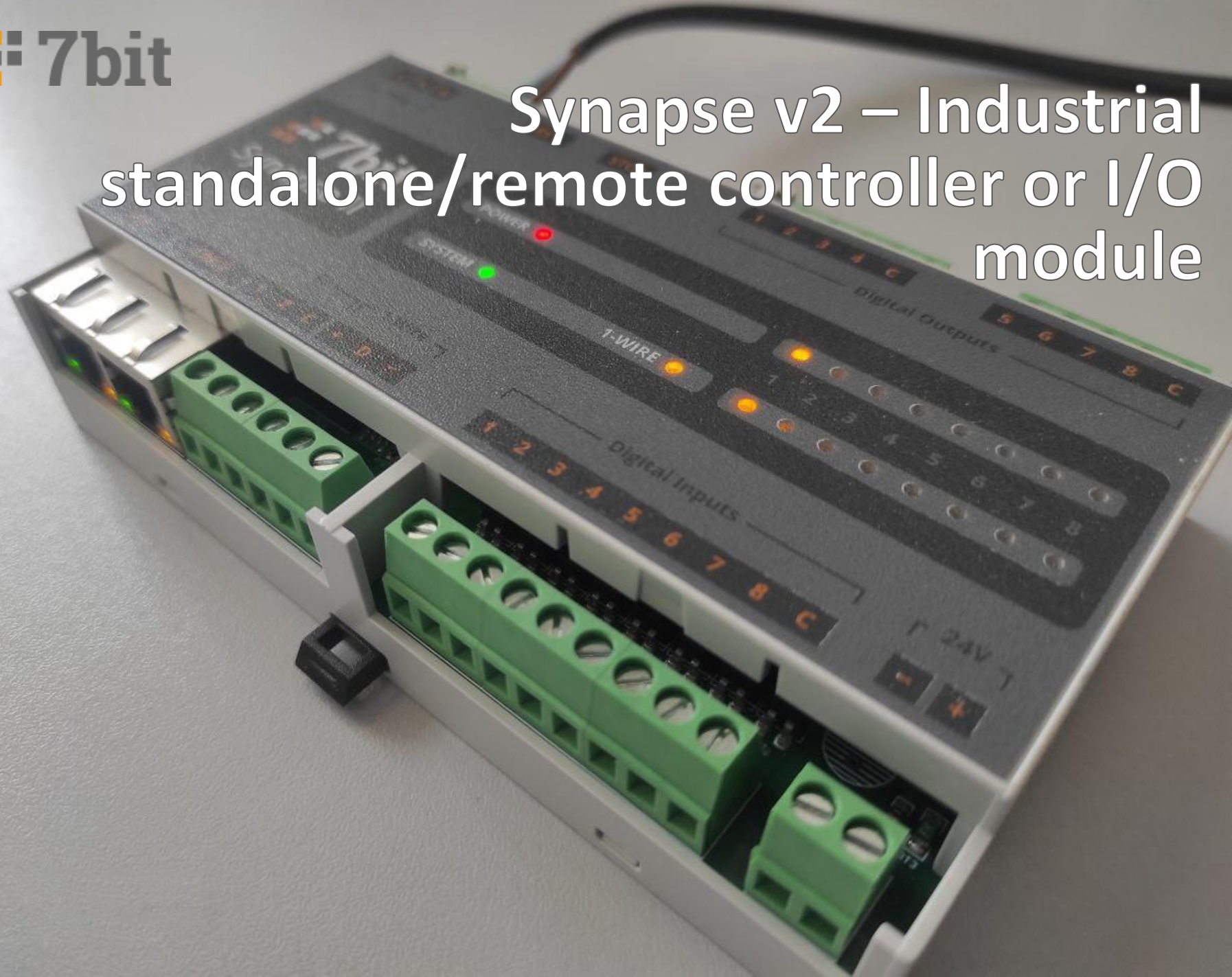
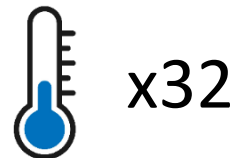
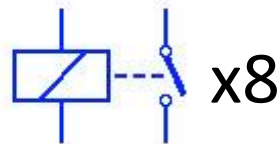
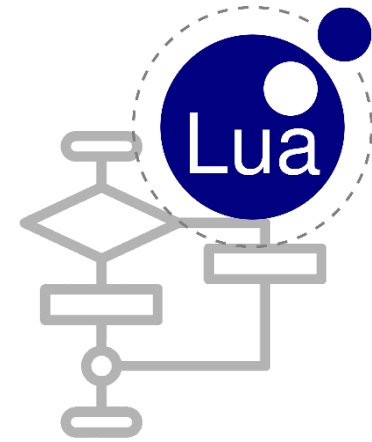
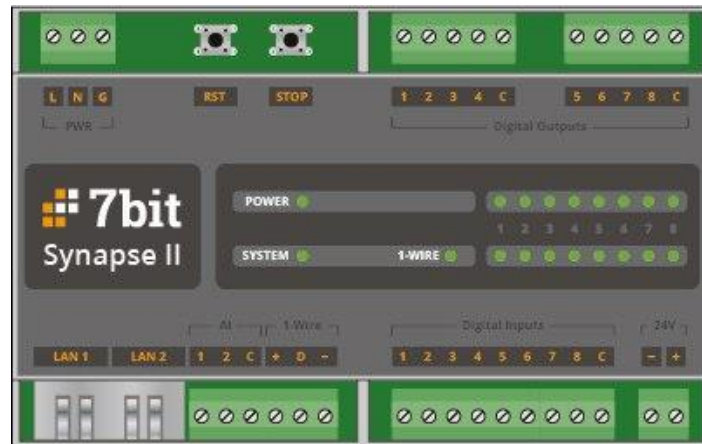


 7bit

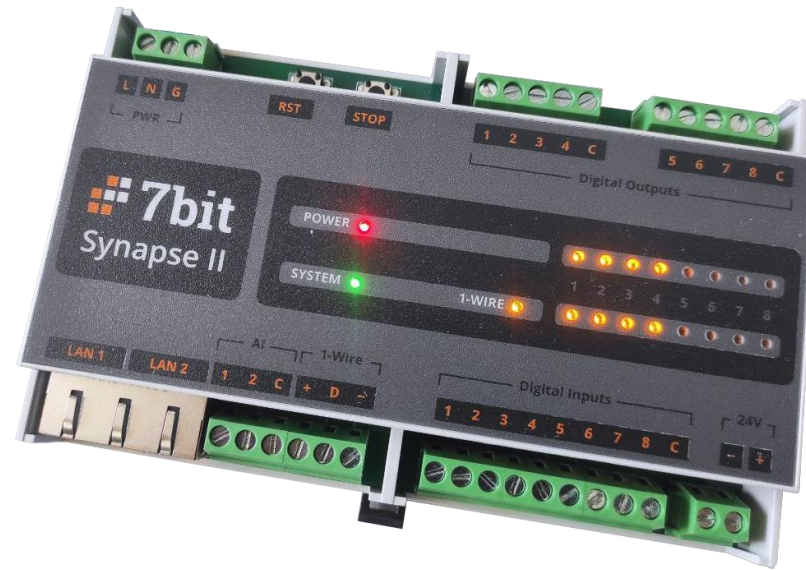
Synapse v2 – Industrial
standalone/remote controller or I/O
module



Synapse v2 -Overview



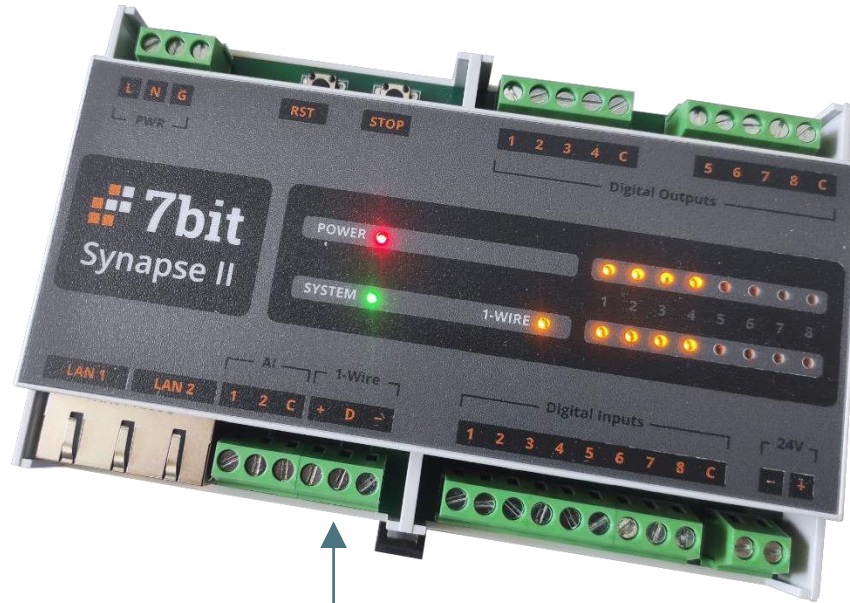
Analog inputs



x2

- Input type - 4 .. 20 ma
- Suits for pressure, level, temperature gauges and others

Inputs 1Wire temperature sensors



-40 + 85°C

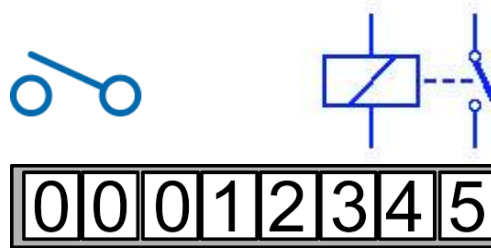
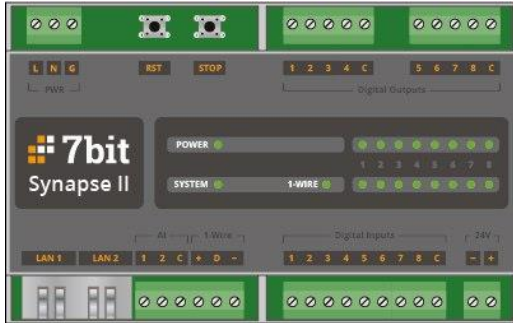
← Up to 200 meters →



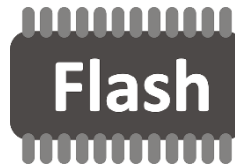
1 ... 32



Running hours meters



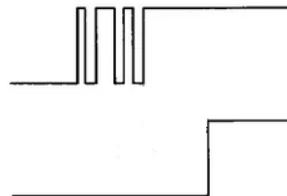
Both for inputs
& outputs



Non-volatile



Switch counters &
duration

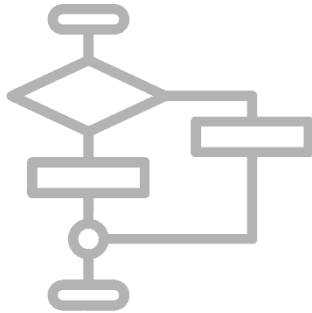


Digital filter

Transforming into a PLC



Lua – high level programming language similar to C, Pascal, JavaScript



Allows for implementation of common sequential algorithms and quite tricky complex control, not easy for PLC

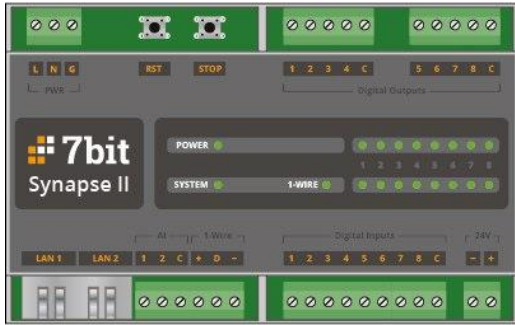


Coding is done right from browser

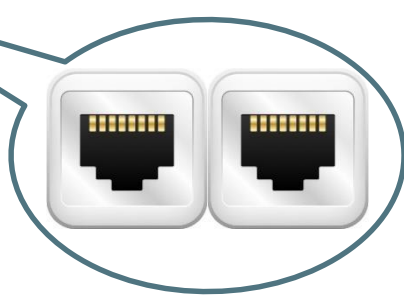
```
--
12 function PID ( sp , pv , c_alias )
13
14     local now, nexTime = os.time() , R(c_alias .. ".nextPidTime" )
15     local CYCLE_TIME = R ( c_alias .. ".pidCycleTime" )
16     local ZONE = 0.2           -- can also be an external setting
17
18     local Kp, Ti, Td = R(c_alias .. ".Kp" ), R(c_alias .. ".Ki" ), R(c_alias .. ".Kd" )
19     local Int_sum = R ( c_alias .. ".pidIntegral" )      -- integral part accumulator
20     local G = R (c_alias .. ".pidOut")
21
22     local Err =  sp - pv
23
24     if ( math.abs ( Err ) <= ZONE ) then
25         Err = 0
26     end
27
28     if ( now >= nexTime ) then
29
30         W (c_alias .. ".nextPidTime", now + CYCLE_TIME)  -- calc. next cycle time
31
32         local dErr = Err - R (c_alias .. ".pidPrevError" )
33         -- calc. integral limit
34         local iSUM_LIMIT = G_LIMIT * (Ti / Kp)
35
36     --integral part check
37     if (Ti == 0) then
38         Int_sum = 0
39     else
40         Int_sum = Int_sum + Err
41         -- check limits of integral part
42         if Int_sum >= iSUM_LIMIT then
43             Int_sum = iSUM_LIMIT
44         elseif Int_sum < 0 then
45             Int_sum = 0
46         end
47     end
48 end
```

**Transforming into a PLC
with the help of Lua**

Flexible networking



Double Ethernet for
easy network
connection



Or with the help of
WiFi



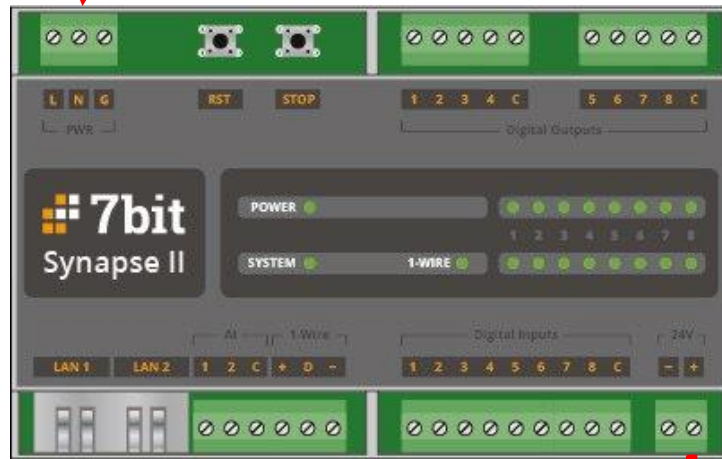
Flexible powering



~220 Vac



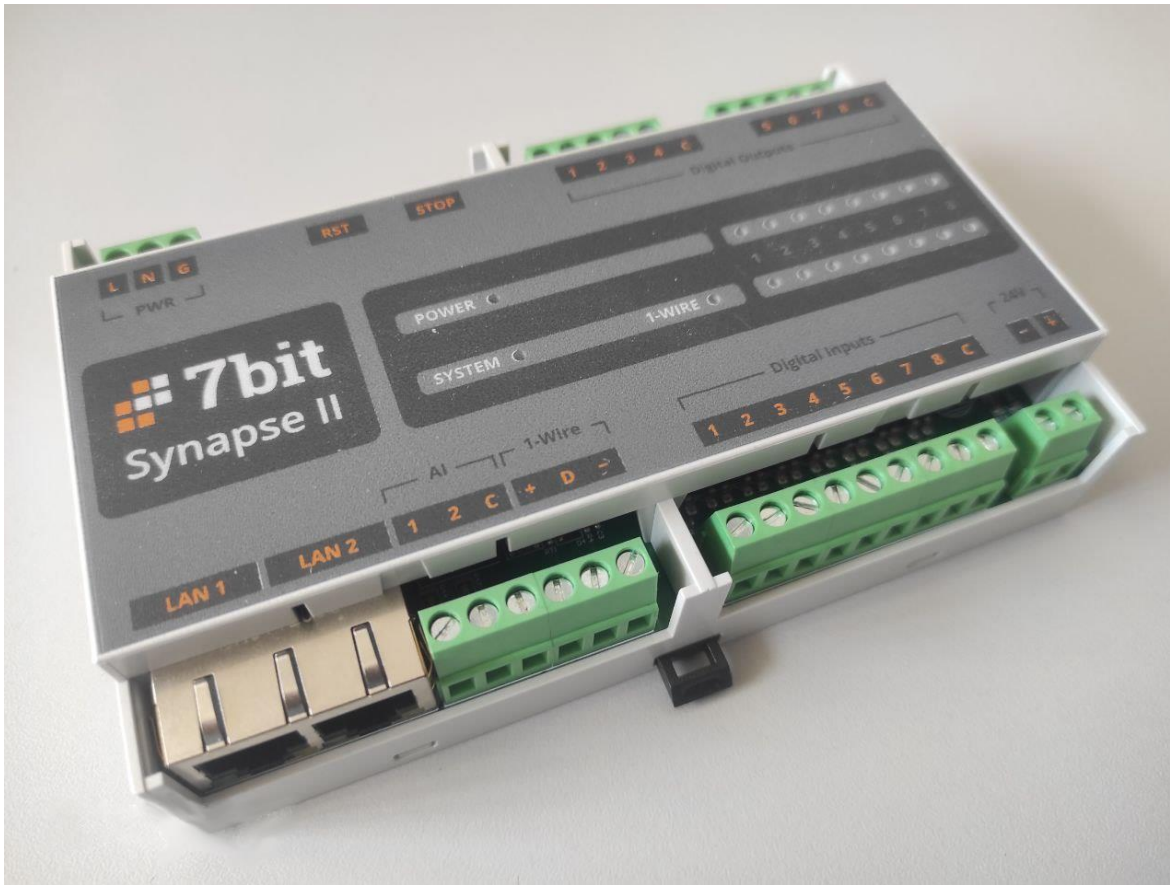
OR




24Vdc

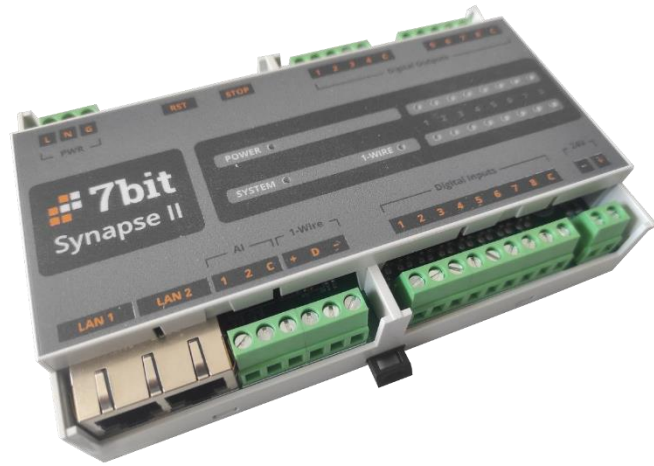
Supplies 24V when fed from 220Vac

Fits in slim distribution boxes



 40 mm

Embedded MQTT – client for IoT applications



...

Easy config templates for WebHMI & Level2

Добавить устройство

Производитель

7Bit

Модель

- AirGate
- AirGate
- AirPoint
- Mediator
- ModBus Proxy
- Synapse**
- WebHMI Health Registers

Tools

- Import registers
- Export registers
- Import registers values
- Export registers values
- Store on device
- + Add device**

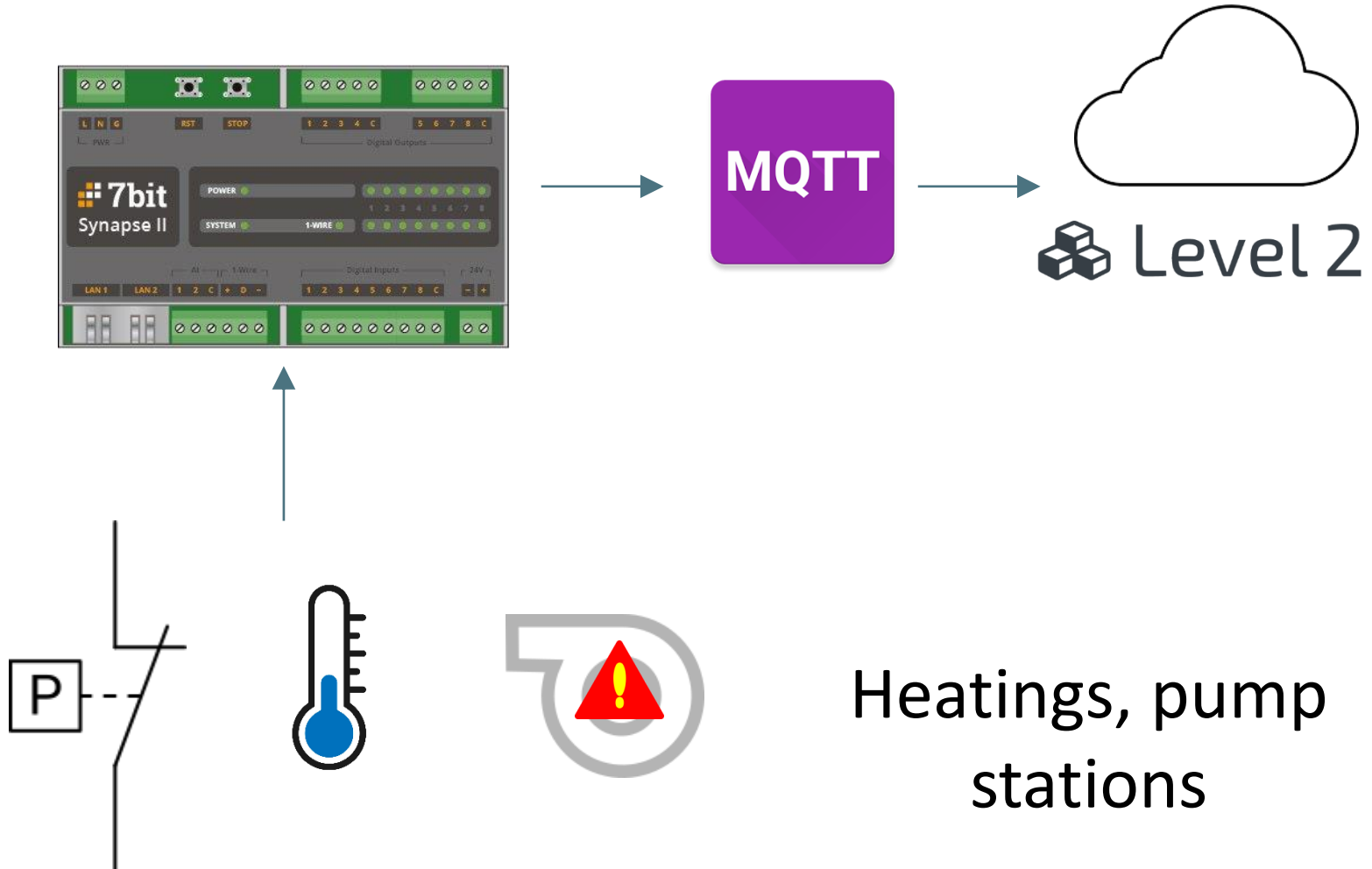
Отмена

Добавить



Application examples

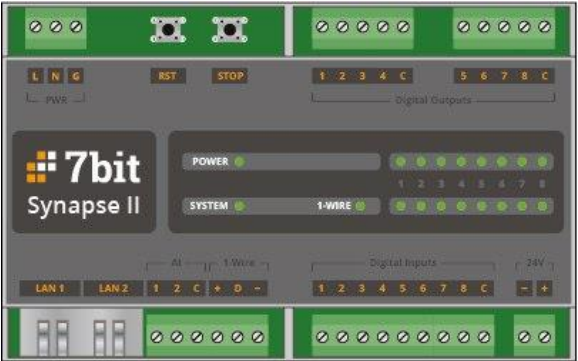
Embedded MQTT – client for IoT applications



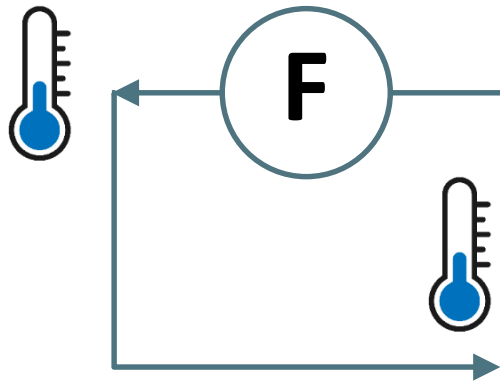
Heating



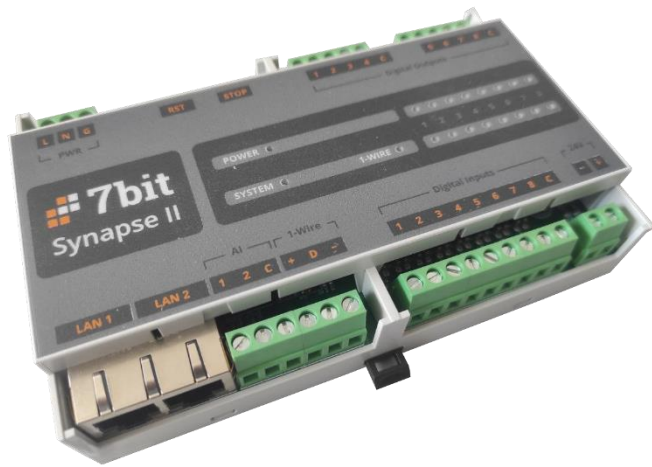
Heating – non-commercial heat metering



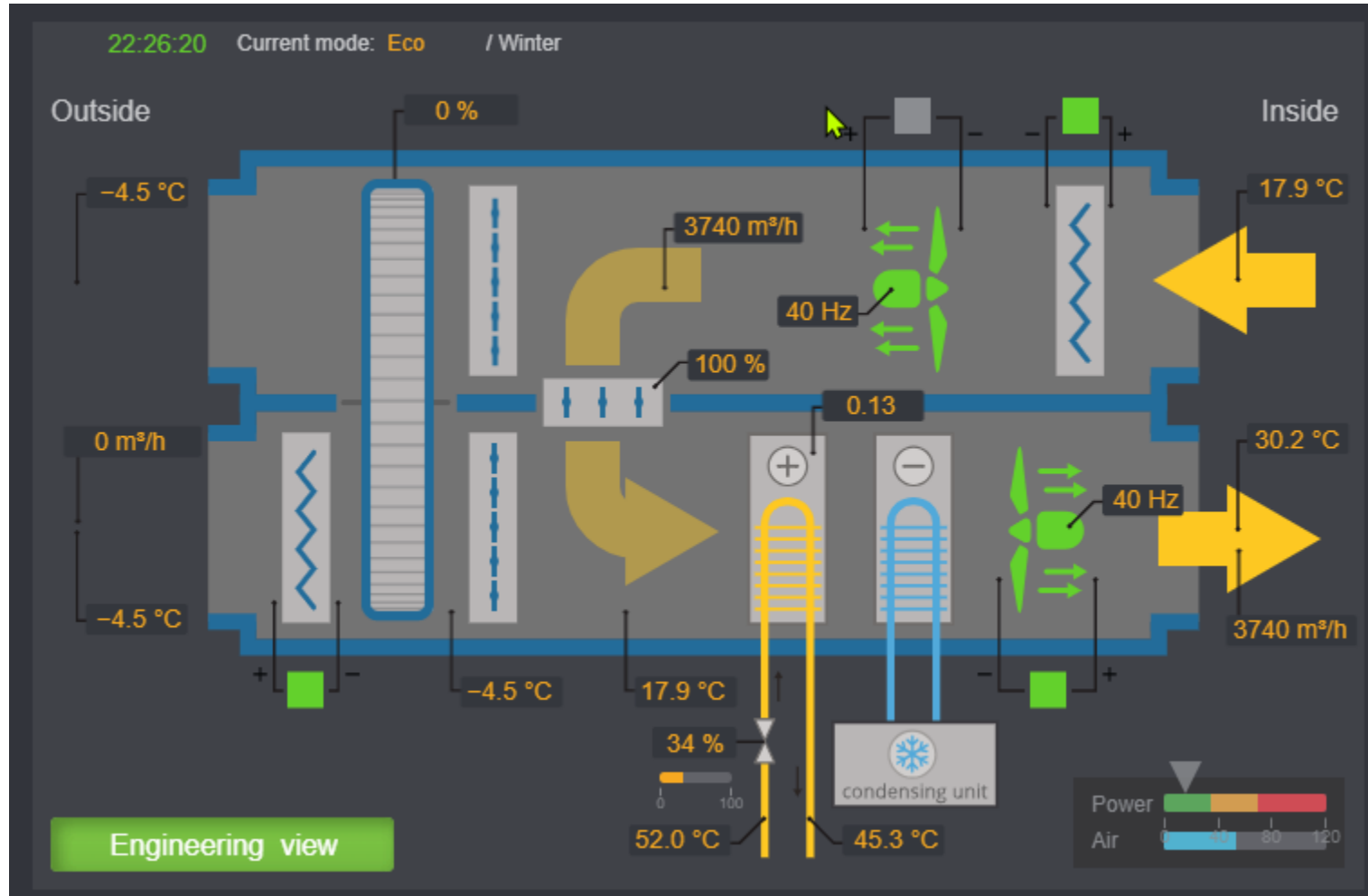
$$\Delta Q = mc\Delta T$$



Heating – valve control



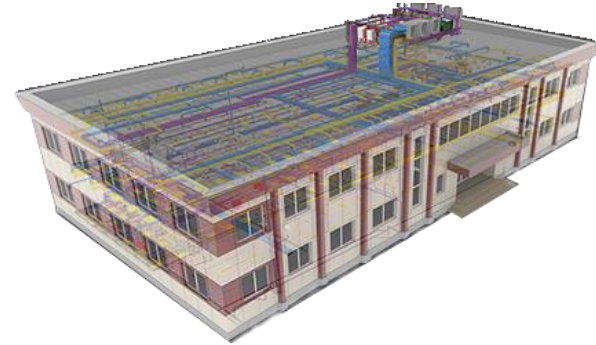
Control for small units and machines, e.g. vent units



Other applications



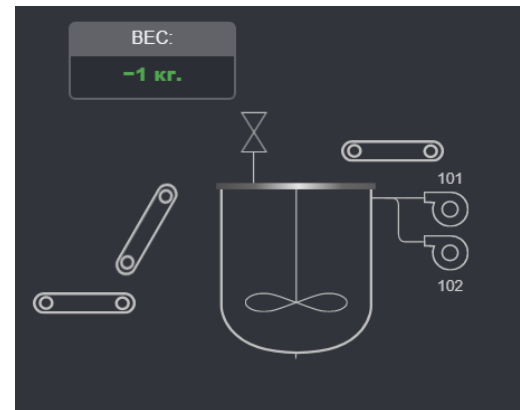
Greenhouses



Building automation



Machines & FA



Process control