DroconX

MBRG-300 Modbus Router/Gateway

Quick start reference quide

This document is a reference guide only and must be used in conjunction with the MBRG-300 User manual

IGMBRG300-1101

INSTALLATION

Regulatory notes

1. The MBRG-300 is suitable for use in non-hazardous locations only.

- 2. The MBRG-300 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 MBRG-300 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

DIN rail mounting and removal

SAFETY PRECAUTIONS

ELECTRICAL HAZARD

backfeeding.

follow safe electrical practices.

removing the MBRG-300.

confirm that power is off

or other property.

or serious injury!

This equipment must be installed and serviced only by

after reading the MBRG-300 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

· Apply appropriate personal protective equipment and

· Turn off all power supplying the equipment in which the

· Always use a properly rated voltage sensing device to

· 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

Failure to follow these instructions could result in death

MBRG-300 is to be installed before installing, wiring or

qualified personnel. Such work should be performed only

To mount the unit on a DIN rail, slot the top part of the MBRG-300 into the upper guide of the rail and lower the enclosure until the bottom of the red hook clicks into place.

To remove the MBRG-300 from the DIN rail, use a screw driver as a lever by inserting it in the small slot of the red hook and push the red hook downwards. Then remove the unit from the rail by raising the bottom front edge of the enclosure.

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

- MBRG-300 unit
- · Quick start reference quide
- 2-pin terminal block plug
- 6-pin terminal block plug

Documentation and Additional Resources

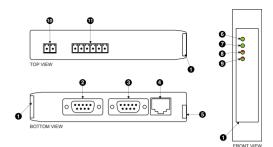
This Quick start reference guide must be used in conjunction with the MBRG-300 User manual

The MBRG-300 User manual and supplemental software packages can be downloaded from the MBRG-300 web site: http://www.proconx.com/mbra300

Quick start checklist

- · Obtain a copy of the MBRG-300 User manual and read it properly and in its entirety
- · Mount the unit.
- · Connect the power. Do not connect vet 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 serial line communication settings.
- · Configure the operational aspects of the device.
- · Wire serial line interfaces.

DESCRIPTION



- Clear front cover
- Ø Serial port 1 RS-232 connector
- Serial port 2 RS-232 connector
- Ethernet connector
- DIN rail clip
- O Power LED Ethernet link LED
- Status 1 | ED
- Status 2 LED
- Power terminals
- Serial port 1 and 2 RS-485 or serial port 1 RS-422 terminals

Before connecting anything

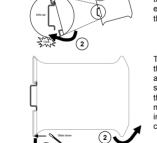
- 1. Before installing or removing the unit or any connector, ensure that the system power and external supplies have been turned off
 - 2. Check the system supply voltage with a multimeter for correct voltage range and polarity.
 - 3. Connect the power supply cable and switch on the system power. Check 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".

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 ports! A wrong polarity can cause high currents on the ground plane between the V- power supply pin and the serial port ground pins, which can cause damage to the device.



RS-485/RS-422 terminals pin assignment

Please observe the wiring, grounding and shielding instructions

 RS-422 Description	RS-485	niq	<u>, 1, 151 1, 15</u>
/e/	unsm rəsU	3-300	ecribed in the MBR

		207 04		
Description	K2-477	284-28	uіЧ	
nommoO sudboM	GND	GND	3	
fOXT to fO sudboM	+XT	D+ port ל	4	PORT1 PORT2
Modbus D0 or TXD0	-XT	D- port 1	S	584-2485
nommoO sudboM	GND	GND	9	<u>אסארילא לאסאיילא ל</u>
Modbus D1 or RXD1	+XЯ	D+ port 2	L	<u>88883338</u>
Modbus D0 or RXD0	-хя	D- port 2	8	RS-422

Do not connect the cable shield to the GND pins! Use an

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particular page. If power to the MBRG-300 is lost, all values reset to

button. Clicking this button clears all cumulative readings shown on this

COUNTER COUNTER COUNTER COUNTER (CAM)

MBRG-300' Including the serial number and media access control

In addition the About page contains information about your specific

data that may be helpful in troubleshooting communication problems.

or serious injury!

dualified personnel.

Diagnostics and troubleshooting

ELECTRICAL HAZARD

.1n9mu200

directly for assistance.

Maintenance

practices.

The status web pages served by the MBRG-300, display diagnostic

Failure to follow these instructions could result in death

energized must comply with and follow safe electrical work

troubleshooting that require electrical conductors to be

· Qualified persons performing diagnostics or

I use equipment must be installed and serviced only by

Do not open the MBRG-300 enclosure; this will void the product

Refer to the technical support contacts provided at the end of this

user-serviceable parts. If the MBRG-300 requires service, contact us

The MBRG-300 does not require maintenance, nor does it contain any

MAINTENANCE AND TROUBLESHOOTING

K2-45

external chassis ground connection to terminate the shield.

• 9)

	6	Ы	(pəsnun)	uj
	8	CTS	(pəsnun)	ui
	Z	RTS	(pəsnun)	tuo
	9	DSR	(pəsnun)	ui
~ 우주	g	GND	Signal ground	
	4	ЯΤО	(pəsnun)	tuo
0	3	ΔXT	Transmit data	tuo
	2	ВXD	Receive data	uj
SP TO R	L	กวก	(pəsnun)	u

Pinout as per EIA-574 DTE. Please observe the cabling instructions

decribed in the MBRG-300 User manual!

RS-232 connector pin assignment

6	Ы	(pəsnun)	ui
8	CTS	(pəsnun)	uį
7	RTS	(pəsnun)	tuo
9	DSR	(pəsnun)	ui
G	СИD	Signal ground	
4	ЯΤО	(pəsnun)	tuo
3	DXT	Transmit data	tuo
2	ВXD	Receive data	ui
L	ດວດ	(pəsnun)	ui

same IP subnet as the gateway. In order to connect to the MBRG-300 via TCP/IP, your PC must be on is in the Automatic Private IP Addressing (APIPA) address range. The factory default IP address of the MBRG-300 is 169.254.0.10 which

IP setup using a web browser

Ethernet & IP configuration

administrator.

the 169.254.0.0/16 subnet, for example to 169.254.0.1. does not support APIPA, it must be changed manually to be part of PCs only). If your computer is configured with a static IP address or awobniW) x.x.432.001 agns AAIAA and mort asabbs AI tlusteb s is configured for DHCP it should now automatically fall back to use Disconnect your PC from your corporate network. If your computer

configure the MBRG-300's TCP/IP settings with this information.

Use a web browser or a terminal program like HyperTerminal to

subnet mask, and default gateway address from your network

Before configuring the MBRG-300, obtain a unique static IP address,

- computer. 2. Connect an Ethernet crossover cable from the MBRG-300 to the
- 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.
- to your MBRG-300, then click save. 6. Enter the IP address, subnet mask, and gateway address assigned
- restore your computer's original settings before reconnecting to assigned a static IP address to your computer in step 1, you must 7. Reconnect your computer to your corporate network. If you

your network.

ΕI Wm 087 uuuusic cousnubriou 30 mA typical @ 24 V DC າດອາກູ 10-30 A DC voltage Power supply

silstralia	C-Tick
Compliance	
ydeight	0.12 kg / 0.265 lb
Dimensions	101 x 22.5 x 120 mm / 3.98 x 0.886 x 4.
Physical	
Operating ambience	Free from corrosive gas, minimal dust
Humidity rating	10 to 95% relative humidity, non conden
Storage temperature	-25 to 85 °C / -13 to 185 °F
Operating temperature	0 to 60 °C / 32 to 140 °F
Environmental	
Cooling	Convection
Classification / Type rating	f 9qyT AM3N \ 02 91
gnitnuoM	35 mm DIN rail (EN 60715)
Material	Self-extinguishing PC/SBS blend (UL 94
Enclosure	
Conducted RF	EN 61000-4-6
Fast transients	EN 61000-4-4
Radiated RF	EN 61000-4-3
Electrostatic discharge	EN 61000-4-2
Vinumul	EN 22054
snoissim∃	A SCISPR 22 / EN 55022 (Class A
Electromagnetic compatibility	
	AAUL OC /

(A seelO) (Class A)

CE, RoHS

FCC Part 15 (Class A)

(A (A (0V-₽н (0V-10) (0Vrecunical support. Product Returns

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curical components in life support devices of systems.

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

http://www.proconx.com/support

Website: http://www.proconx.com Email: mail@proconx.com

Tel +61-7-3376 3911 Fax +61-7-3102 9206

Unit 7, 14 Argon St, Sumner QLD 4074, Australia

This product is designed and manufactured by:

Technical Support

broconX Pty Ltd

TOATNOO

set-up the MBRG-300.

O Configuration sub-menu

Gateway IP address

Information area

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Restart

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VUOCOUX

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G Dupnoy

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

Please consult the MBRG-300 User Manual for further details how to

eference From range

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The configuration pages are accessed using the integrated web server:

Please consult the MBRG-300 User manual for further details on this

IP setup using a terminal program like HyperTerminal

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Modbus Mapping Filter

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Ethemet 0-255

SOLITICA TROTILO

KewateS/ratuox sudbox 000-5X8M Xnooord

Configuring and commissioning

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Specifications subject to change without notice.

espective owners.

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SPECIFICATIONS

canada

Europe

ASU

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

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

.eea repiacing.

Ethernet link OK

No Ethernet link

Power supply OK

Modbus/TCP connection established.

of Status2 LED indicates fault class. need replacing. Flashing sequence and rate

Device operational but has a tault listed

which requires acknowledgment.

No power applied to the device.

The device has an unrecoverable fault; may

The device is operating in normal condition.

ing due to contiguration missing, incomplete

The device has an unrecoverable fault; may

Device operational but needs commission-

No Modbus/TCP connection.

snieis

nication

SUIBIS LSN1

Device

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POWEL POWEL

LED indicators

Ethernet Off

LED Function Condition

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-eis

Green

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Green

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Flashing green