

GCP-MG

GCP Modbus gateway


Quick start reference guide

 This document is a reference guide only and must be used in conjunction with the *GCP-MG User manual*.

IGGCPMG-2201

INSTALLATION

Regulatory notes

-  1. The *GCP-MG* is suitable for use in non-hazardous locations only.
- 2. The *GCP-MG* is not authorized for use in life support devices or systems.
- 3. Wiring and installation must be in accordance with applicable electrical codes in accordance with the authority having jurisdiction.
- 4. This is a Class A device and intended for commercial or industrial use. This equipment may cause radio interference if used in a residential area; in this case it is the operator's responsibility to take appropriate measures.
- 5. The precondition for compliance with EMC limit values is strict adherence to the guidelines specified in the *GCP-MG User manual*. This applies in particular to the area of grounding and shielding of cables.


FCC Notice (USA only)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Industry Canada Notice (Canada only)

This Class A digital apparatus complies with Canadian ICES-003.

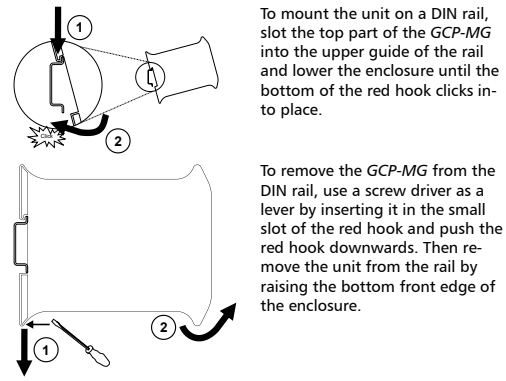
SAFETY PRECAUTIONS

 **ELECTRICAL HAZARD**


- This equipment must be installed and serviced only by qualified personnel. Such work should be performed only after reading the *GCP-MG User manual* in its entirety.
- Before performing visual inspections, tests, or maintenance on this equipment, disconnect all sources of electric power. Assume that all circuits are live until they have been completely de-energized, tested, and tagged. Pay particular attention to the design of the power system. Consider all sources of power, including the possibility of backfeeding.
- Apply appropriate personal protective equipment and follow safe electrical practices.
- Turn off all power supplying the equipment in which the *GCP-MG* is to be installed before installing, wiring or removing the *GCP-MG*.
- Always use a properly rated voltage sensing device to confirm that power is off.
- The successful operation of this equipment depends upon proper handling, installation, and operation. Neglecting fundamental installation requirements may lead to personal injury as well as damage to electrical equipment or other property.

Failure to follow these instructions could result in death or serious injury!

DIN rail mounting and removal



Mounting rules

-  • No water splash and water drops
- No aggressive gas, steam or liquids
- Avoid dusty environments.
- Avoid shock or vibration
- Do not exceed the specified operational temperatures and humidity range.
- Mount inside an electrical switchboard or control cabinet.
- Make sure there is sufficient air ventilation and clearance to other devices mounted next to the unit.
- Observe applicable local regulations like EN60204 / VDE0113.

INTRODUCTION

Package Contents

- *GCP-MG* unit
- Quick start reference guide
- 2-pin terminal block plug
- 6-pin terminal block plug

Documentation and Additional Resources

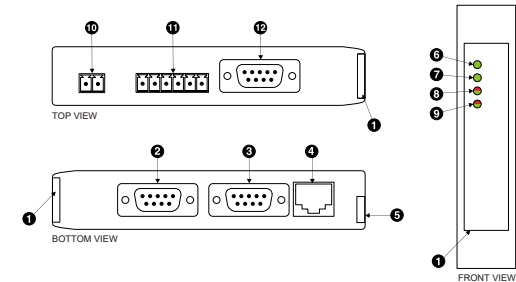
This Quick start reference guide must be used in conjunction with the *GCP-MG User manual*.

The *GCP-MG User manual* and supplemental software packages can be downloaded from the *GCP-MG* web site:
<http://www.proconx.com/gcpmg>

Quick start checklist


- Obtain a copy of the *GCP-MG User manual* and read it properly and in its entirety.
- Mount the unit.
- Connect the power. Do not connect yet CAN bus or serial ports.
- Configure the Ethernet communications settings with a web browser (using an Ethernet crossover cable) or with a terminal program like *HyperTerminal* (using a null modem cable)
- Configure the CAN bus settings.
- Configure the serial line communication settings.
- Configure the operational aspects of the device.
- Wire CAN bus.
- Wire serial line interfaces.

DESCRIPTION




- 1** Clear front cover
- 2** RS-232 Modbus connector
- 3** Diagnostic port connector
- 4** Ethernet connector
- 5** DIN rail clip
- 6** Power LED
- 7** Ethernet link LED
- 8** Device status LED
- 9** Modbus/CAN status LED
- 10** Power terminals
- 11** RS-485 Modbus terminals
- 12** CAN connector


Before connecting anything

-  1. Before installing or removing the unit or any connector, ensure that the system power and external supplies have been turned off.
- 2. Check the system supply voltage with a multimeter for correct voltage range and polarity.
- 3. Connect the power supply cable and switch on the system power. Check if the Power LED is lit.
- 4. Turn off system power.
- 5. Connect all I/O cables.
- 6. Once you are certain that all connections have been made properly, restore the power.

Power terminals pin assignment

 Before connecting power please follow the rules in the section called "SAFETY PRECAUTIONS" and the section called "Before connecting anything".


1	V+	Positive voltage supply (10 - 30 V DC)
2	V-	Negative voltage supply, DC power return

 Make sure that the polarity of the supply voltage is correct before connecting any device to the serial and CAN ports! A wrong polarity can cause high currents on the ground plane between the V- power supply pin and the CAN port and serial port ground pins, which can cause damage to the device.

CAN connector pin assignment

Pinout as per CiA DS-102. Please observe the wiring, grounding and shielding instructions described in the *GCP-MG User manual*!

CAN_L	1	NC
CAN_GND	2	CAN_L CAN_L bus line
CAN_H	3	CAN_GND CAN ground
CAN_GND	4	NC
CAN_H	5	NC
CAN_GND	6	CAN_GND CAN ground
CAN_L	7	CAN_H CAN_H bus line
CAN_H	8	NC
CAN_GND	9	NC

 Do not connect the cable shield to the CAN_GND pins or the connector shell! Use an external *chassis ground* connection to terminate the shield.



Do not connect the cable shield to the GND pins! Use an external chassis ground connection to terminate the shield.

3	GND	Modbus common
4	D+	Modbus D1
5	D-	Modbus D0
6	reserved,	must be left unconnected
7	reserved,	must be left unconnected
8	reserved,	must be left unconnected

RS-485 Modbus terminals pin assignment
Please observe the wiring, grounding and shielding instructions described in the *GCP-MG User manual!*



ELECTRICAL HAZARD
• This equipment must be installed and serviced only by qualified personnel.
• Qualified persons performing diagnostics or troubleshooting that require electrical conductors to be energized must comply with and follow safe electrical work practices.
Failure to follow these instructions could result in death or serious injury!

Diagnostics and troubleshooting

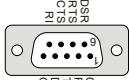
The status web pages served by the *GCP-MG*, display diagnostic data that may be helpful in troubleshooting communication problems. In addition the about page contains information about your specific *GCP-MG*, including the serial number and media access control (MAC) address. Some of these pages show a **Clear Counter** button. Clicking this button clears all cumulative readings shown on this particular page. If power to the *GCP-MG* is lost, all values reset to zero.

Maintenance

MAINTENANCE AND TROUBLESHOOTING

RS-232 Modbus connector pin assignment
Pinout as per EIA-574 DTE. Please observe the cabling instructions described in the *GCP-MG User manual!*

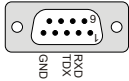
1	DCD	(unused)	in
2	RXD	Receive data	in
3	TXD	Transmit data	out
4	DTR	(unused)	out
5	GND	Signal ground	in
6	DSR	(unused)	in
7	RTS	(unused)	out
8	CTS	(unused)	in
9	RI	(unused)	in



Diagnostic port pin assignment

Pinout as per EIA-574 DTE. Please observe the cabling instructions described in the *GCP-MG User manual!*

1	NC	in	
2	RXD	Receive data	in
3	TXD	Transmit data	out
4	NC		
5	GND	Signal ground	
6	NC		
7	NC		
8	NC		
9	NC		



LED indicators

A LED test is exercised at power-up, cycling each LED off, green and then red for approximately 0.25 seconds. At the same time the power-on self test of the device is performed.

The following table outlines the indicator condition and the corresponding status after the power-on self-test has been completed:

LED	Function	Condition	Indication
Off	No power	Applied to the device.	
Green	Power supply	OK	
Off	Ethernet link	No Ethernet link	
Green	Ethernet link	Ethernet link OK	
Off	Link		
Off	Device status	Green	The device is operating in normal condition.
Flashing red	Device status	1 rate	configuration missing, incomplete or incorrect.
Flashing red	Device status	1 rate	The device is operational but has a fault listed which requires acknowledgment.
Red	Device status	1 rate	The device has an unrecoverable fault; may need replacing. Flashing sequence and rate of Status2 LED indicates fault class.
Off			CAN connection OK, Connection time-out on Modbus
Green			Both Modbus and CAN connection OK
Green			Modbus connection OK, Connection time-out on CAN
Flashing red			1 rate
Flashing red			1 rate
Red			The device has detected an error that has rendered it incapable of communicating on CAN.

SPECIFICATIONS

Power supply	Voltage	10-30 V DC
Current <td>30 mA typical @ 24 V DC</td> <td></td>	30 mA typical @ 24 V DC	
Intrinsic consumption <td>750 mW</td> <td></td>	750 mW	
Emissions <td>AS/NZS CISPR 22 / EN 55022 (Class A)</td> <td></td>	AS/NZS CISPR 22 / EN 55022 (Class A)	
Electromagnetic compatibility <td>Immunity</td> <td>EN 55024</td>	Immunity	EN 55024
Electrostatic discharge	EN 61000-4-2	
Fast transients	EN 61000-4-3	
Conducted RF	EN 61000-4-4	
Conducted RF	EN 61000-4-6	
Enclosure	Material	Self-extinguishing PC/ABS blend (UL 94-V0)
Mounting	35 mm DIN rail (EN 60715)	
Classification / Type rating	IP 20 / NEMA Type 1	
Cooling	Convection	
Environmental	Operating temperature	0 to 60 °C / 32 to 140 °F
	Storage temperature	-25 to 85 °C / -13 to 185 °F
	Humidity rating	10 to 95% relative humidity, non condensing
Physical	Operating ambience	Free from corrosive gas, minimal dust
Dimensions	101 x 22.5 x 120 mm / 3.98 x 0.886 x 4.72 in	
Weight	0.13 kg / 0.287 lb	
Compliance	C-Tick	
Australia	CE, RoHS	
Europe	FCC Part 15 (Class A)	
USA	ICES-003 (Class A)	
Canada		

Ethernet & IP configuration

Before configuring the *GCP-MG*, obtain a unique static IP address, subnet mask, and default gateway address from your network administrator.

Use a web browser or a terminal program like *HyperTerminal* to configure the *GCP-MG*'s TCP/IP settings with this information.

The factory default IP address of the *GCP-MG* is 169.254.x.10 which is in the Automatic Private IP Addressing (APIPA) address range.

In order to connect to the *GCP-MG* via TCP/IP, your PC must be on same IP subnet as the gateway.

IP setup using a web browser

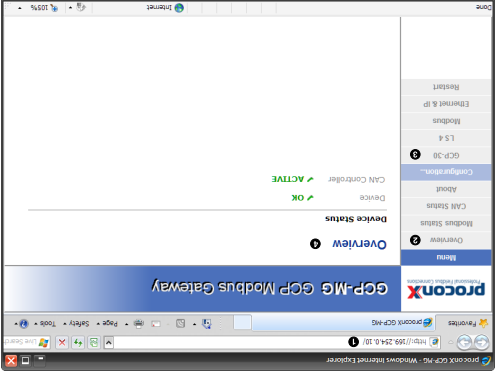
1. Disconnect your PC from your corporate network. If your computer is configured for DHCP it should now automatically fall back to use a default IP address from the APIPA range 169.254.x.x (Windows PCs only). If your computer is configured with a static IP address or does not support APIPA, it must be changed manually to be part of the 169.254.0.0/16 subnet, for example to 169.254.0.1.
2. Connect an Ethernet crossover cable from the *GCP-MG* to the computer.
3. Start *Internet Explorer*.
4. In the address box, type 169.254.0.10 and then press **Enter**.
5. Click **Configuration...** and then **Ethernet & IP** in the menu on the left side of the page.
6. Enter the IP address, subnet mask, and gateway address assigned to your *GCP-MG*, then click **save**.
7. Reconnect your computer to your corporate network. If you assigned a static IP address to your computer in step 1, you must restore your computer's original settings before reconnecting to your network.

IP setup using a terminal program like HyperTerminal

Please consult the *GCP-MG User manual* for further details on this method.

Configuring and commissioning

The configuration pages are accessed using the integrated web server:



- 1 Gateway IP address
- 2 Main menu
- 3 Configuration sub-menu
- 4 Information area

Please consult the *GCP-MG User manual* for further details how to set-up the *GCP-MG*.

CONTACT

proconX Pty Ltd
www.proconX.com

Technical Support

We provide an electronic support and feedback system for our *proconX* products. It can be accessed through the following web link:

<https://www.proconX.com/support>

Product Returns

Before returning any product for service, repair or warranty, obtain first a RMA (Returned Material Authorization) number by contacting our technical support.

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