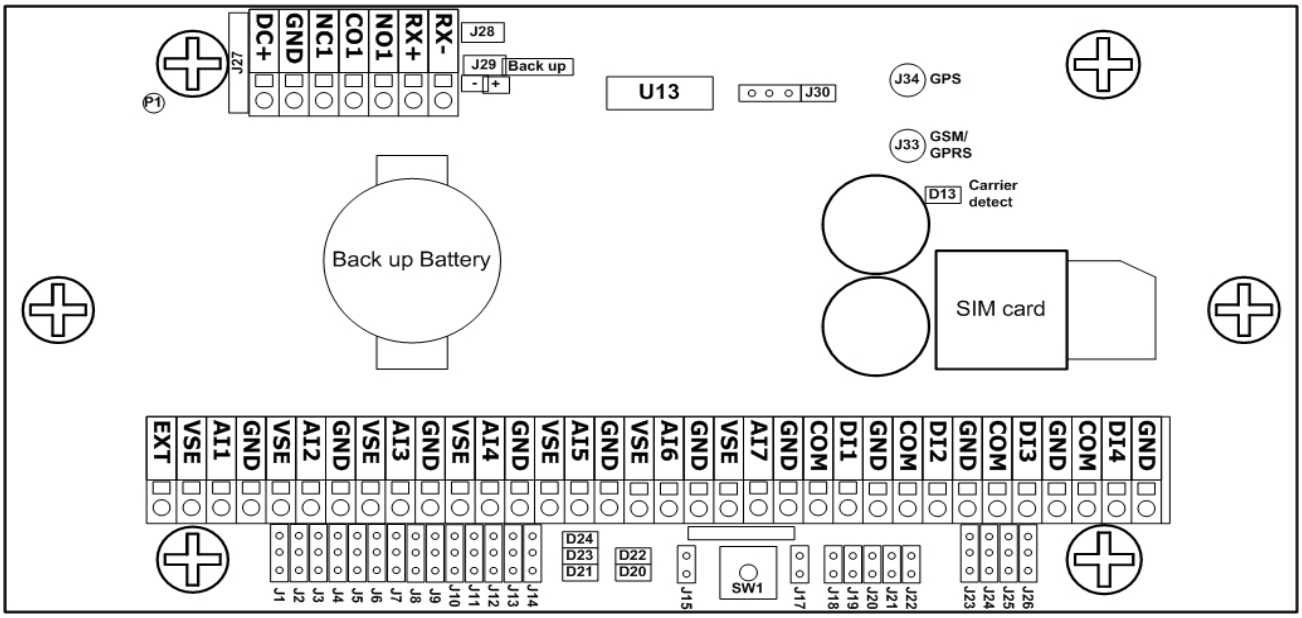
Legiobox® C2, Product specification en service Manual

General
The LegioBox C2 is a universal gateway with an extensive IO configuration. The LegioBox C2 is equipped with quad band GPRS modem and an optional GPS receiver. The number of inputs, both digital and analogue, offer the possibility to monitor and log a large range of signals. The digital output and The RS485 serial bus gives you the opportunity to guard and control your process.

Installing a new LegioBox C2
Parameters and (communication) software have been installed and/or set-up upon delivery. Using the ID present on the LegioBox (called GUID, for example: 12345678.1234.1234.1234.123456781234) and the Avision-website made available with it, it is possible to retrieve the settings, including installed bus protocols, modems, etc. that were present when delivered.

Installation steps (see also the connection scheme on the back)
(1) Check the correct functioning and connection of the cabling between the device and the signals to be connected
(2) Connect all inputs and outputs according to the connection scheme
(3) Check the jumper settings below and on the next page
(4) Connect the power supply (DC+ and GND). Is none of the LEDs burning? Push SW1 in the case of a Low Power configured LegioBox C2



Led signals LegioBox C2

When the C2 is used in Low Power the leds may be Off. The functioning of this leds may be subject to Change (even during its Lifetime). Please check our website for the last version of this manual.

Led	Application
D13	Carrier Detect
D23	Blinks quietly during communication. Blinks rapidly after a Wakeup (Forced Communication)
D21	Number x blink: Average number of communication tries during the last 10 sessions.
D20	During startup it blinks a number of times. After Startup: GPRS/GSM Field strength. Number of blinks indicates field strength.
D22	Communication Led: 1xblink.: Connecting, 2xblink.: Connected, 3xblink.: Data exchange, 4xblink.: Terminating connection
D24	Power supply available, only use Lithium type battery (spiral type) 3,6 Volt 13,5 Ah

Installation and jumper instructions

Digital inputs (Connector DI1 to 4 and its COM (Common) en GND (Ground))
- Open collector signal or dry contact: connect to GND and DIx (x = 1, 2, 3 or 4). Jumper (J23 .. J26) to top position
- Dry contact (f.e. read relay) or potential free signal connect to COM and DIx (no jumper is needed)
- Powered inputs (12 to 24 Volt) connect to Gnd and DIx and no jumper

Analogue input are available on Connector AI1 to 7 and there accompanying VSE (under AIx) and GND (above AIx)
Each analogue input has two jumpers for configuration purposes (Analogue input 1 jumper 1&2, input 2 jumper 3&4 etc,)
- PT-1000 connect to Gnd and Aix. Jumper settings:
  - first jumper (f.e. input 1, jumper position J1) *>>Place jumper it in the low position*
  - second jumper (f.e. input 1, jumper position 2) *>>Jumper is not placed (empty)*
- mA 2-wire signals are connected to VSE and AIx. Jumper settings:
  - first jumper (f.e. input 1, jumper position J1) *>>Jumper is not placed*
  - second jumper (f.e. input 1, jumper position 2) *>>Place jumper in the low position*
- mA 3-wire signal is connected to Gnd and AIx and VSE supplies power to the connected sensor.
- Volt signals connect to Gnd and AIx. Jumper settings:
  - first jumper (f.e. input 1, jumper position J1) *>>Jumper is not placed*
  - second jumper (f.e. input 1, jumper position 2) *>>Place jumper in the upper position*
- RS-485, 2-wires connect to RX+ and RX-.

Jumpers C2

J1..J14, J23..J26	See installation instructions on the first page and wiring scheme's below
J30 (soldeer)	Don not use, This jumper is used by your solution provider
J22	Wake Up Jumper
J15..J21	Do not use
J29	Do not use

Low Power function and the power supply for sensors (VSE)
The LegioBox C2 can be used in Low Power mode. The LegioBox C2 will, when possible, switch off as many power consuming components. When necessary the C2 will activate itself. This function can be configured by using Avision. 0/4-20 mA and 0-10 V sensors may be used in Low Power mode. The C2 is able (configurable by Avision) to shut down the power of these sensors also. The external power supply is internally connected to VSE (during Sample time) the current should be limited to 1 Amp.

Forcing communication
The LegioBox C2 will do this automatically on configurable (using the Web application) time intervals**.** The LegioBox C2 can be forced to communicate. This causes all data stored in the LegioBox C2 to be transmitted to the central application. This is necessary for instance when changing the battery, or to establish the correct functioning of the unit. Forcing communication is done by pressing SW1.
See the function of LED L1, This LED is an indicator of the communication process.

IO specification		
Input 125mV,250mV,500mV,1V,2,5V,5V,10V,0-20mA,RTD	(universal, 13/14 Bits)	7
Non galvanic separated inputs, open collector or dry contacts	(Max. 25 Hz)	4
Bi-stable Relay digital output	(24 Volt, max. 1 A)	1
Sensor power, powered by the data logger	(consult Avic for more options)	12 Volt, 140mA
RS485 interface (standard with Modbus), 2 wire	(no galvanic separation)	1
GPS receiver, MTK chipset, 32 channel		Optional
Vibration sensor, Omni directional		Optional
Maximum inputs and outputs (tags)		256
Energy		
Power supply. There are many different operating modes, please contact Avic distributor or Avic solution provider for details (The optional Main Power supply for the LegioBox C2 also contains an UPS)		12-24VDC Or: 100-230V AC
UPS 8,2 Volt (250mAh)		Optional
Base load without any actions	(low power operation)	95µA
Base load without any actions	(normal, continuous operation)	100mA
Power consumption during sampling	(low power, without sensor power)	5mA
Power consumption during data transmission	(GPRS)	260mA
5 min. sampling interval, transmission every day	(low power, Energy consumption all values depends highly on usage and are indicative)	1mWatt
Unit is always on and connected	(standard power, Energy consumption all values depends highly on usage and are indicative)	2,6 Ah per day
Casing & mounting		
Aluminium casing	(IP67)	Yes
Size in mm	(H x W x D)	60x160x90
Weight	(depends on execution)	0,7 kg
Mounting method		Screw 4x
Environment	(-20°C / +50°C)	IP65 / IP67
Number of External cable glands		5 x PG9
Internal cage Clamp terminals, 1,5mm^2		Yes
Internet communication		
GPRS / GSM	(Internet)	Standard (quad)
Software options		
Real time clock	(automatically synchronised)	Yes
Modbus RTU	(standard RS232 /RS485, other interface are possible)	RS485
GPS		Optional
Custom serial protocols	(RS232 / RS485 / I2C > Custom implementation by Avic BV)	Optional
Formulas + local programming (PLC alike)		Yes
Memory	(estimation of samples you can store)	>120.000
Low power features		Yes
Standard(S) Smart Sampling(SS), High Speed Sampling(HS), Conditional Sampling(CS)		S, SS, HS, CS
Programmable delay, timers, filters, alarm thresholds and Hysteresis		Yes
Firmware update over the Internet		Yes