www.gir-na.com

Fuel Management Systems

GIR TIP/GCA-NA Hardware
Installer Handbook

2017-06-01

Contents

Introduction

GIR TIP/GCA is a modern fuel management system for commercial use. The unit is hooked up to one or many dispensers, controls their authorization, and capture the quantity dispensed. It is designed to work with a GIR software which could be either on-premise, or in the cloud.

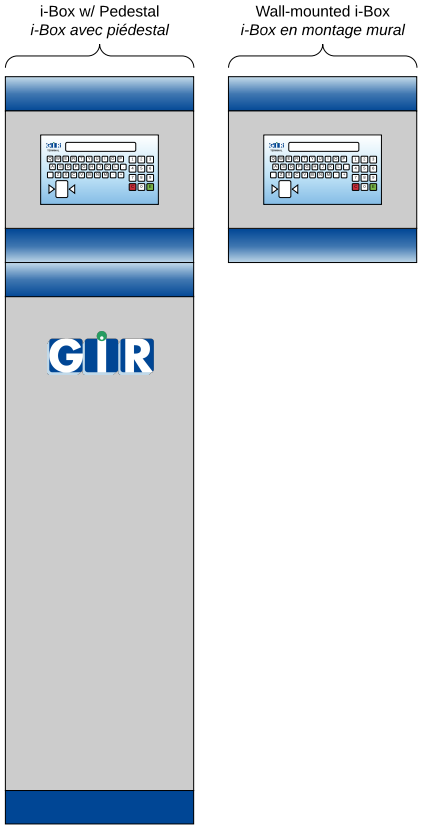
This handbook is designed for GIR installers. In here, you will find everything you need to know to have a GIR unit up and running.

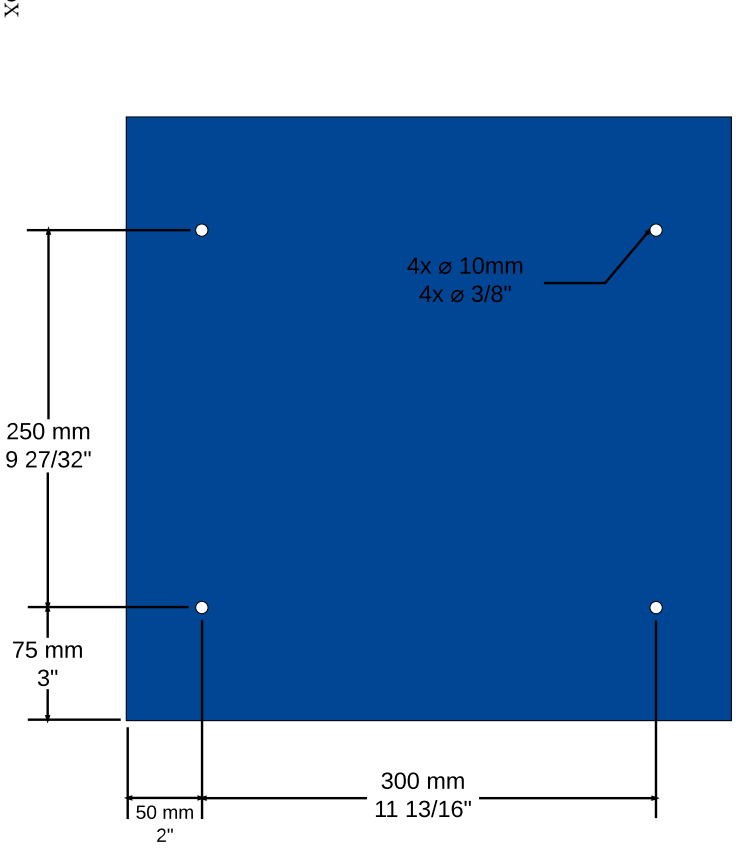
If you experience any difficulty or need assistance, please contact GIR technical support:

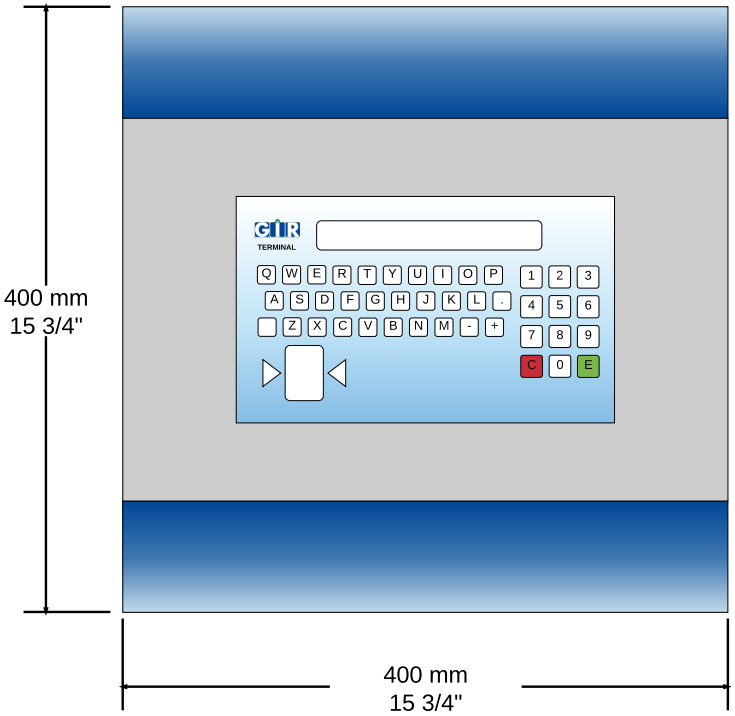
- support@gir-na.com
- 1-844-GIRNAFMS (1-844-447-6236)
- Monday to Friday 8am to 6pm (Eastern Time)

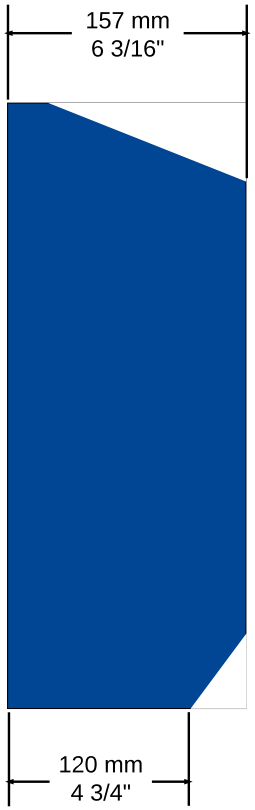
Chapter 1

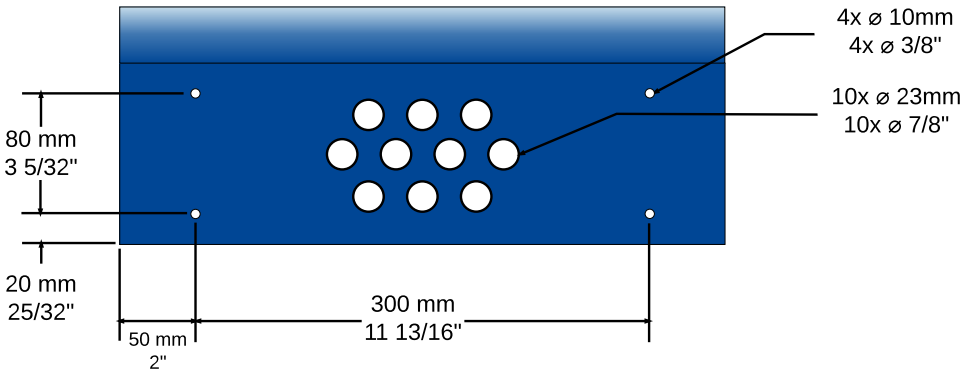
Mechanical drawings

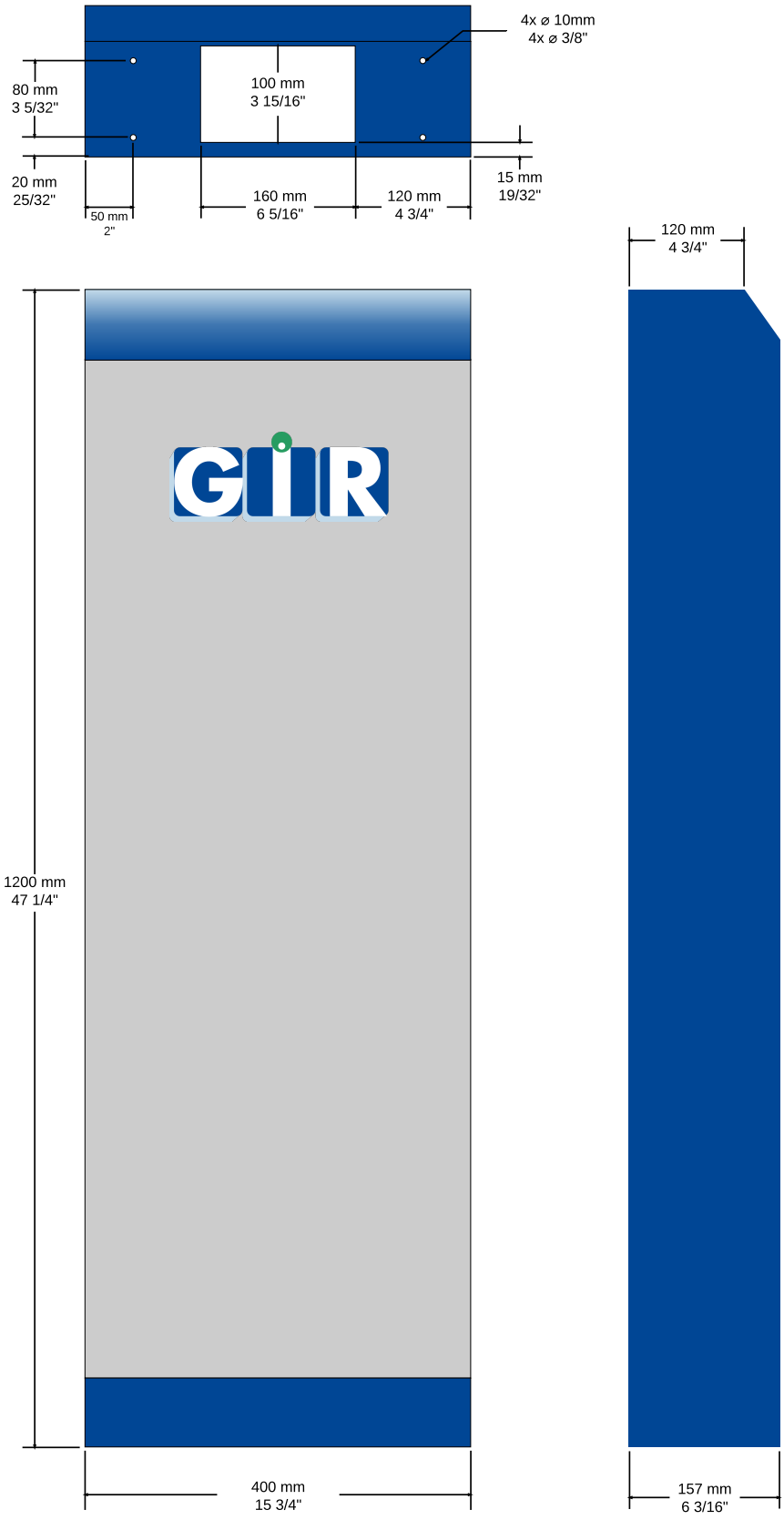



4x ⌀ 10mm
4x ⌀ 3/8"
250 mm
9 27/32"
75 mm
3"
50 mm
2"
300 mm
11 13/16"


400 mm
15 3/4"
TERMINAL
400 mm
15 3/4"


157 mm
6 3/16"
120 mm
4 3/4"

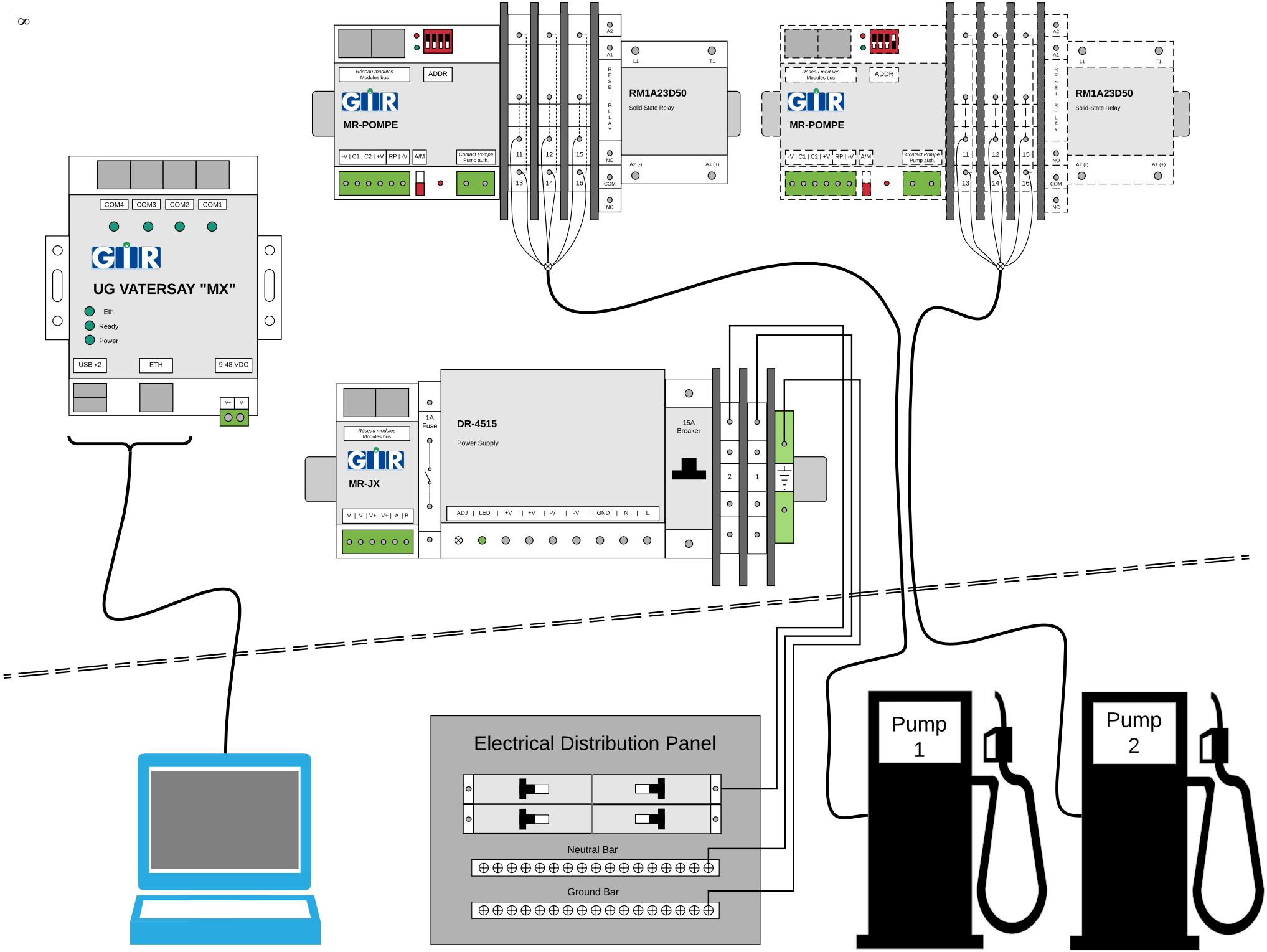

4x ⌀ 10mm
4x ⌀ 3/8"
10x ⌀ 23mm
10x ⌀ 7/8"
80 mm
3 5/32"
20 mm
25/32"
50 mm
2"
300 mm
11 13/16"


4x ⌀ 10mm
4x ⌀ 3/8"
80 mm
3 5/32"
100 mm
3 15/16"
20 mm
25/32"
50 mm
2"
160 mm
6 5/16"
120 mm
4 3/4"
15 mm
19/32"
120 mm
4 3/4"
1200 mm
47 1/4"
400 mm
15 3/4"
157 mm
6 3/16"
4x ⌀ 10mm
4x ⌀ 3/8"
100 mm
3 15/16"
13 mm
1/2"
62 mm
2 7/16"
170 mm
6 11/16"
115 mm
4 1/2"
28 mm
1 7/64"

Chapter 2

General wiring

- **Communication**: on the Vatersay unit
  - cellular: GSM modem connected to *COM2* port
  - Ethernet: cat5 cable connected to *Eth* port
  - USB flash drive: inserted into *USB* port (either one)
- **Main power supply**: on the lower terminal block
  - Green/Yellow: earth ground
  - 1 (N): neutral
  - 2 (L): 110-240VAC, 50-60Hz, 1.5A
- **Pump # 1**: on the upper-left gray terminal block
  - 11-12: authorization output
  - 13-14: reset complete input
  - 15-16: pulse emitter input
- **Pump # 2**: on the upper-right gray terminal block
  - 21-22: authorization output
  - 23-24: reset complete input
  - 25-26: pulse emitter input


MR-POMPE
RM1A23D50
Solid-State Relay
MR-POMPE
RM1A23D50
Solid-State Relay
UG VATERSAY "MX"
Eth
Ready
Power
USB x2
ETH
9-48 VDC
DR-4515
Power Supply
1A Fuse
15A Breaker
MR-JX
Electrical Distribution Panel
Neutral Bar
Ground Bar
Pump 1
Pump 2

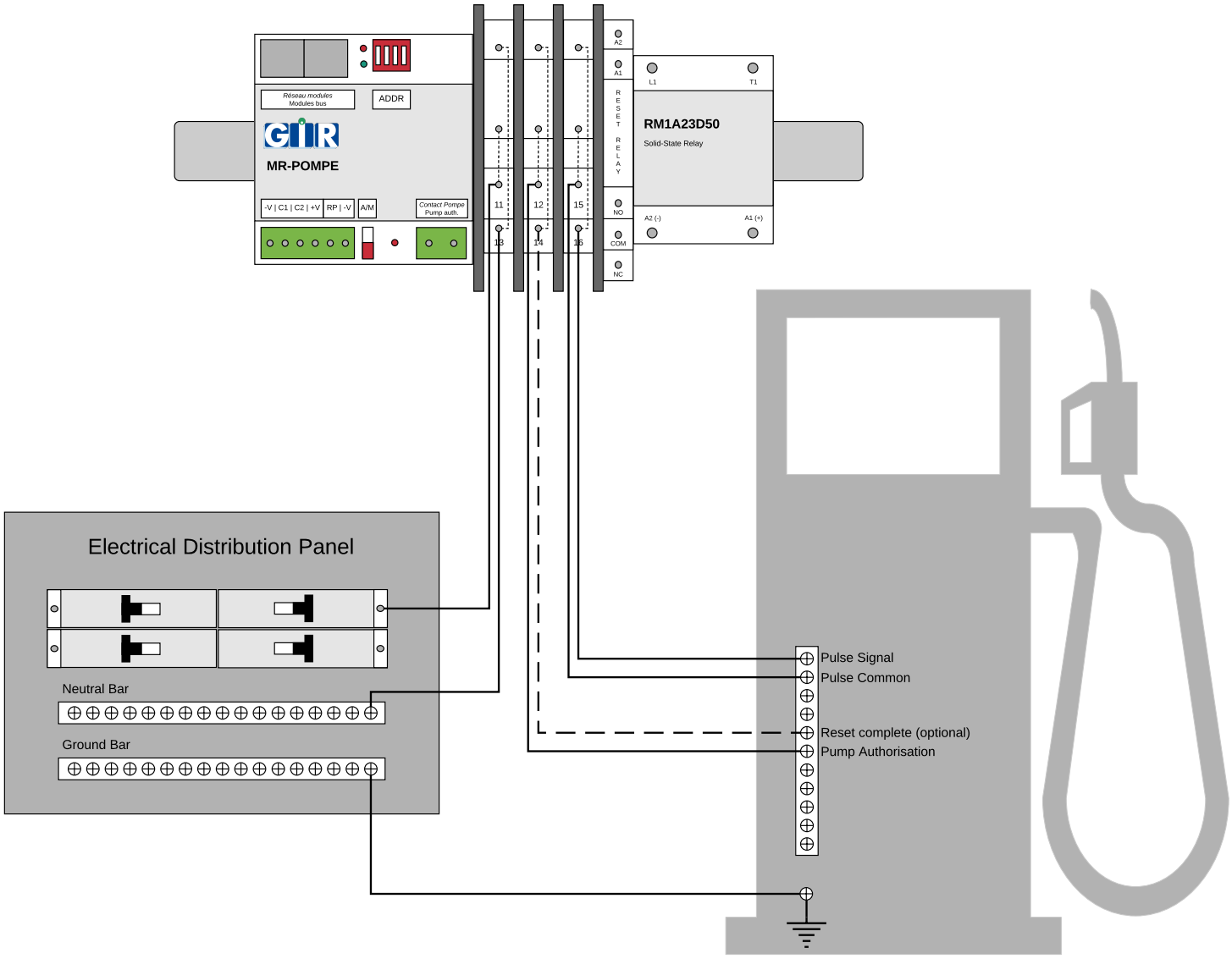
Chapter 3

Pumps wiring

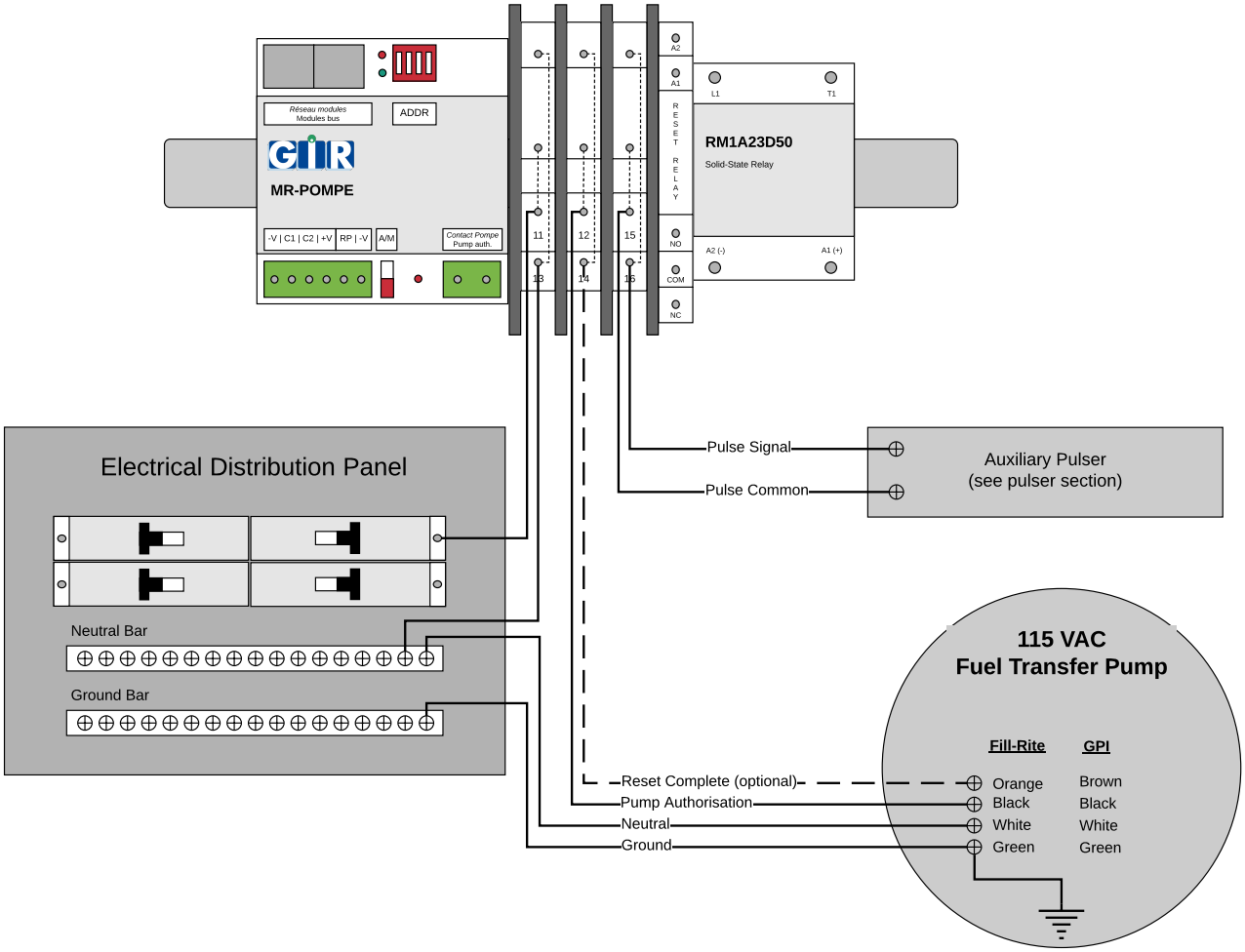
For each hose, we have:

- **authorization output**: 11-12 (or 21-22 for pump #2)
  This is a solid-state relay output suitable for up to 230VAC 30A (3HP).
  Typically 11 is the hot from the electrical panel, and 12 is the hot to the dispenser.
- **reset complete input**: 13-14 (or 23-24 for pump #2)
  This optional input, also known as "in use signal", is used by the GIR unit to end the transaction on nozzle hangup.
  If unused, the GIR unit will end transactions on a timeout basis.
  Typically 13 is neutral, and 14 is hot when reset complete is done (hose in use).
- **pulse emitter input**: 15-16 (or 25-26 for pump #2)
  This input is used to capture the quantity dispensed.
  It is rated for up to 15V 40mA.
  The pulse ratio is set in the software, it defaults to 10:1 (10 pulses for 1 gallon, or 10 pulses for 1 liter).

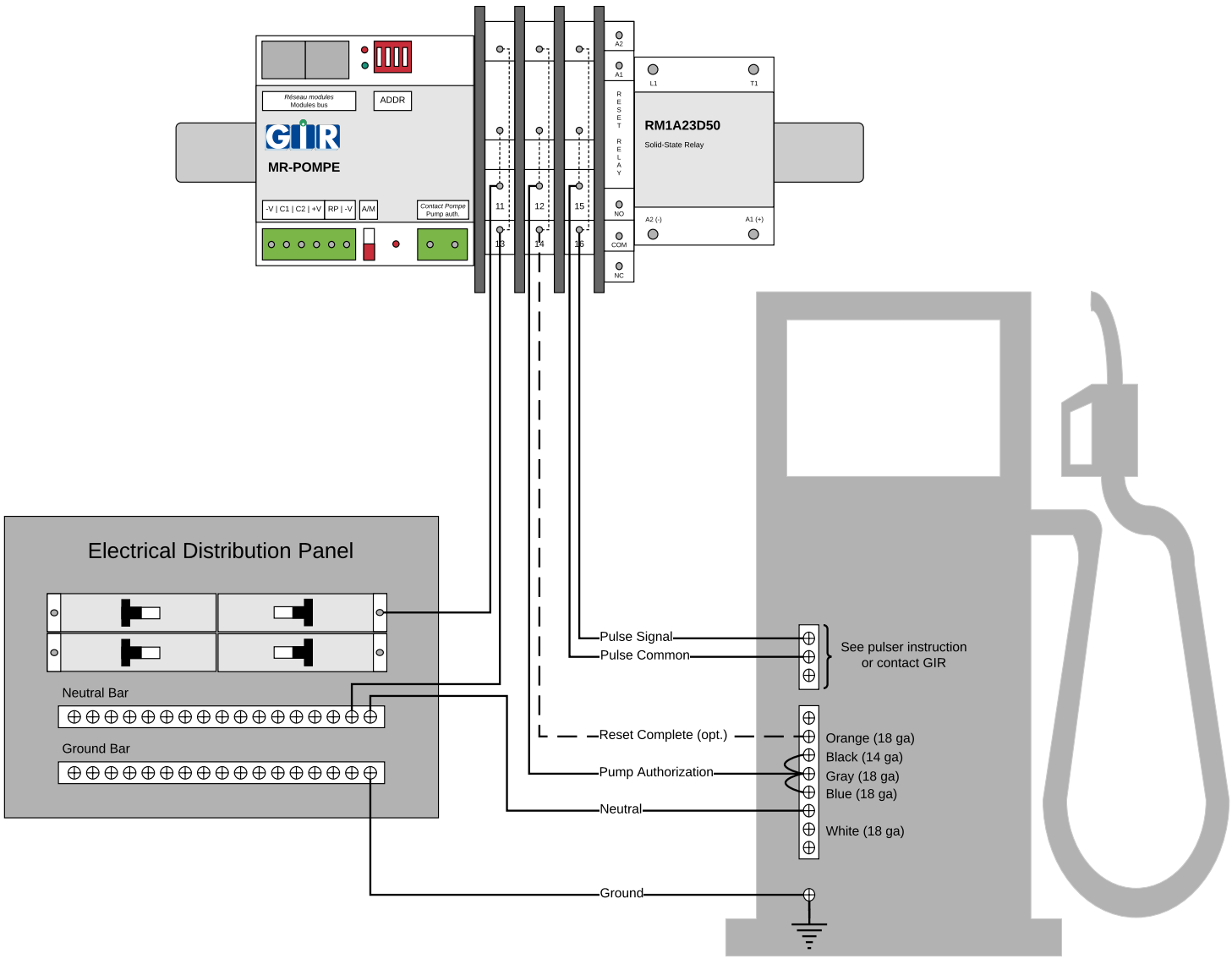
3.1 Generic wiring



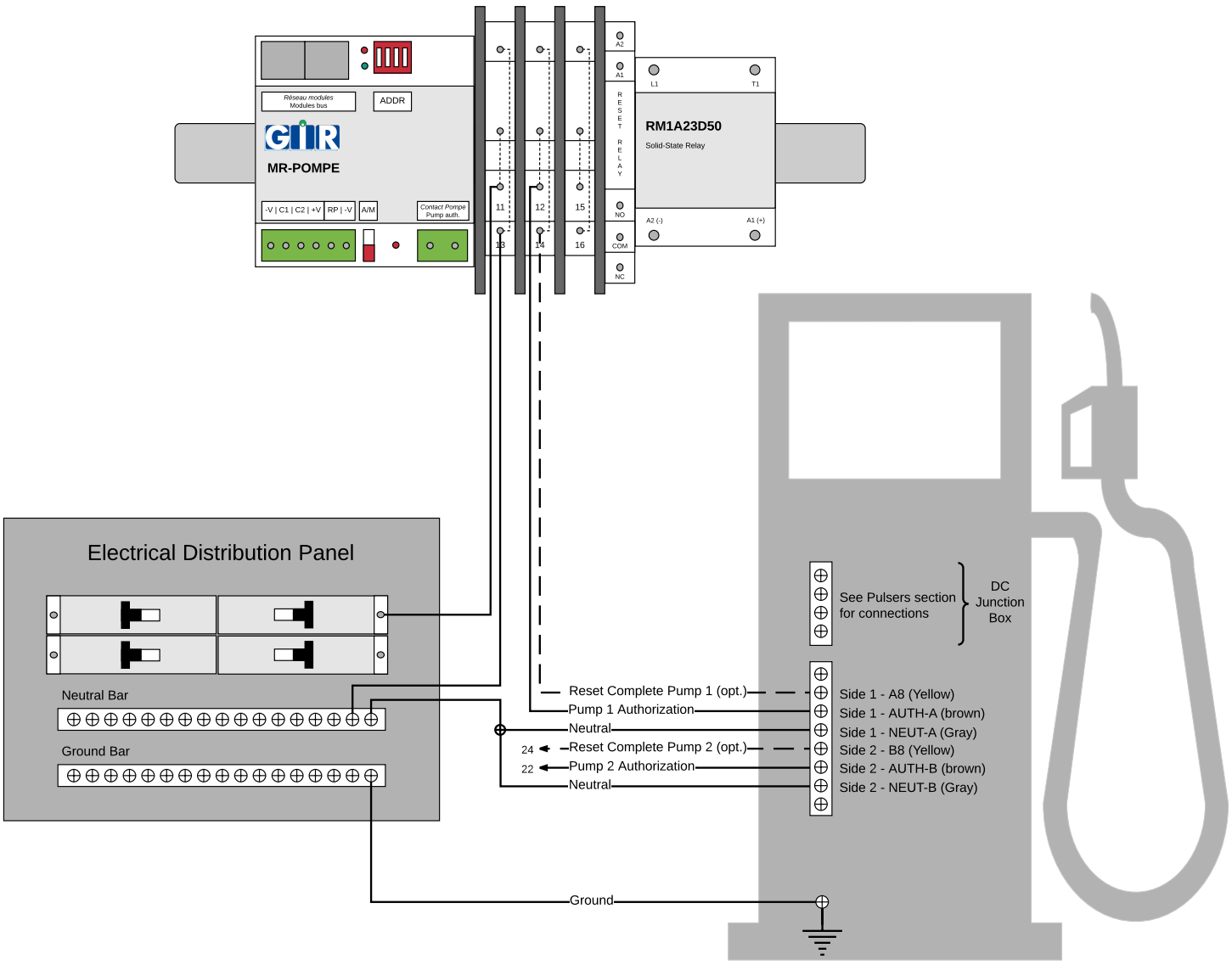
3.2 Fill-Rite / GPI (Mechanical)



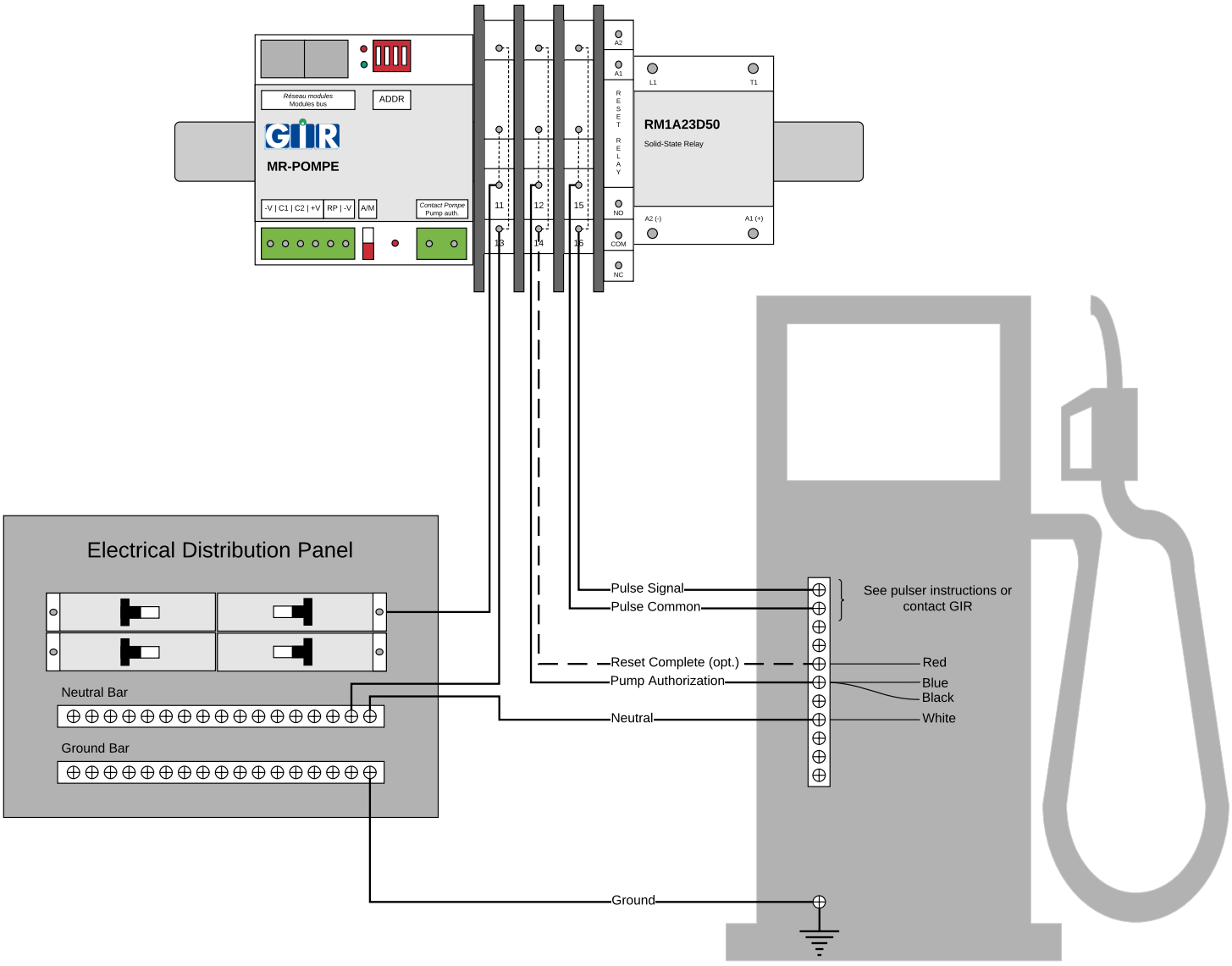
3.3 Gasboy Atlas 9100 (Mechanical)



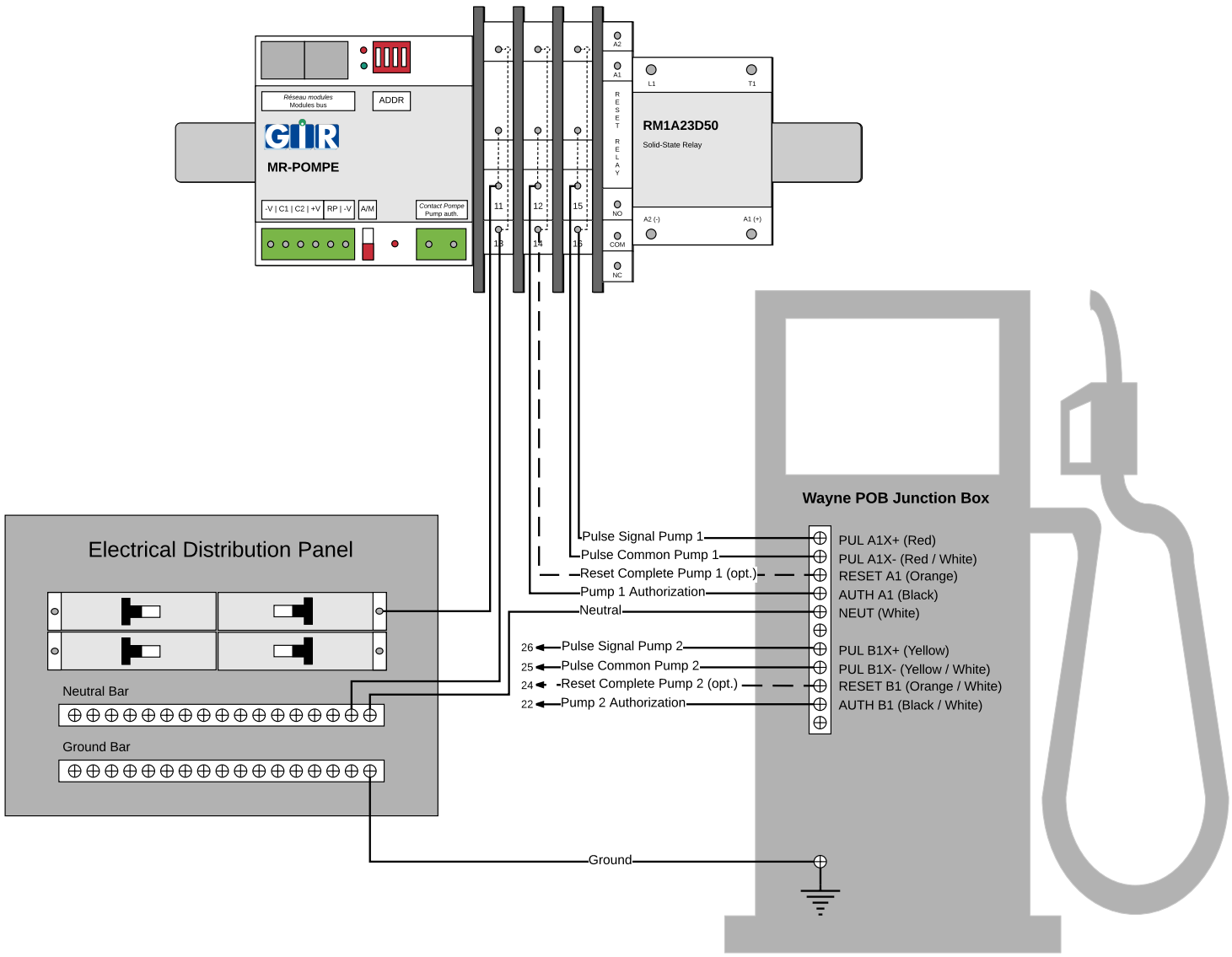
3.4 Gasboy Atlas 9800 (Electronic)



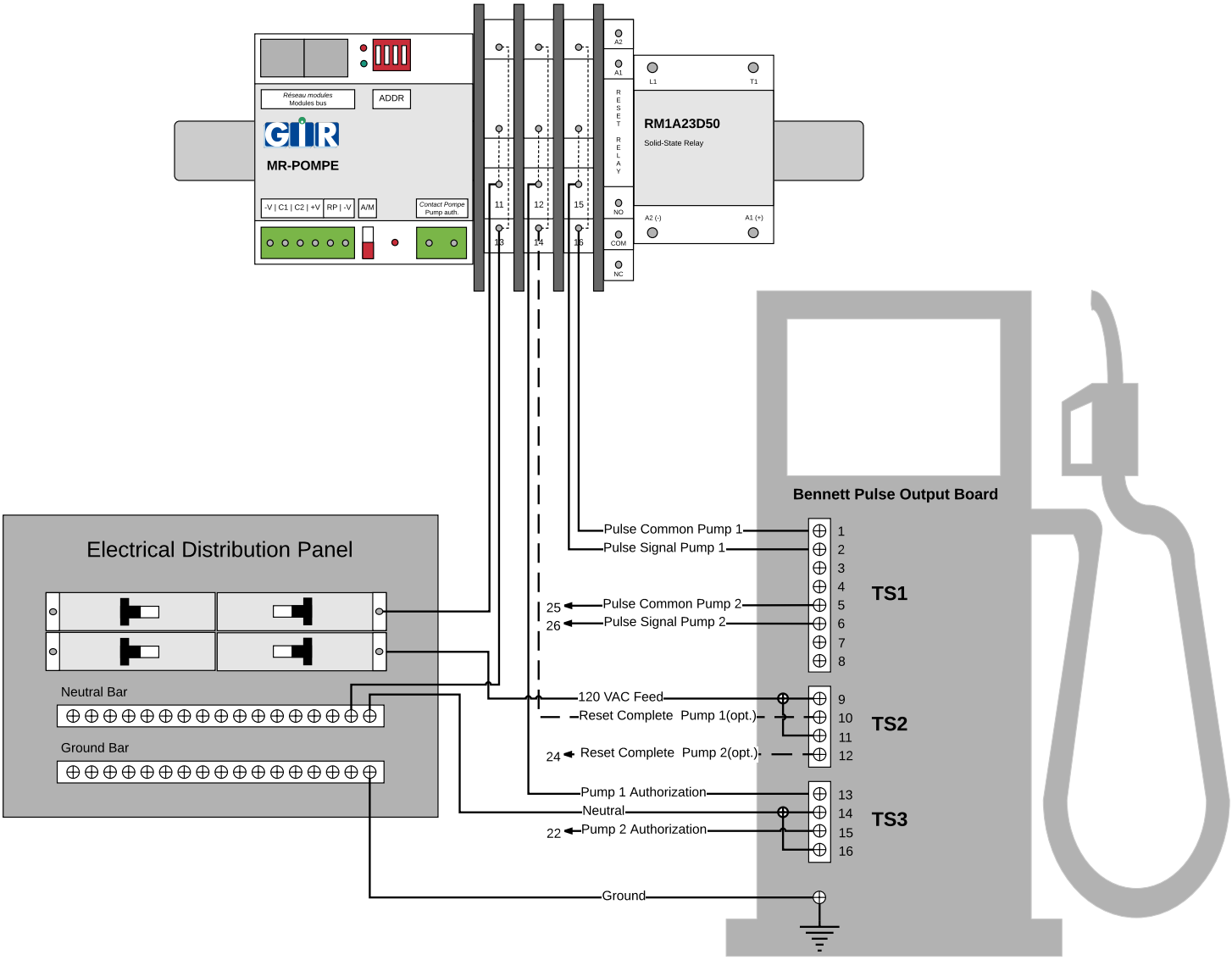
3.5 Wayne Reliance (Mechanical)



3.6 Wayne Select (Electronic)



3.7 Bennett 3000 (Electronic)



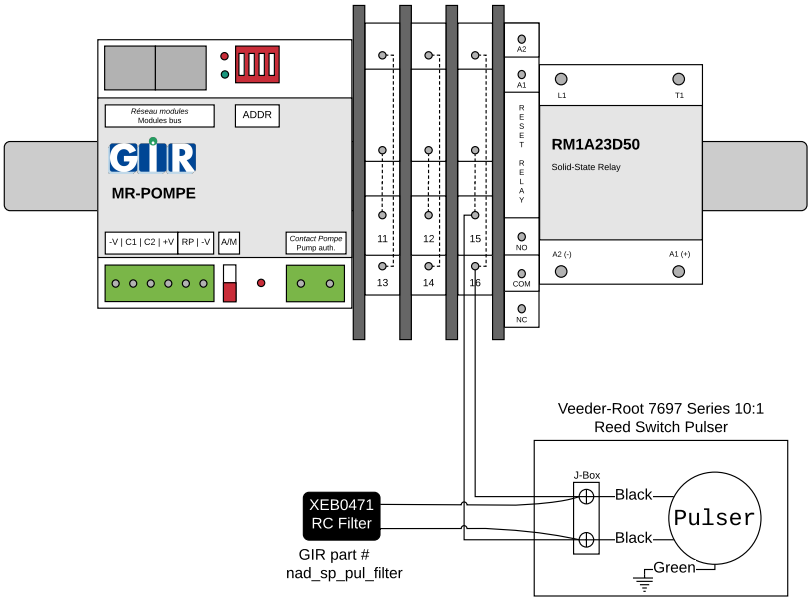
Chapter 4

Pulsers wiring

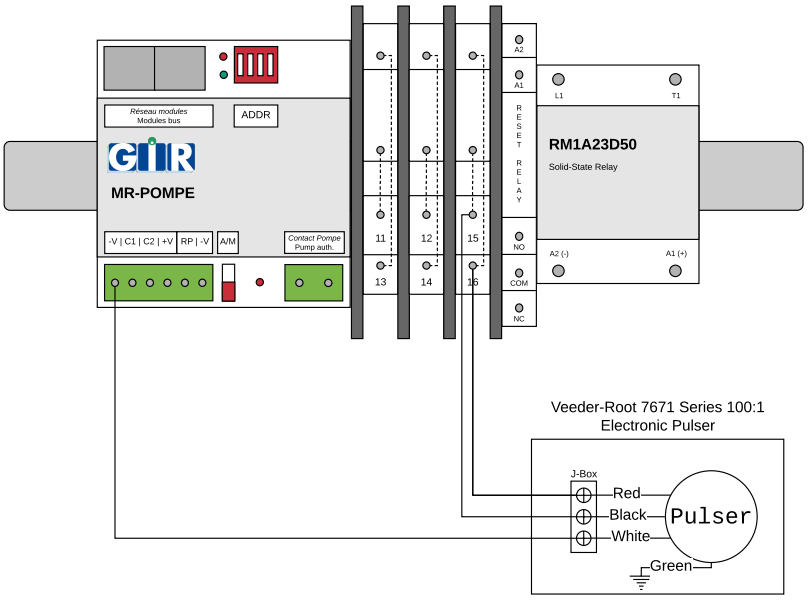
The purpose of the pulse input is to capture how much gasoline is dispensed.

- for mechanical dispensers, the pulse emitter is directly wired to the GIR pulse input
- for electronic dispensers, we typically wire a pulse output from the dispenser board to the GIR pulse input;
  Depending on the dispenser model, this pulse output may be a built-in feature of the dispenser board, or it may requires an optional pulse output board.
- the pulse ratio, which tells the system how many pulses make a gallon or a liter, is set in the GIR software, it defaults to 10:1

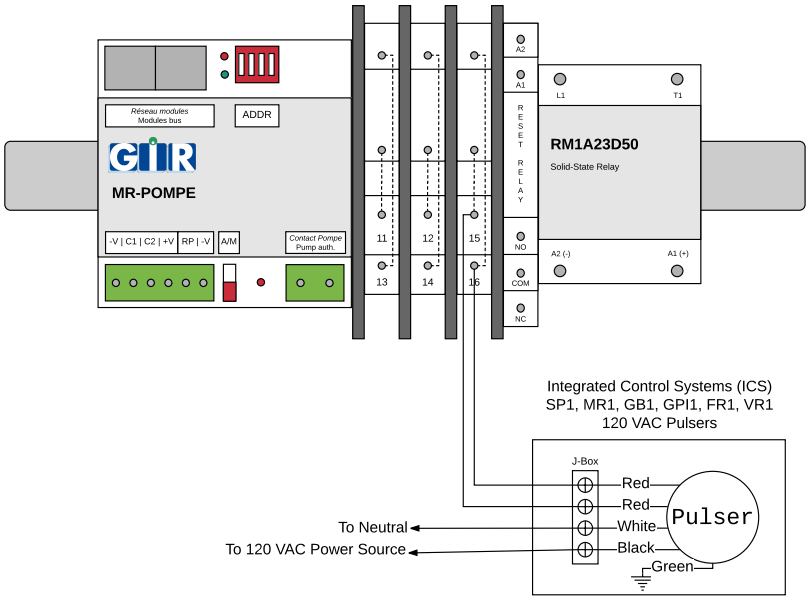
4.1 Veeder-Root 7697



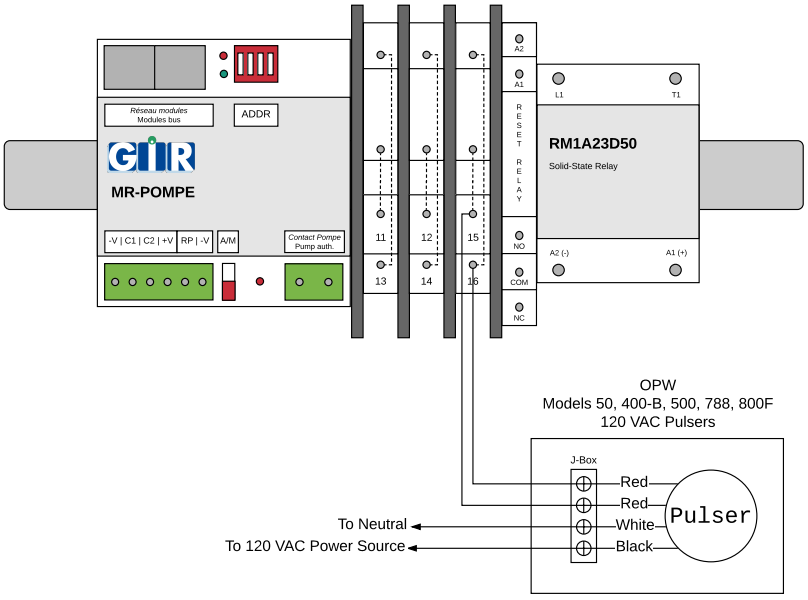
4.2 Veeder-Root 7671



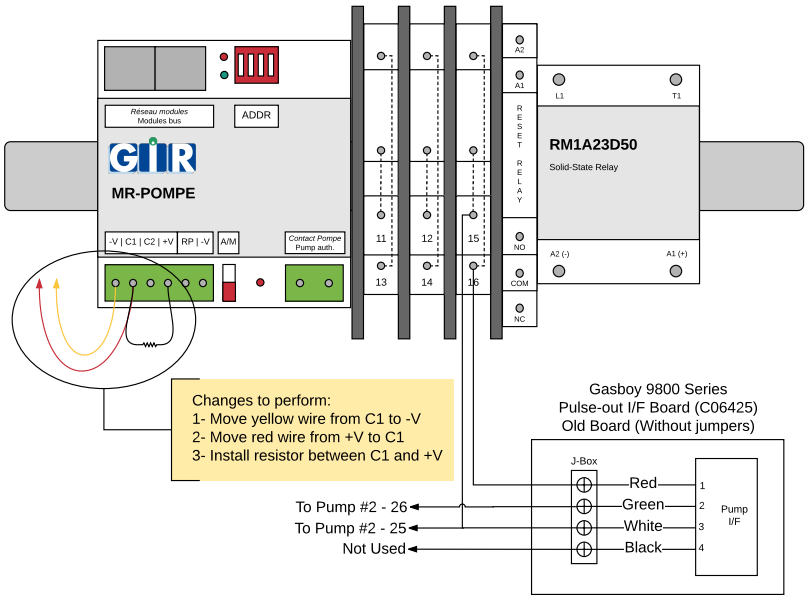
4.3 ICS


Réseau modules
Modules bus
ADDR
MR-POMPE
-V | C1 | C2 | +V
RP | -V
A/M
Contact Pompe
Pump auth.
11
12
15
13
14
16
A2
A1
RESET
RELAY
NO
COM
NC
L1
T1
RM1A23D50
Solid-State Relay
A2 (-)
A1 (+)
Integrated Control Systems (ICS)
SP1, MR1, GB1, GPI1, FR1, VR1
120 VAC Pulsers
J-Box
Red
Red
White
Black
Green
Pulser
To Neutral
To 120 VAC Power Source

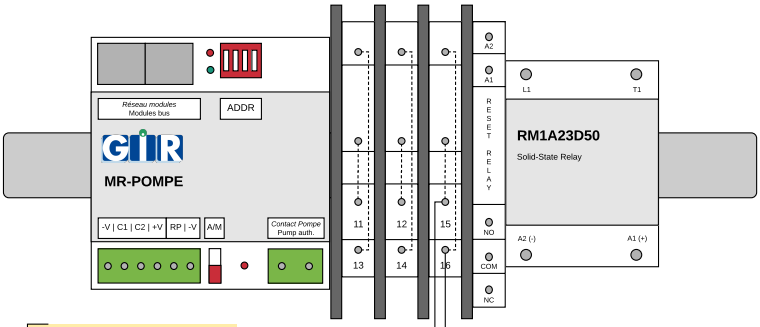
4.4 OPW


Réseau modules
Modules bus
ADDR
MR-POMPE
-V | C1 | C2 | +V
RP | -V
A/M
Contact Pompe
Pump auth.
11
12
15
13
14
16
A2
A1
RESET
RELAY
NO
COM
NC
L1
T1
RM1A23D50
Solid-State Relay
A2 (-)
A1 (+)
OPW
Models 50, 400-B, 500, 788, 800F
120 VAC Pulsers
J-Box
Red
Red
White
Black
Pulser
To Neutral
To 120 VAC Power Source

4.5 Gasboy 9800 old



4.6 Gasboy 9800 new

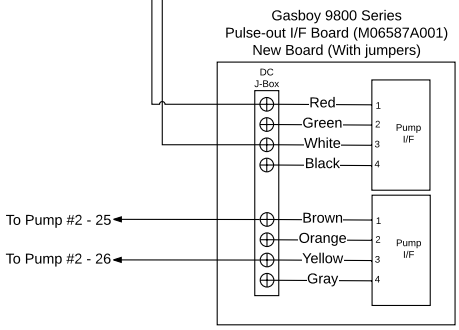


CPU board configuration:
1- CPU JP2= ON
(Standalone operation)
2- CPU JP6= ON
(Authorization enabled)
3- For pulse rate and units
see tables below

Pulse I/F board configuration:
JP1= Position 2
JP2= Position 2
JP3= Jumpered

Pulse	SW2-1	SW2-2	SW2-3
10:1	Open	Closed	Closed
100:1	Closed	Open	Closed

Units	SW2-5	SW2-6
US	Closed	Closed
Liters	Open	Closed
Imperial	Closed	Open



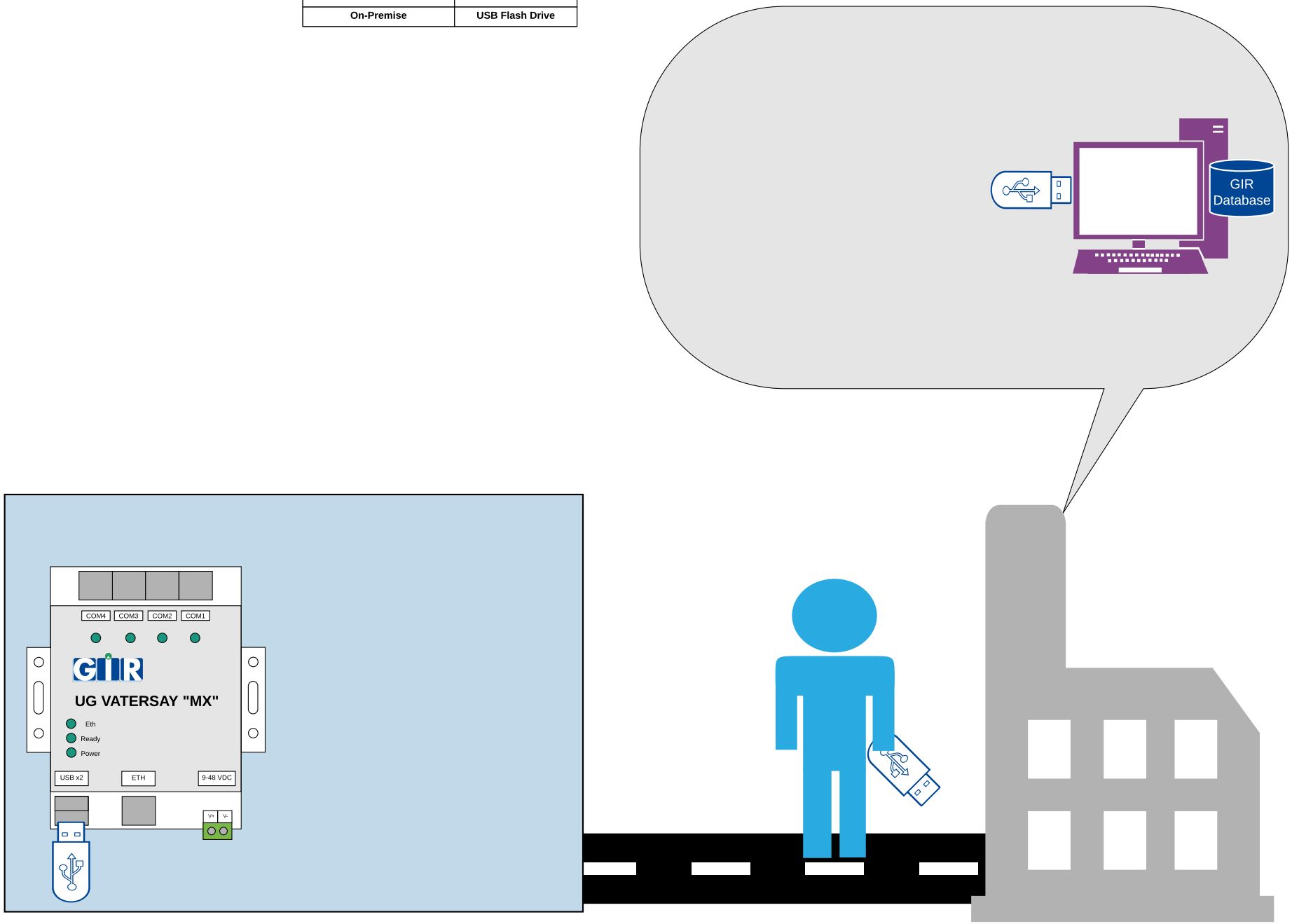
Chapter 5

Software communication

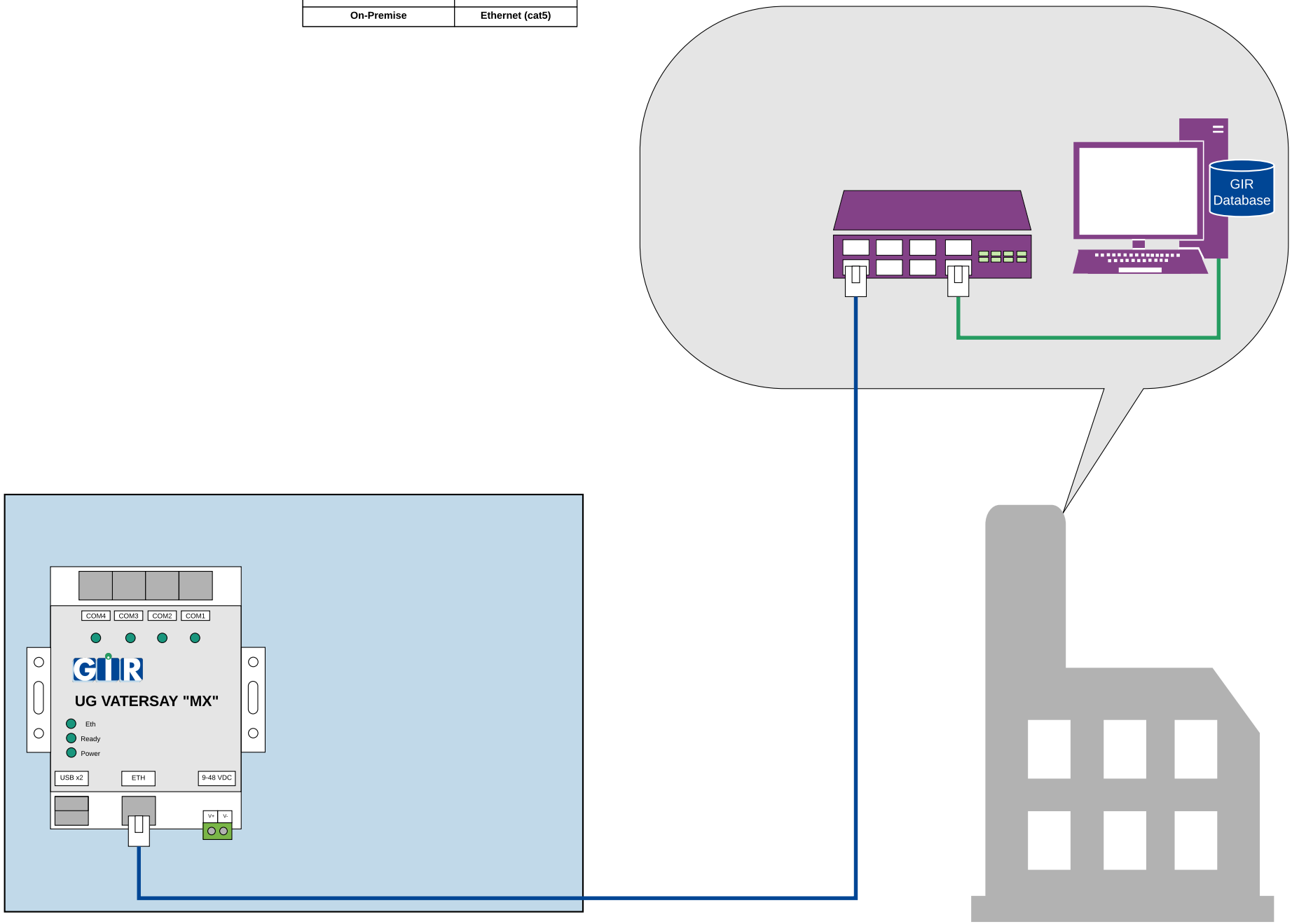
GIR TIP/GCA hardware terminal is designed to work with a GIR software, which could be either on-premise ("On-Prem."), or in the cloud ("SaaS"). In the following pages, you'll find how to set up the hardware/software communication for:

1. USB flash drive communication, w/ On-Prem. software
2. Ethernet (cat5) communication, w/ On-Prem. software
3. Wi-Fi communication, w/ On-Prem. software
4. Ethernet (cat5) communication, w/ cloud-based SaaS software
5. Wi-Fi communication, w/ cloud-based SaaS software
6. Cellular (GSM) communication, w/ cloud-based SaaS software

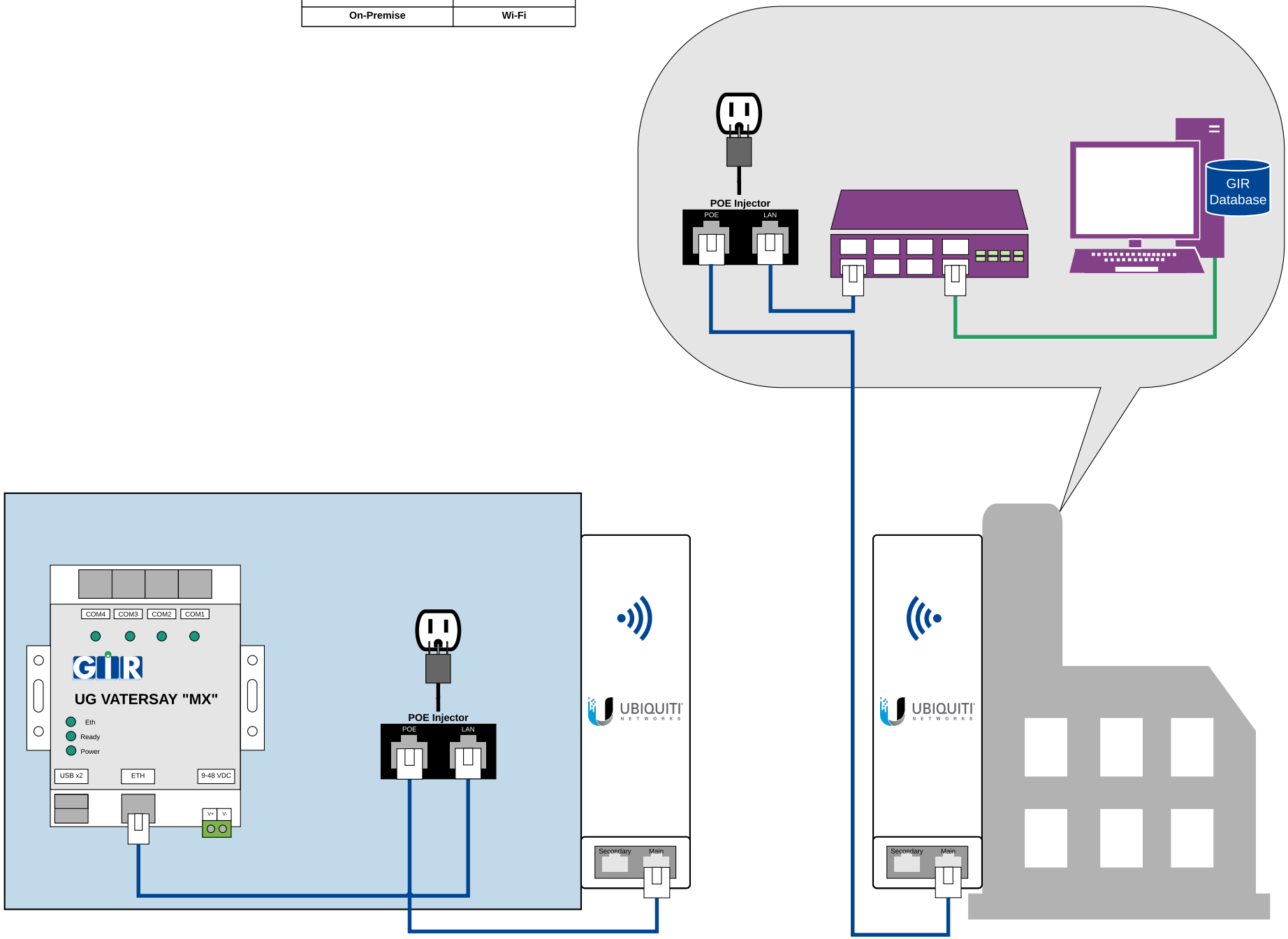
GIR software:	Hardware/software com.:
On-Premise	**USB Flash Drive**

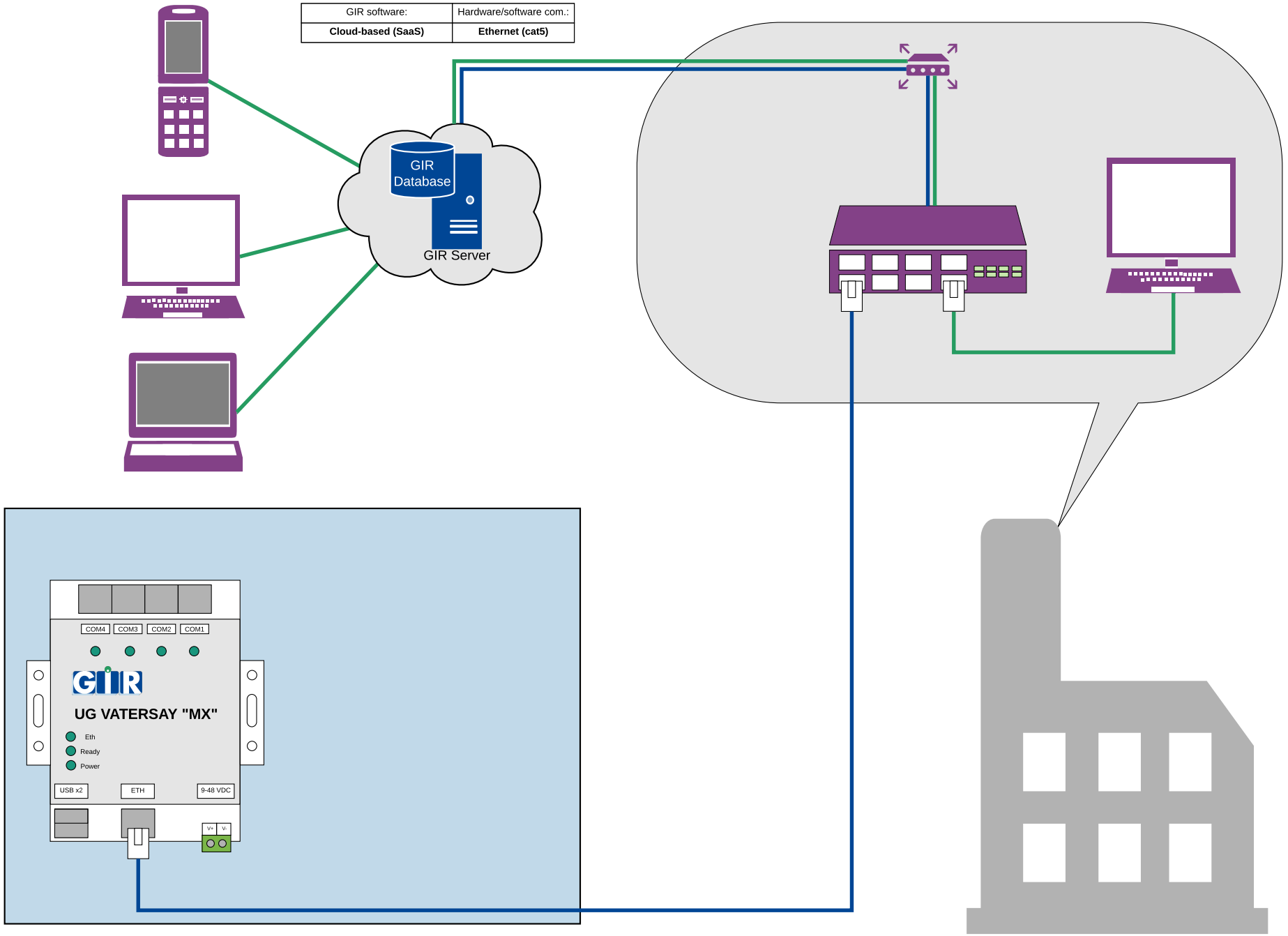


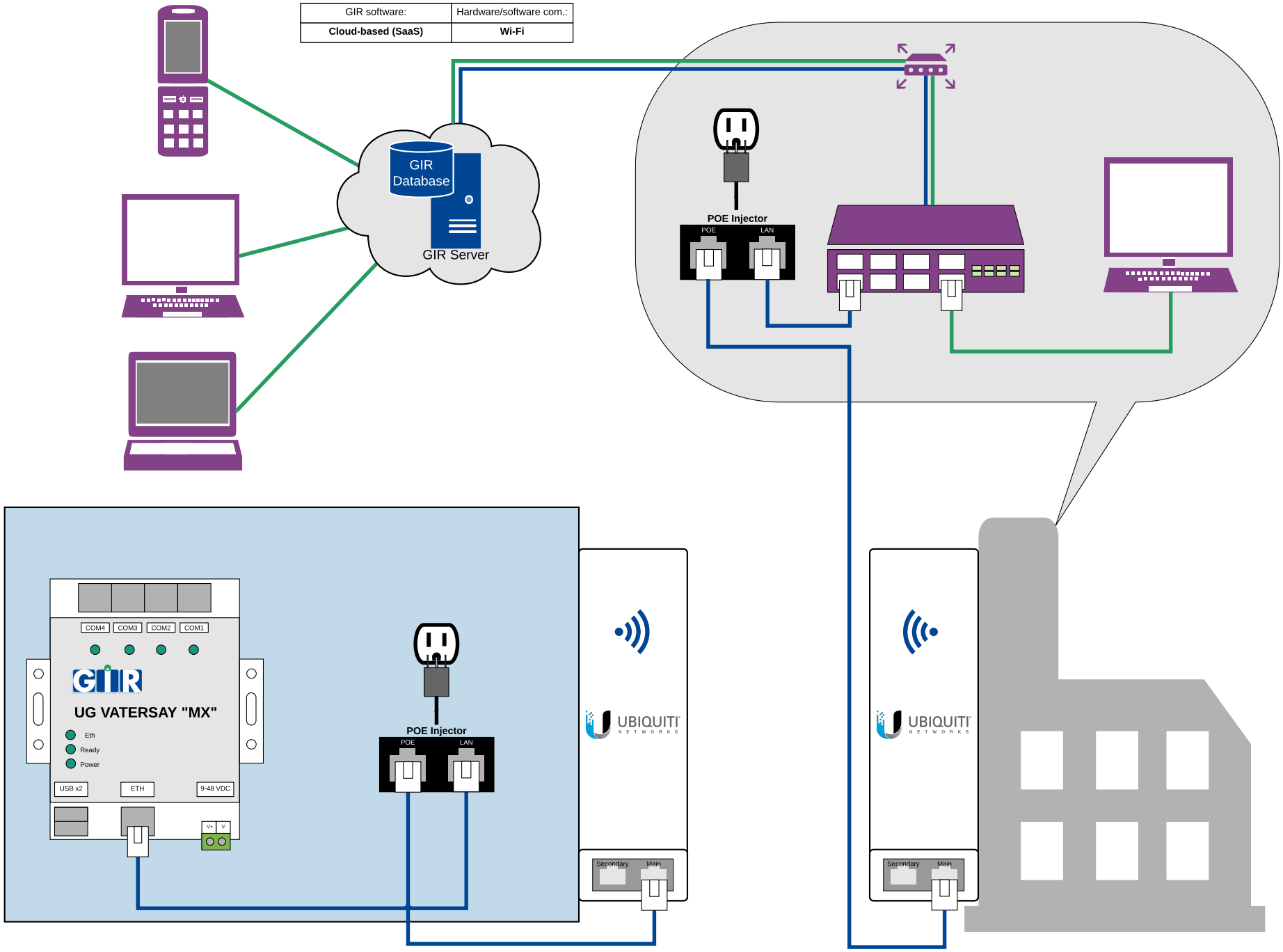
GIR software:	Hardware/software com.:
On-Premise	**Ethernet (cat5)**

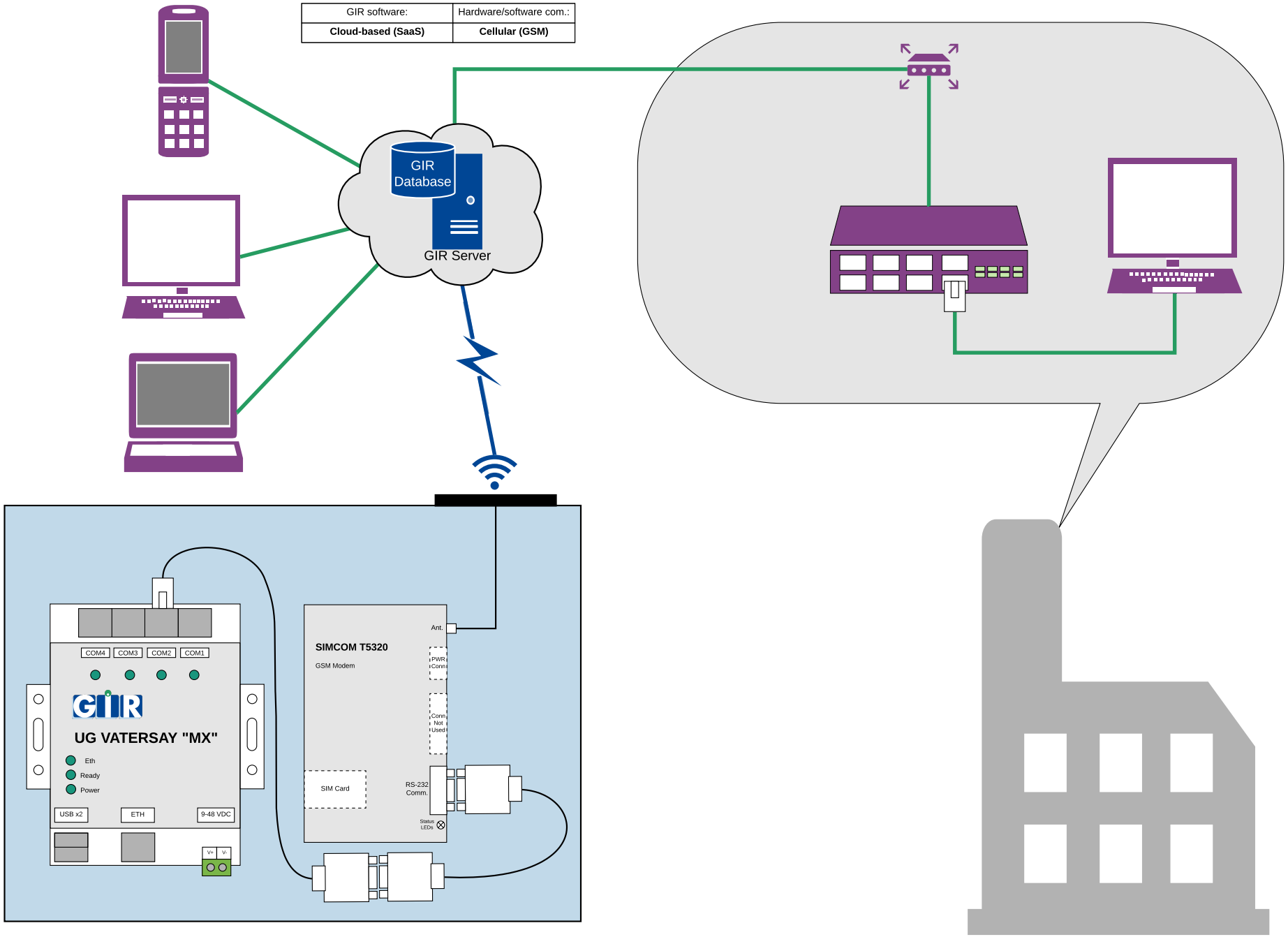


GIR software:	Hardware/software com.:
On-Premise	**Wi-Fi**




GIR software:
Hardware/software com.:
Cloud-based (SaaS)
Ethernet (cat5)
GIR Database
GIR Server
COM4
COM3
COM2
COM1
UG VATERSAY "MX"
Eth
Ready
Power
USB x2
ETH
9-48 VDC
V+
V-


GIR software:
Hardware/software com.:
Cloud-based (SaaS)
Wi-Fi
GIR Database
GIR Server
POE Injector
POE
LAN
COM4
COM3
COM2
COM1
UG VATERSAY "MX"
Eth
Ready
Power
USB x2
ETH
9-48 VDC
V+
V-
POE Injector
POE
LAN
UBIQUITI
NETWORKS
Secondary
Main
UBIQUITI
NETWORKS
Secondary
Main

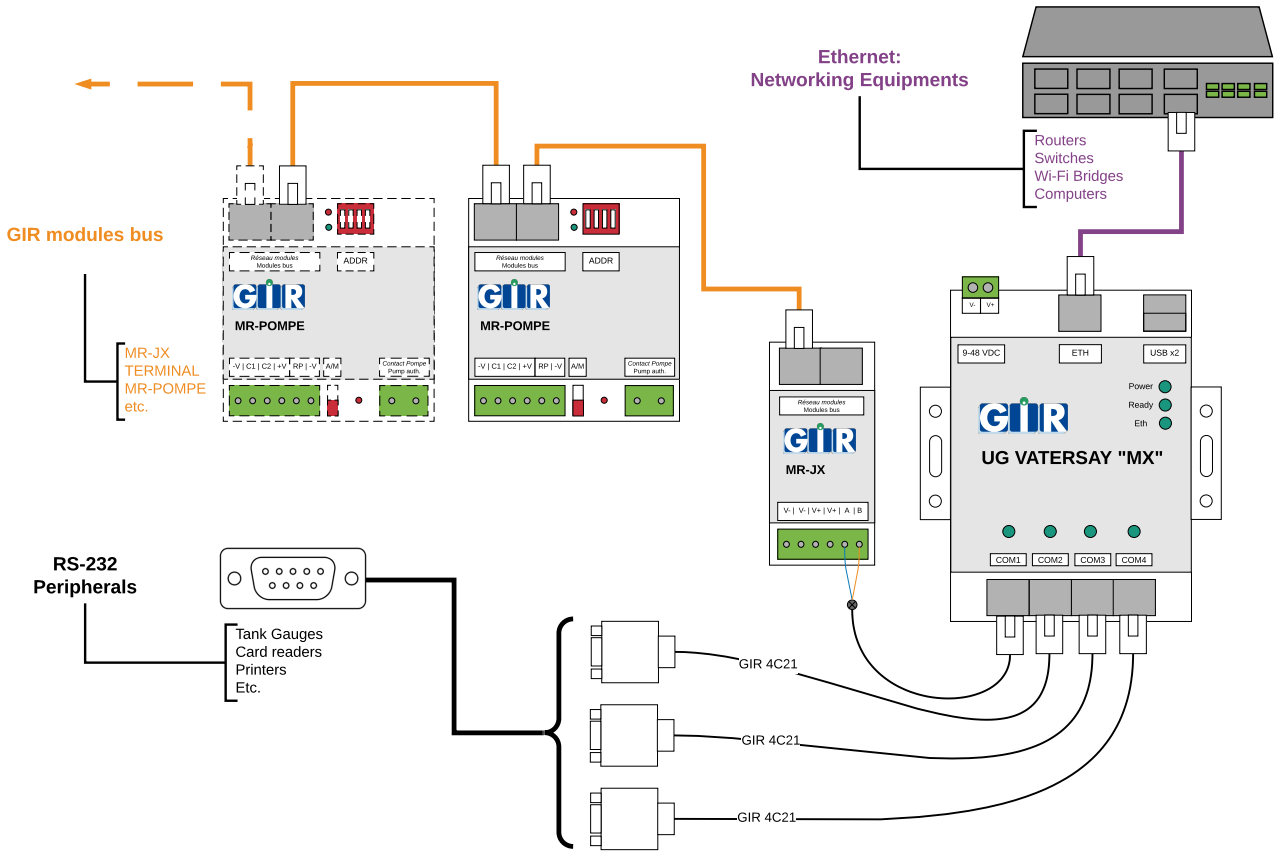

GIR software:
Cloud-based (SaaS)
Hardware/software com.:
Cellular (GSM)
GIR Database
GIR Server
COM4
COM3
COM2
COM1
UG VATERSAY "MX"
Eth
Ready
Power
USB x2
ETH
9-48 VDC
V+
V-
SIMCOM T5320
GSM Modem
Ant.
PWR Conn
Conn Not Used
SIM Card
RS-232 Comm.
Status LEDs

Chapter 6

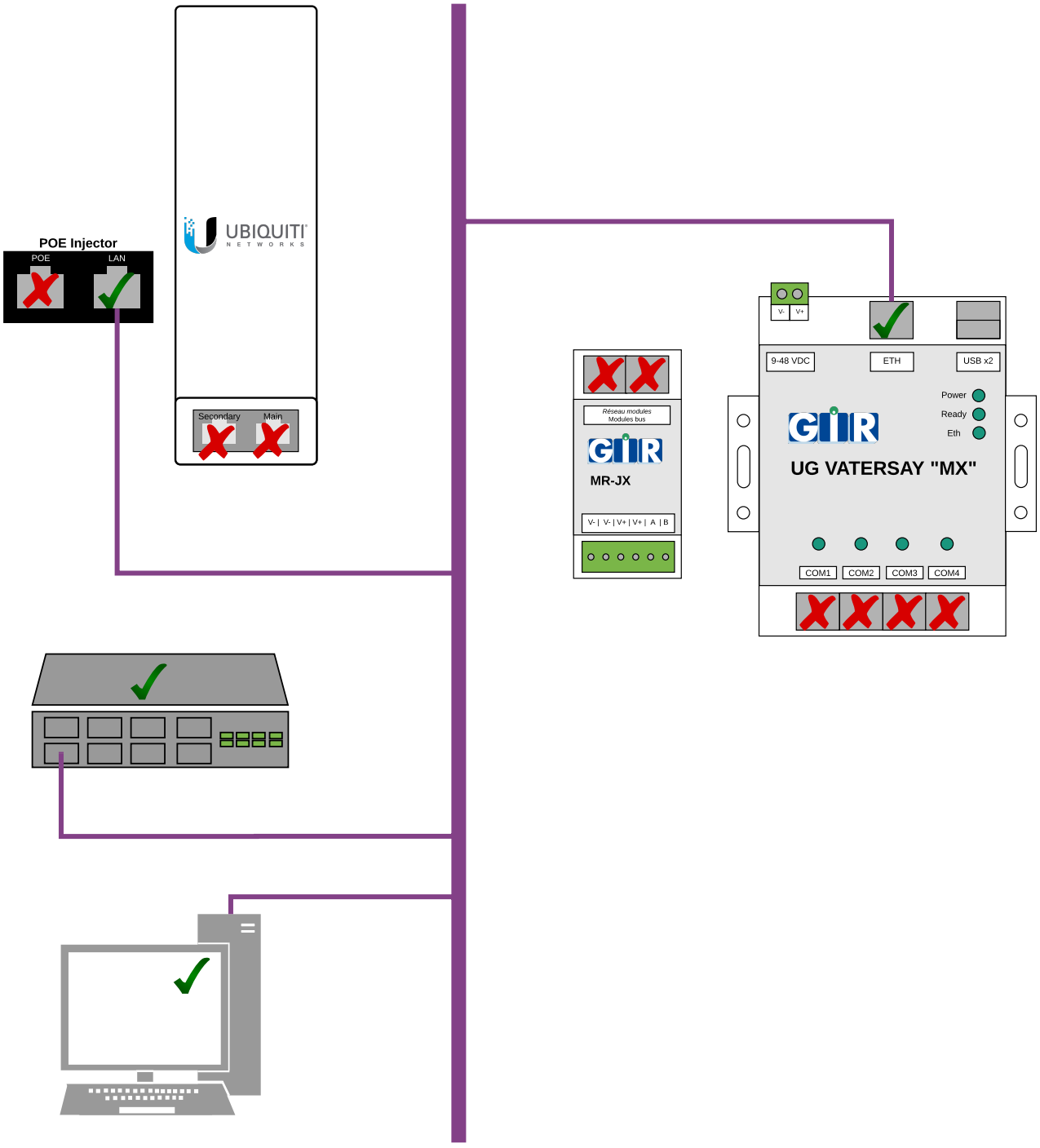
RJ45 families

GIR TIP/GCA hardware uses RJ45 extensively due to its convenience, but please note they are **not** all interchangeables. We do have 3 separate RJ45 families in the GIR unit:

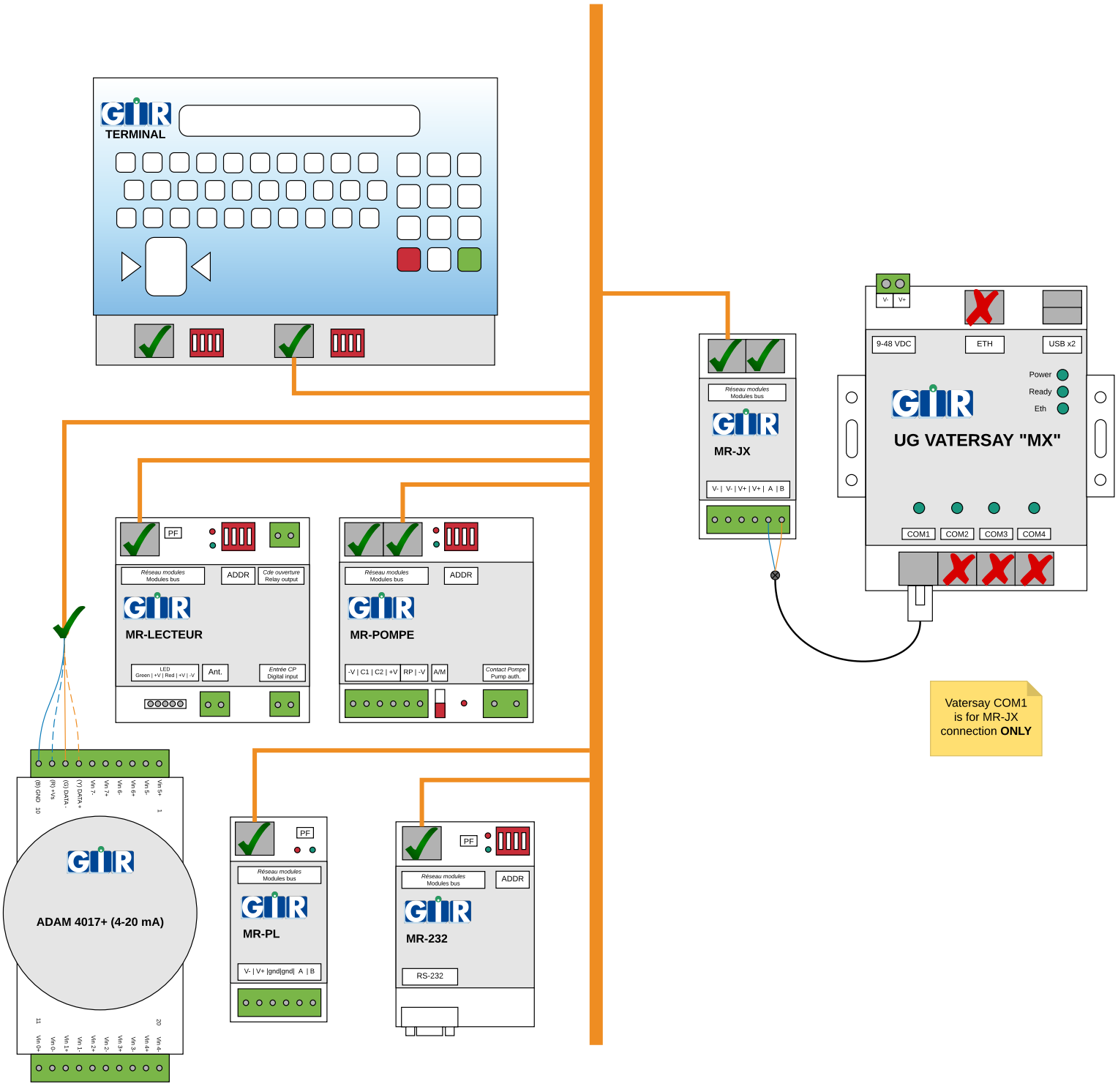
- Ethernet: there's only one, on the Vatersay unit, next to the USB ports; use it to connect to computer networks, or Wi-Fi bridges.
- GIR modules bus: this is the RJ45 you have on all the GIR MR- modules; they are daisy-chained
- Vatersay COM1: only for MR-JX connection
- Vatersay COM2, COM3, or COM4: only for GIR 4C21 adapter
  GIR 4C21 RJ45 end is inserted into Vatersay COM2, COM3, or COM4
  GIR 4C21 DB9 end is connected to RS-232 devices



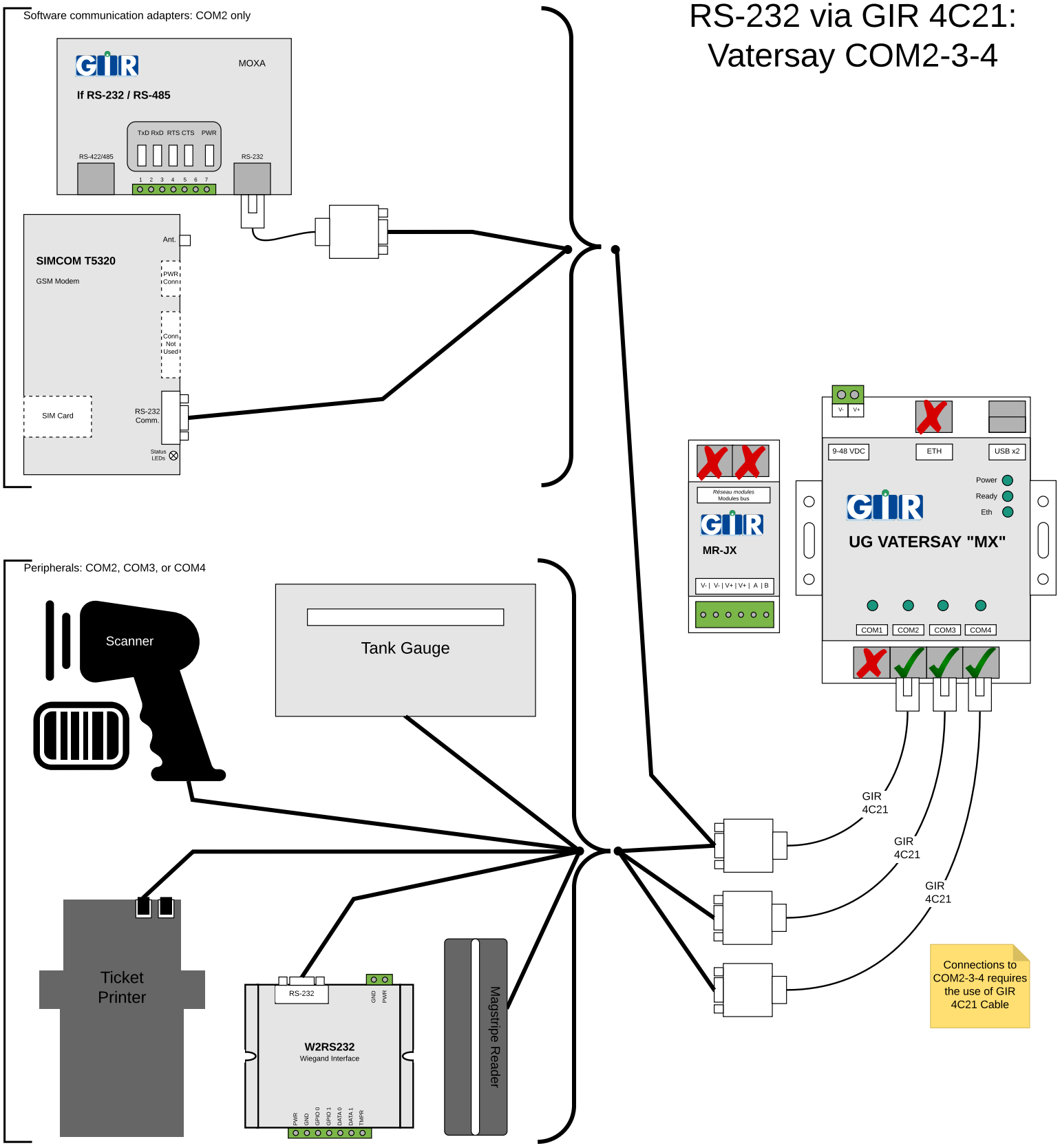
Ethernet:
only on Vatersay **ETH**



GIR modules bus:
all GIR MR- modules

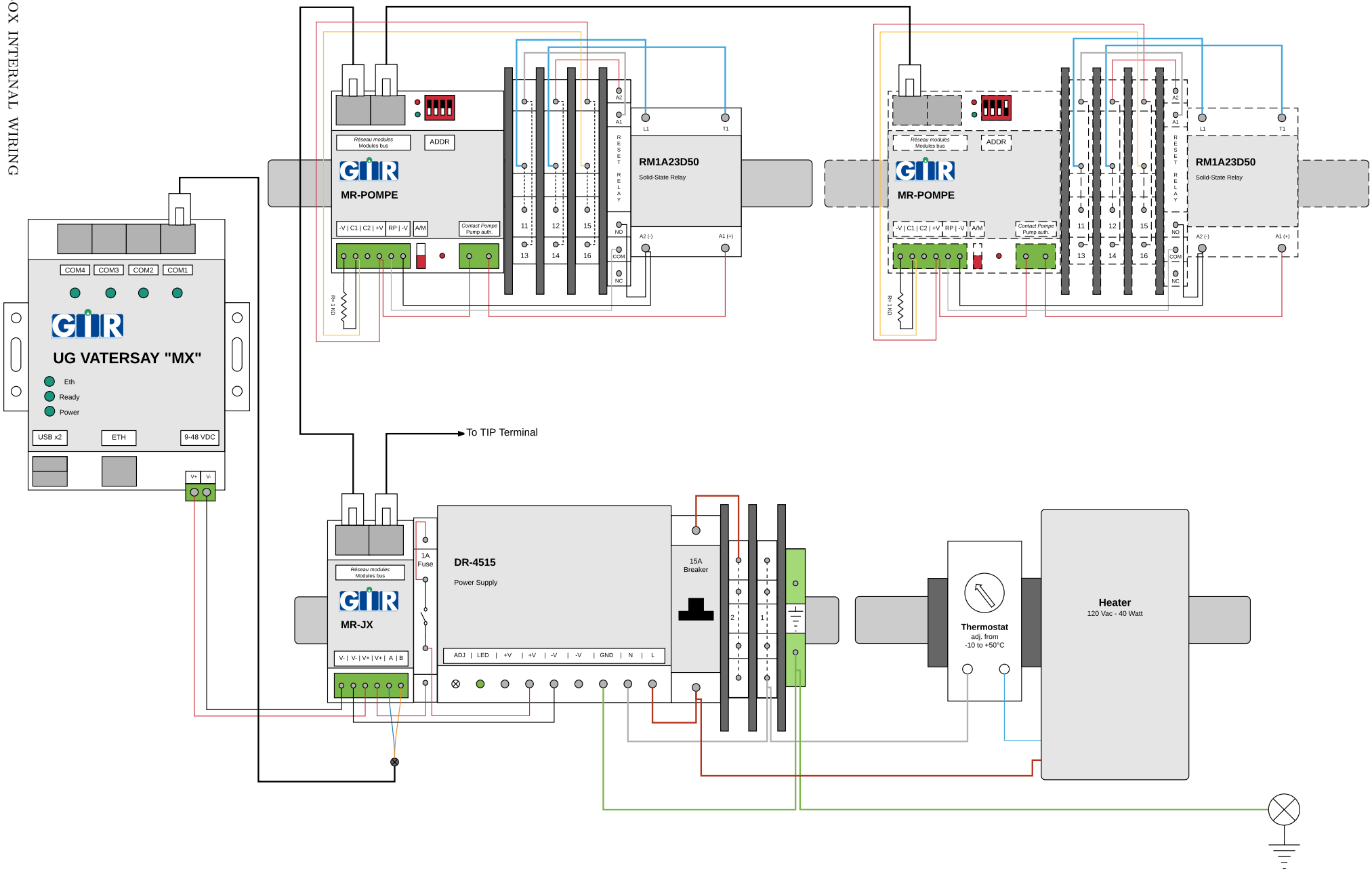


RS-232 via GIR 4C21: Vatersay COM2-3-4

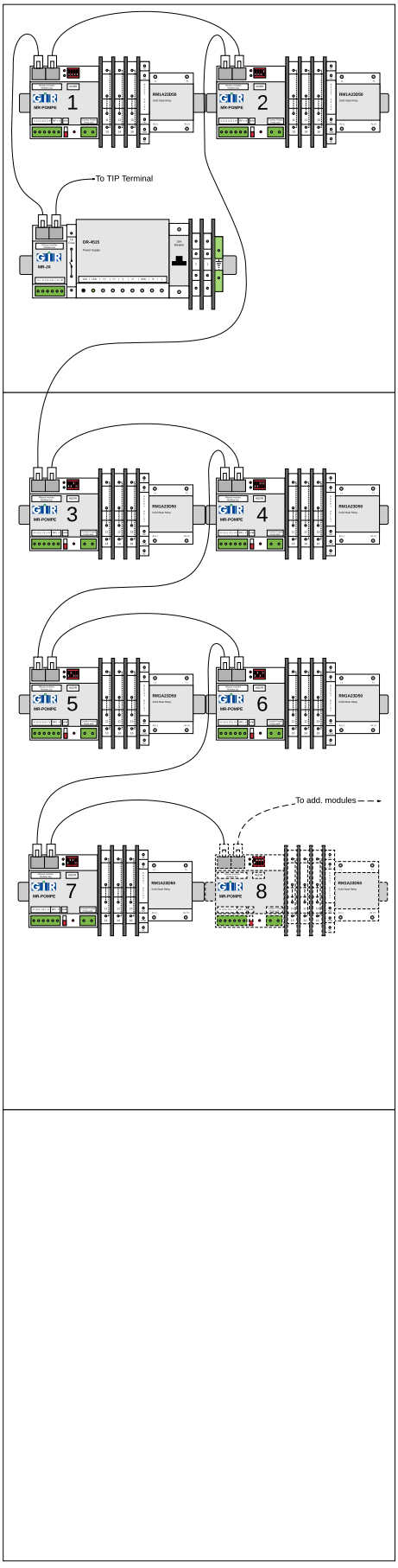


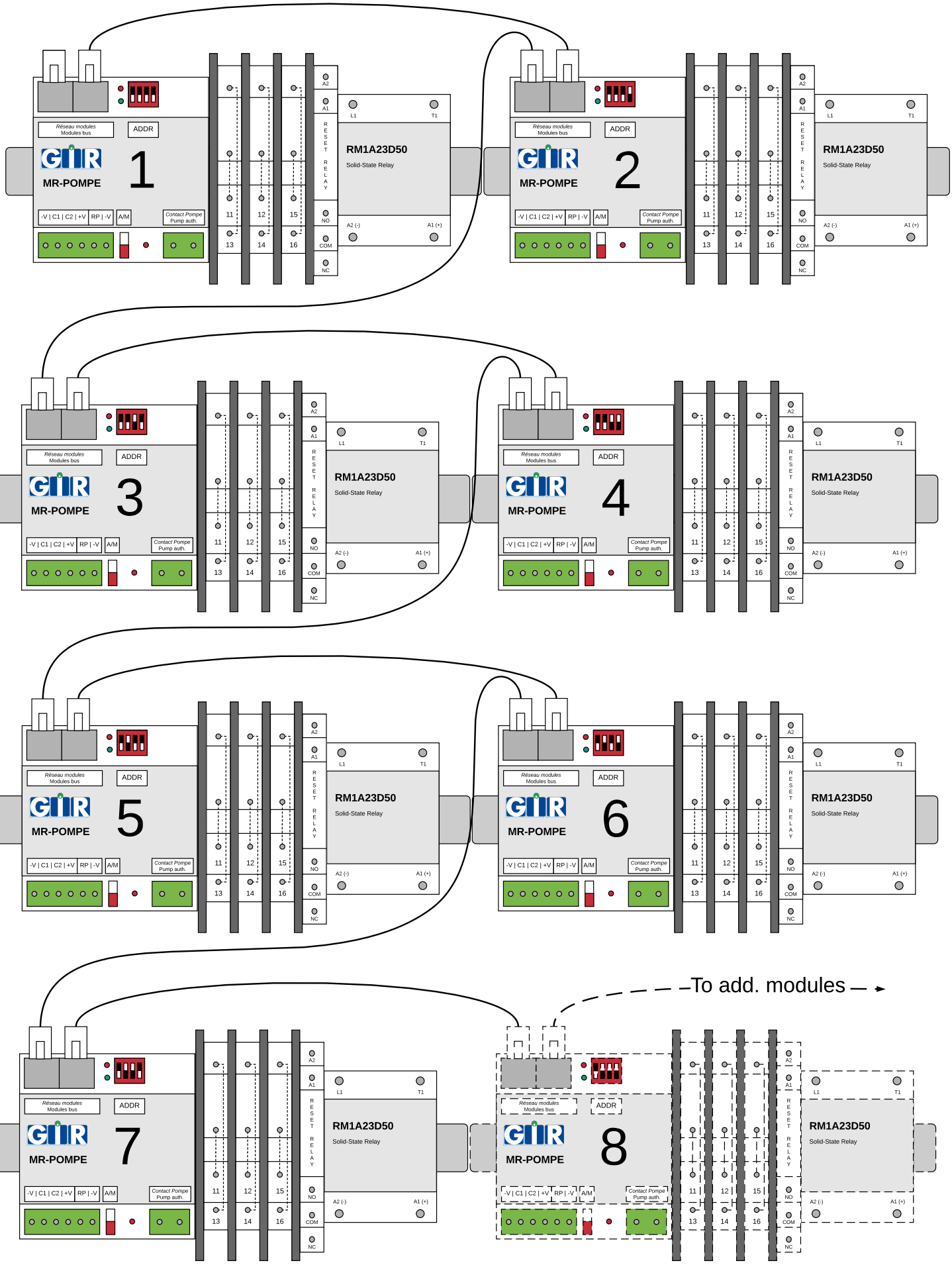
Appendix A

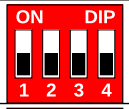
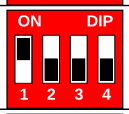
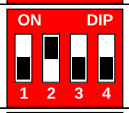
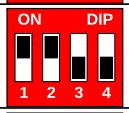
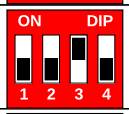
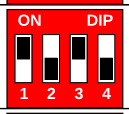
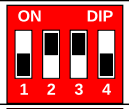
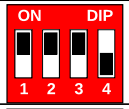
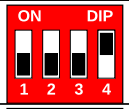
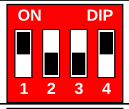
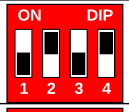
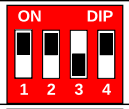
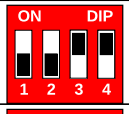
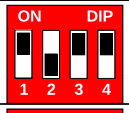
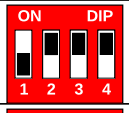
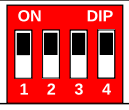
Other ressources

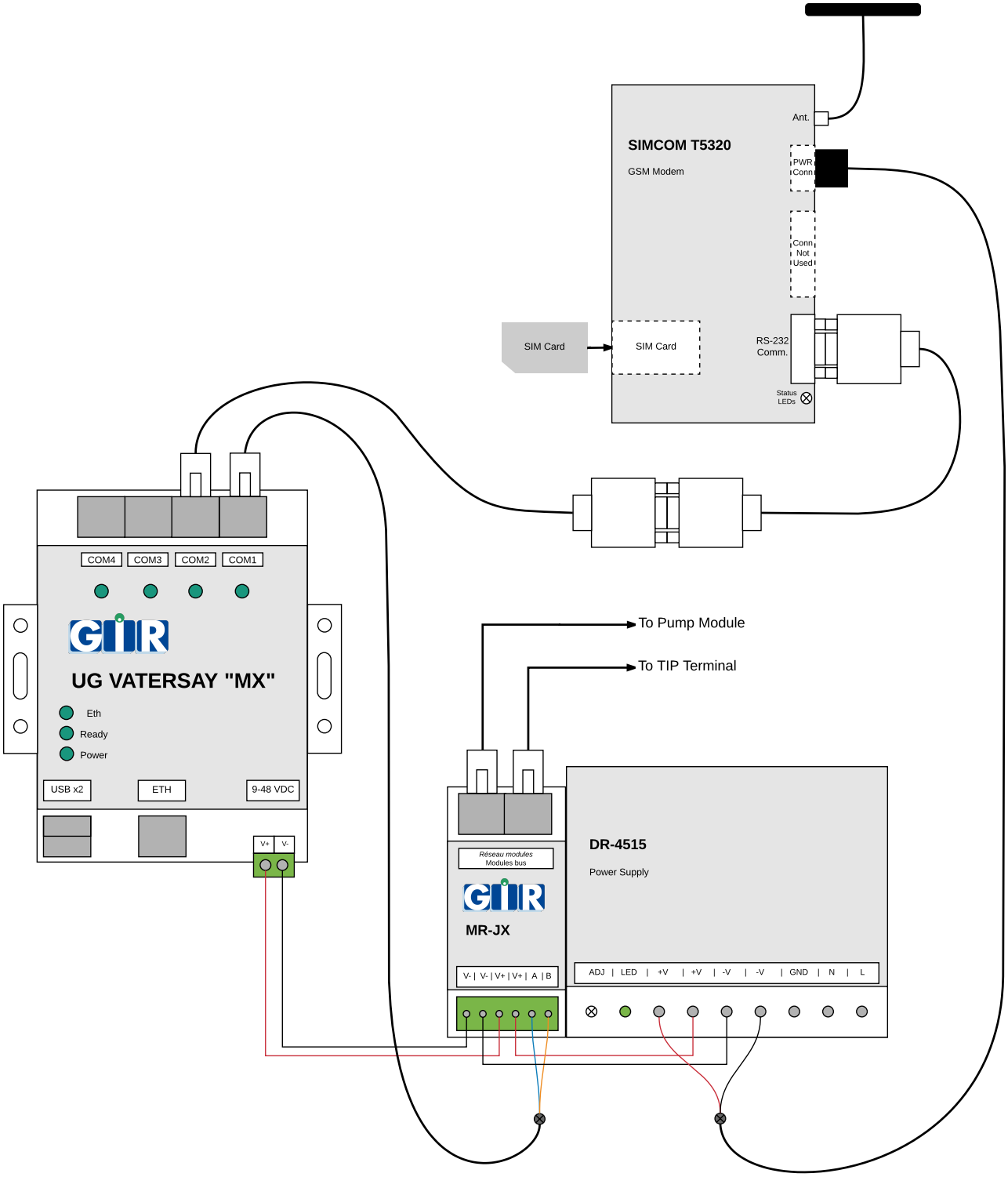

COM4
COM3
COM2
COM1
UG VATERSAY "MX"
Eth
Ready
Power
USB x2
ETH
9-48 VDC
V+
V-
Réseau modules
Modules bus
ADDR
MR-POMPE
-V | C1 | C2 | +V
RP | -V
A/M
Contact Pompe
Pump auth.
11
12
15
13
14
16
A2
A1
RESET
RELAY
NO
COM
NC
L1
T1
RM1A23D50
Solid-State Relay
A2 (-)
A1 (+)
RT = 10Ω
To TIP Terminal
MR-JX
V- | V- | V+ | V+ | A | B
1A
Fuse
DR-4515
Power Supply
15A
Breaker
ADJ | LED | +V | +V | -V | -V | GND | N | L
2
1
Thermostat
adj. from
-10 to +50°C
Heater
120 Vac - 40 Watt


TERMINAL
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
1 2 3
4 5 6
7 8 9
C 0 E


To TIP Terminal
1
2
3
4
5
6
7
8
To add. modules


Réseau modules
Modules bus
ADDR
MR-POMPE
1
2
3
4
5
6
7
8
-V | C1 | C2 | +V
RP | -V
A/M
Contact Pompe
Pump auth.
RM1A23D50
Solid-State Relay
RESET RELAY
A2
A1
L1
T1
NO
COM
NC
A2 (-)
A1 (+)
11
12
15
13
14
16
To add. modules

Module Number	Module Address	Switchs Settings 1-2-3-4	View
1	0	off-off-off-off	
2	1	ON-off-off-off	
3	2	off-ON-off-off	
4	3	ON-ON-off-off	
5	4	off-off-ON-off	
6	5	ON-off-ON-off	
7	6	off-ON-ON-off	
8	7	ON-ON-ON-off	
9	8	off-off-off-ON	
10	9	ON-off-off-ON	
11	10	off-ON-off-ON	
12	11	ON-ON-off-ON	
13	12	off-off-ON-ON	
14	13	ON-off-ON-ON	
15	14	off-ON-ON-ON	
16	15	ON-ON-ON-ON	


SIMCOM T5320
GSM Modem
Ant.
PWR Conn
Conn Not Used
SIM Card
SIM Card
RS-232 Comm.
Status LEDs
COM4
COM3
COM2
COM1
UG VATERSAY "MX"
Eth
Ready
Power
USB x2
ETH
9-48 VDC
V+
V-
To Pump Module
To TIP Terminal
Réseau modules
Modules bus
MR-JX
V- | V- | V+ | V+ | A | B
DR-4515
Power Supply
ADJ | LED | +V | +V | -V | -V | GND | N | L