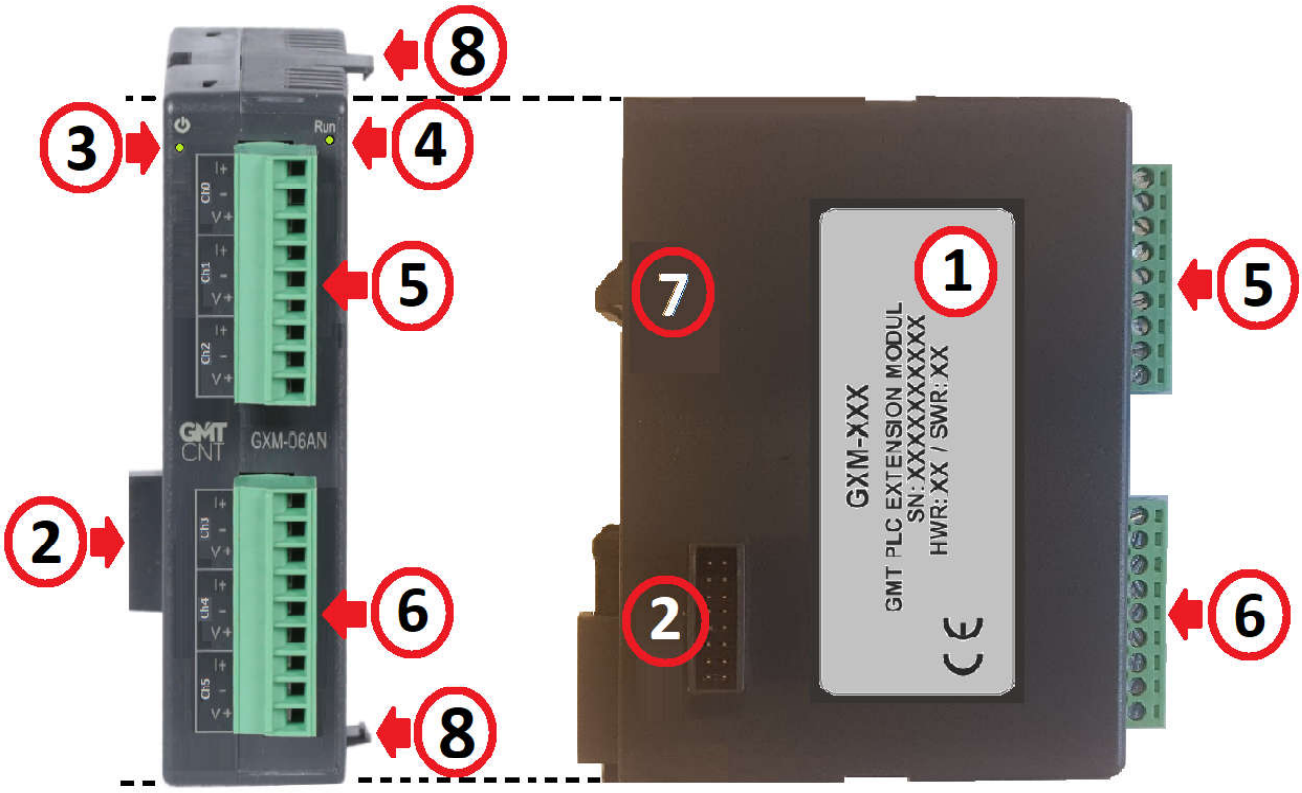

Figure - 1 GXM-06AN General structure

① GXM-06AN Expansion module label
② Expansion module BUS connection port
③ Module energy led
④ PLC BUS communication led
⑤ Channel 0, 1 and 2 (Ch0, Ch1 & Ch2) Sensor connection terminal
⑥ Channel 3, 4 and 5 (Ch3, Ch4 & Ch5) Sensor connection terminal
⑦ DIN rail adaptive area
⑧ Module connection mechanical clips

3 SPECIFICATIONS

3.1 General specifications

- GXM - 06AN 6 Channel Analog Output Expansion Modules is designed for automatic control applications in industrial environments.

1. 24 VDC Power Supply (Via PLC BUS)
2. 6 Channel Analog Output (0-10VDC, 0-20mA, 4-20mA)
3. Channels can be used as different output types.
4. Power consumption : 6W Max. @24VDC
5. Mounting Type : DIN Rail

3.2 Technical specifications

- Observe the following voltage tolerances, mains frequencies and power consumption details.

1. **Power Supply: 24** VDC (% ±10 tolerans)
2. **Output Channel: 6** Channel Analog Output (0-10VDC, 0-20mA, 4-20mA)
3. **6 channel analog output is galvanically (GI) isolated.** Galvanic isolation ensures that no disturbances on a loop interact with other loops
4. **Output Resolution:** 14 bit (0 ... 16383)
5. **Output Signal Types:** 0 - 10 VDC, 0 - 20 mA or 4 - 20 mA (Selected by software)
6. **Output accuracy:** +/- %0.5
7. **Repetition rate:** 5 Hz
8. **Power consumption:** Max. 6 W
9. **Operating Temperature:** between 0°C to +60°C (without icing)
10. **Storage Temperature:** -10ºC .. 60ºC (without icing)
11. **Relative humidity:** between %5 to %95 rH (without condensation)
12. **EMC (Electromagnetic Compatibility):**
    EN 61000-4-2, EN 61000-4-4, EN 61000-4-5
    EN 61000-4-2: Testing and measurement techniques, Electrostatic Discharge immunity test (ESD) ±2, ±4, ±8 kV Air discharge; ±2, ±4 kV Contact discharge
    EN 61000-4-4: Testing and measurement techniques, Electrical Fast Transient (EFT)/burst immunity test, Power line: ±4kV, Signal line:±4kV,(5KHz, 20KHz & 100KHz)
    EN 61000-4-6: Testing and measurement techniques, Surge immunity test (SUG); up to ± 450 V

3.3 Mechanical specifications

1. **Dimensions** : width 25,3mm x length 91mm x depth 63,9mm
2. **Mounting Type** : 35 mm DIN rail
3. **Weight** : **GXM-06AN;** 80 gr
4. **Terminal Crimping Torque** : Max 0.56 N.m

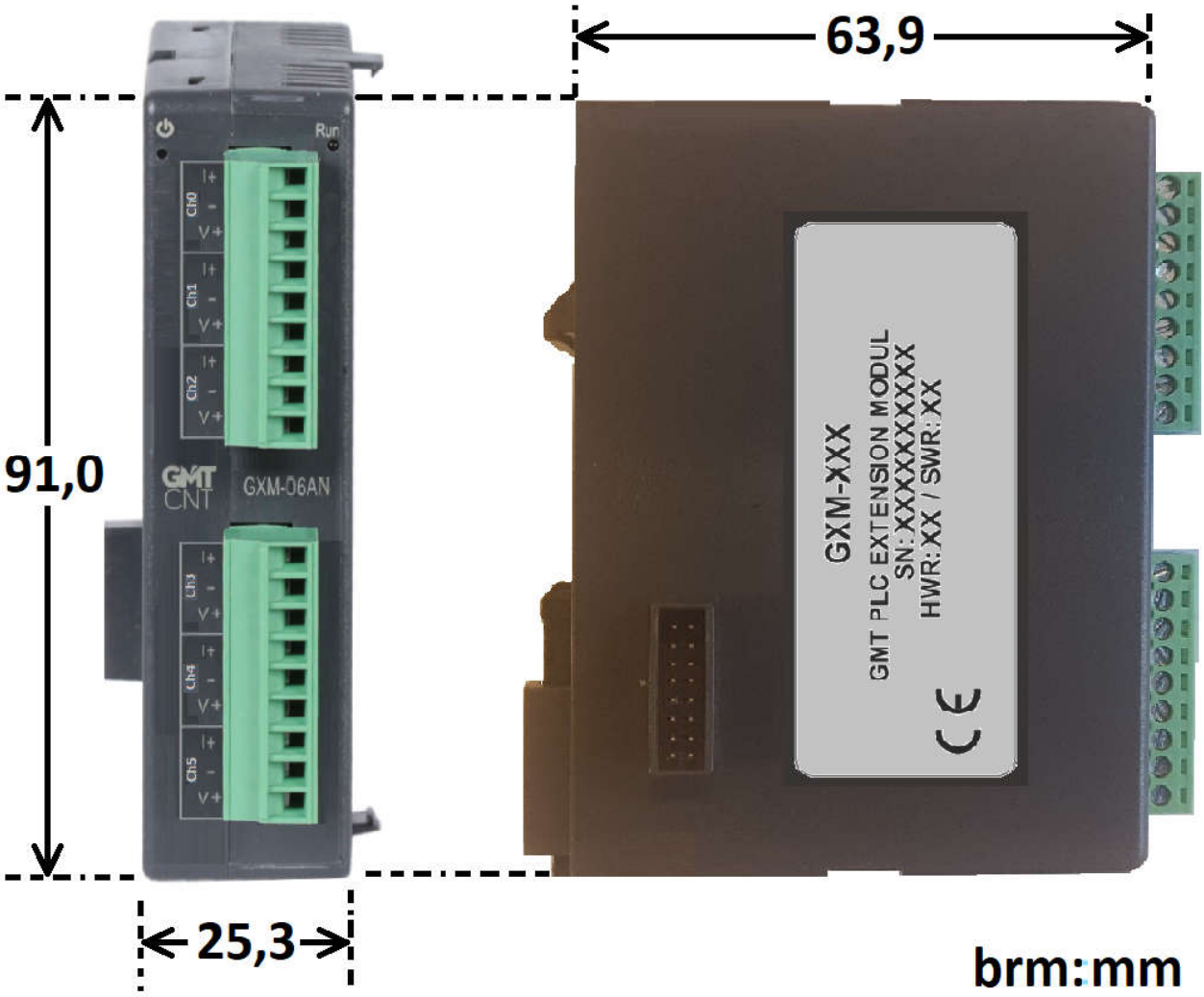

Figure - 2 GXM-06AN Mechanical dimensions

Status LEDs

Power LED : Indicates power is permanently lit in the module.
Run LED : Illuminates continuously when the PLC is successfully communicating with the CPU while in run mode. If flashing, the PLC is in stop mode or not correctly configured.

4 MOUNTING, WIRING AND INSTALLATION

4.1 MOUNTING

- During the mounting and dismounting;

Danger

Place the device on a non-flammable surface such as metal and keep the device away from flammable materials; otherwise it may cause fire.

Caution

Do not drop cable glands or screws into the device from the upper and lower terminal entries of the device; otherwise it may damage the device. Mounting the device in a place where there is no direct sunlight or vibration.

- GXM-06AN is suitable for mounting to DIN rail mounting. The device can be mounted on a 35 mm wide rail. The width of the device is 25.3 mm. This section describes how to mounting/dismounting the device.

4.1.1 Mounting considerations

- Always power off when mounting and removing the device.
- Protect the device from rain and direct sunlight by mounting the appliance in the electrical cabin.
- Protect from combustible and flammable materials.
- Mount the device to the panel inside which is the panel with air circulation in such a way that air ducts are not blocked.
- Mount the device in a protected manner against adverse environmental conditions such as humidity, vibration, pollution and very high/low temperature.

4.1.2 DIN rail mounting

- The mounting of the modules to the DIN rail is shown in **Figure 3**.
- GXM-06AN does not work alone. It is mounted on the DIN rail after it is installed on the CPU unit.

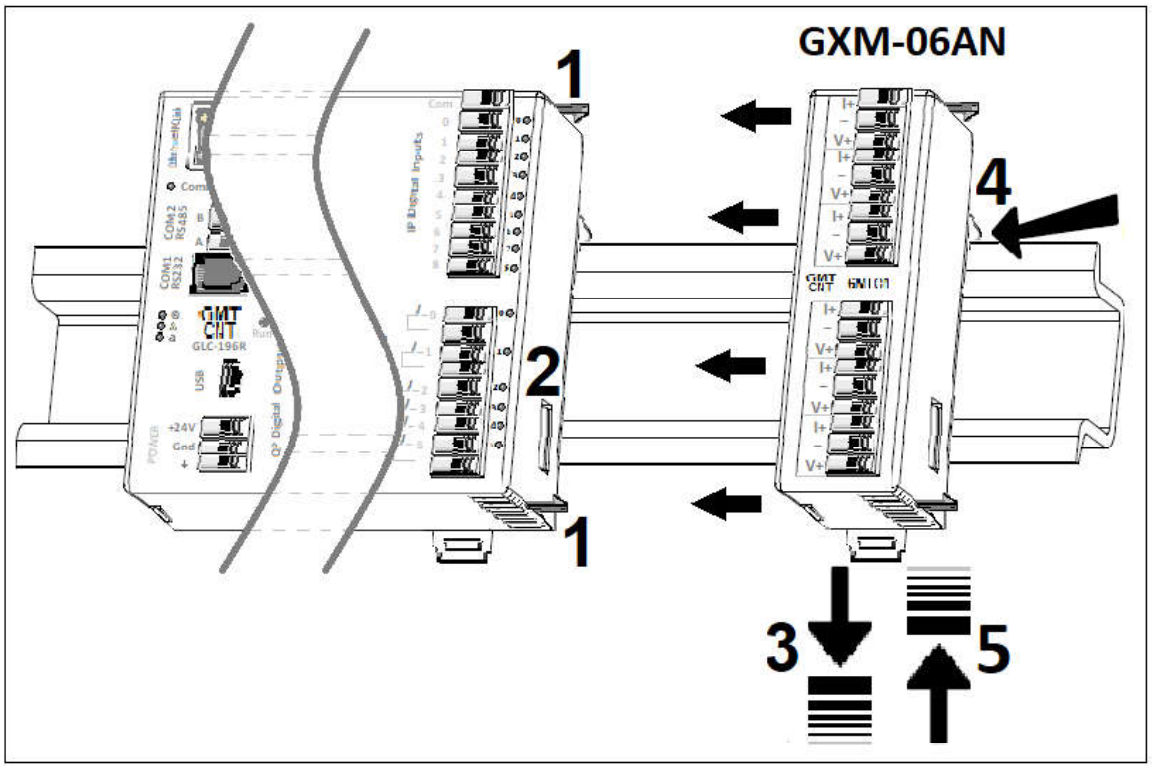

Figure - 3 GXM-06AN DIN rail mounting

- The mechanical clips shown by **number 1** and the BUS connection port shown by **number 2** are mounted in the direction of the arrow as to completely fit into their the slots.
- The **fixing rail clip** shown by **number 3** is pulled down and left it the last stage. In this way, the DIN rail' seating area is opened.
- On the point of shown by **number 4**, the corrugated hooked nest on the back of the device is provided to pass to the DIN rail. The device is grabbed by hand gently and pushed into the DIN rail and locked it.
- The **fixing rail clip** shown by **number 5** is pushed upwards and the device is locked on the DIN rail.

4.1.3 Removing from DIN rail

- Always switch off power before removing the device.
- The **fixing rail-clip** shown by **number 3** is pulled downwards gradually so that the locked rail-clip is released.
- At the point of shown by **number 4** the released device is taken off the DIN rail by lifted upwards.

4.2 WIRING

- During the connection of cables;

Danger

Only skilled personnel should be allowed to start and operate this device, otherwise there may be a risk of electric shock. Before wiring and any technical work, disconnect the power supply and mains connections, otherwise there may be a risk of electric shock. Make sure the ground connection is connected correctly otherwise there may be a risk of electric shock.

Caution

Pay attention to the wiring warnings and connect the cables correctly otherwise doing so may damage the device. Ensure EMC and safety standards are appropriate. Follow the instructions in the manual during the wiring. Otherwise doing so may cause an injury or risk of electric shock.

4.2.1 Considerations for cabling

- Please use cable cross-section according to the current. Cable connections can be made with cables with a maximum of 1.5 mm². Cable cross-sectional range that can enter the device terminals; 0,5 mm² (20 AWG) ~ 1,5 mm² (16 AWG). The minimum possible cross-section value is 0.0035mm² (AWG 37).
- The terminals must not be overtightened. Maximum torque for screwing; 0.56 Nm (5lb-in).
- Keep the cabling as short as possible. If longer cables are necessary, you should use shielded versions.
- Ensure that the cables have sufficient mechanical strength.
- Provide a suitable lightning surge arrester for cables installed in relevant areas of hazard.
- Keep device, signal/communication cables away from circuit breakers, power cables and devices/cables emitting electrical noise.

4.3 INSTALLATION

- During the setup of the device;

Danger

Do not use devices that are flooded, damaged, or missing parts otherwise, the device may be at risk of damage. Use insulation otherwise there may be a risk of electric shock.

Caution

During shipping be careful not to damage the device. Do not use the controller with damaged or missing parts, otherwise there is a risk of injury. Do not touch any electronic parts and components, otherwise it may cause static electricity.

4.3.1 Installing device

- Please read the user manual of the device thoroughly before using and setup. Observe the notes and warning in this user manual. Always ensure that the wiring and setup of device is compliant with current rules and mandatory standards. Also, conform with all national and regional regulations when you install and operate the devices. For information on standards and regulations that apply to your specific case, contact your local authorities.

4.3.2 GXM-06AN Connection diagram

- **GXM-06AN** module has 6 analog output channels. Current or voltage output is obtained according to the connection method and software configuration. Channels are used independently of each other. Two 9P/3.5mm terminal blocks are used for output.

- **Figure 4** shows the connection diagram of the **GXM-06AN** 6-channel analog output module.

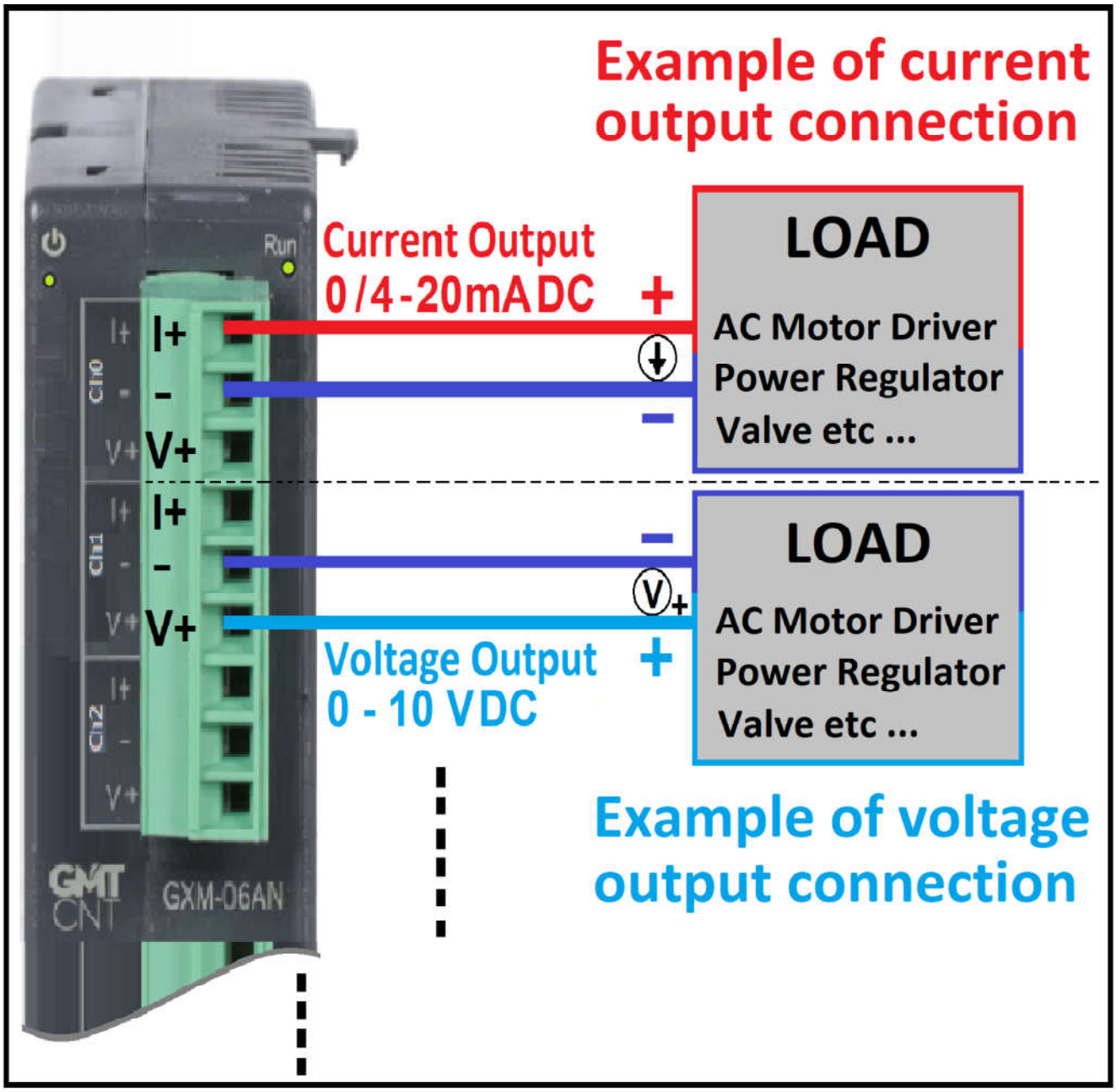

Figure - 4 Connection diagram

5 MAINTENANCE & SUPPORT

5.1 Maintenance

- The effect of temperature, humidity, dust and vibration in the environment will cause aging of the components inside the device. This may cause the device to malfunction or reduce the life of the device. Therefore, routine and periodic maintenance of the device is required.

- **Maintenance of the device should be done in the following cases;**

a) If there is an abnormal sound when the device is operating normally,
b) If there is vibration during operation,
c) If there is a change in the ambient conditions of the environment where the device is mounted,
d) If the device is warmed up,

- **Routine cleaning;**

a) The device must always be kept clean.
b) Dust must be removed. Especially metal powder should be prevented from entering the device.

- **Periodic control;**

a) Check the ventilation ducts and keep them clean.
b) Check the cable connections for an electrical arc.

5.2 Warranty Information

- GMT Endüstriyel Elektronik San. ve Tic. Ltd. Şti., provides 2-year warranty against the damages caused by the operating conditions specified in the operating instructions. Out of this period the repair of malfunctions occurs for a fee.

a) Damage caused if it is used out of conditions specified in the manual,
b) Damage caused by flood, fire and mains voltage fluctuations.

5.3 Support

- For quick and easy answers to your questions about **GXM - 06AN, 6 Channel Analog Output Expansion Module,** please contact **http://forum.gmtcontrol.com**

Technical support center contact information:
Telephone: +90 (216) 668 00 06, **GSM** +90 (534) 363 75 33
Fax: +90 (216) 668 00 08
E–mail: gmt@gmtcontrol.com
Address: Çubuklu Mh. Bogaziçi Cd. No:6/B Beykoz 34805 Istanbul, Türkiye.

5.4 User Review

Dear Customer,

- The reproduction, distribution or use of this document or its contents is not permitted without express written authority. Offenders will be liable for damages.
- We have examined the contents of this publication for agreement with the hardware and software described. Nevertheless, discrepancies can not be ruled out. Any liability and warranty for the accuracy of this information is excluded. The data in this manual are reviewed at regular intervals. Any corrections required are included in the subsequent editions. Suggestions for improvement are welcomed.