

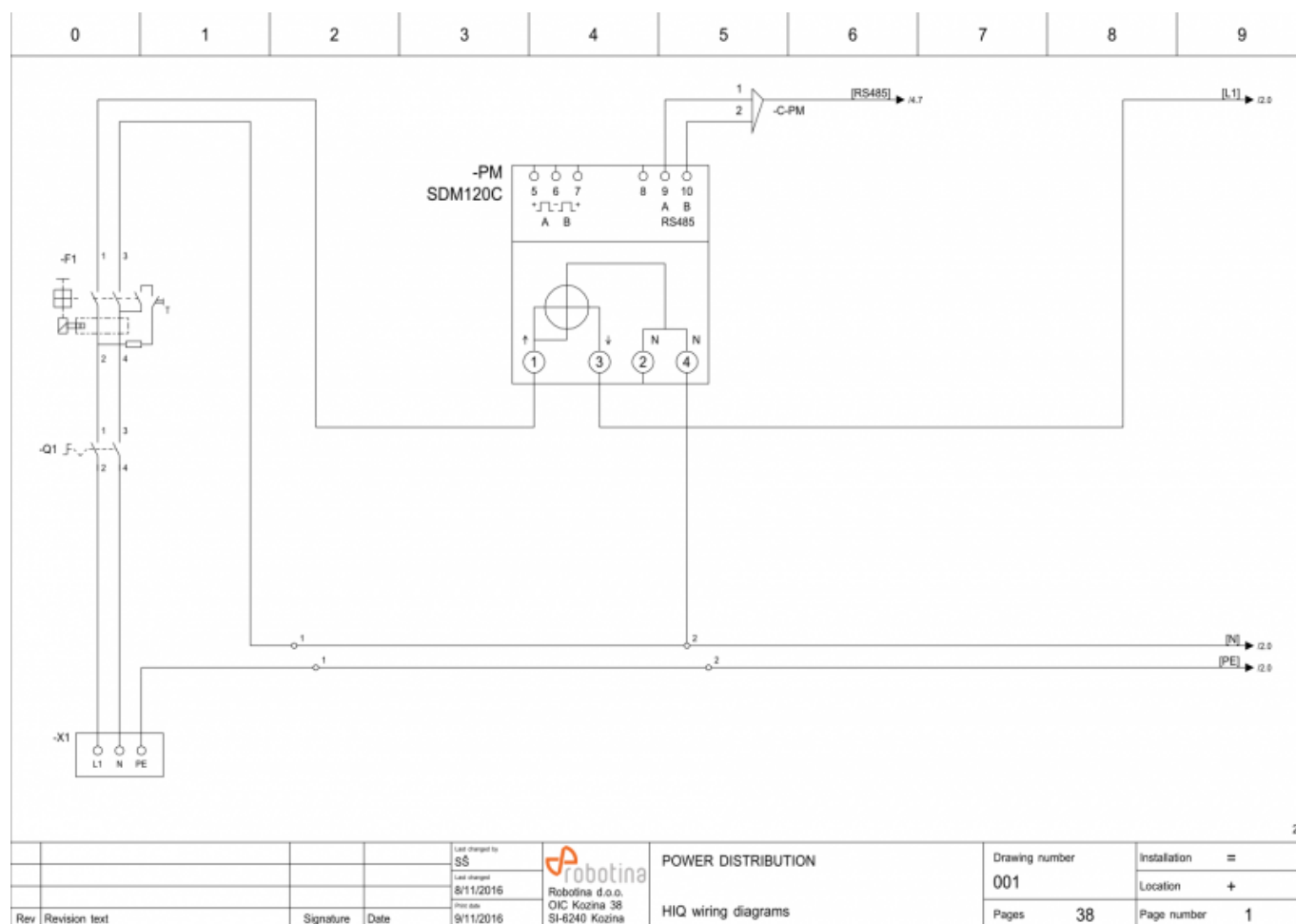
# HIQ designing

Presented electric wiring plans were made with the help of [Elwin](#) software which is made by [3xM Automation company](#). New plans can be made with modification of included [Elwin project](#) or with modification of [DXF plans](#) with any DXF capable program. With the Elwin project, all HIQ symbols are included. The whole design plan can be also downloaded as a [PDF file](#).

## Page 1- Power distribution-RCD switch and power meter

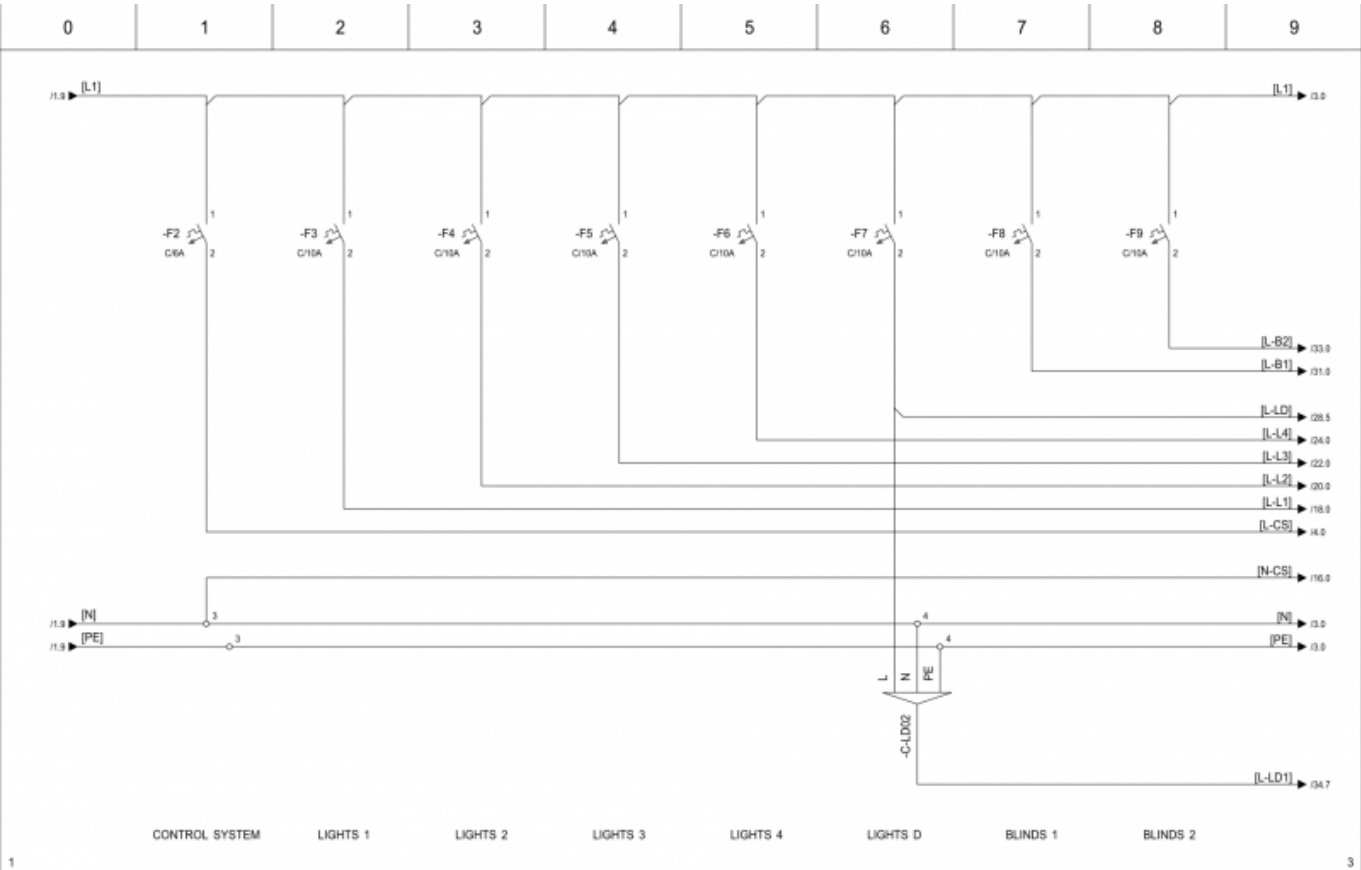
Single phase power input, connection of RCD switch (Residual Current Device) and [power meter](#). Input can be single or three phase.

The [power meter](#) on the wiring plan is connected to measure the whole electricity consumption, but can be connected to any device (or group of devices). Only single phase electricity measurement is available.

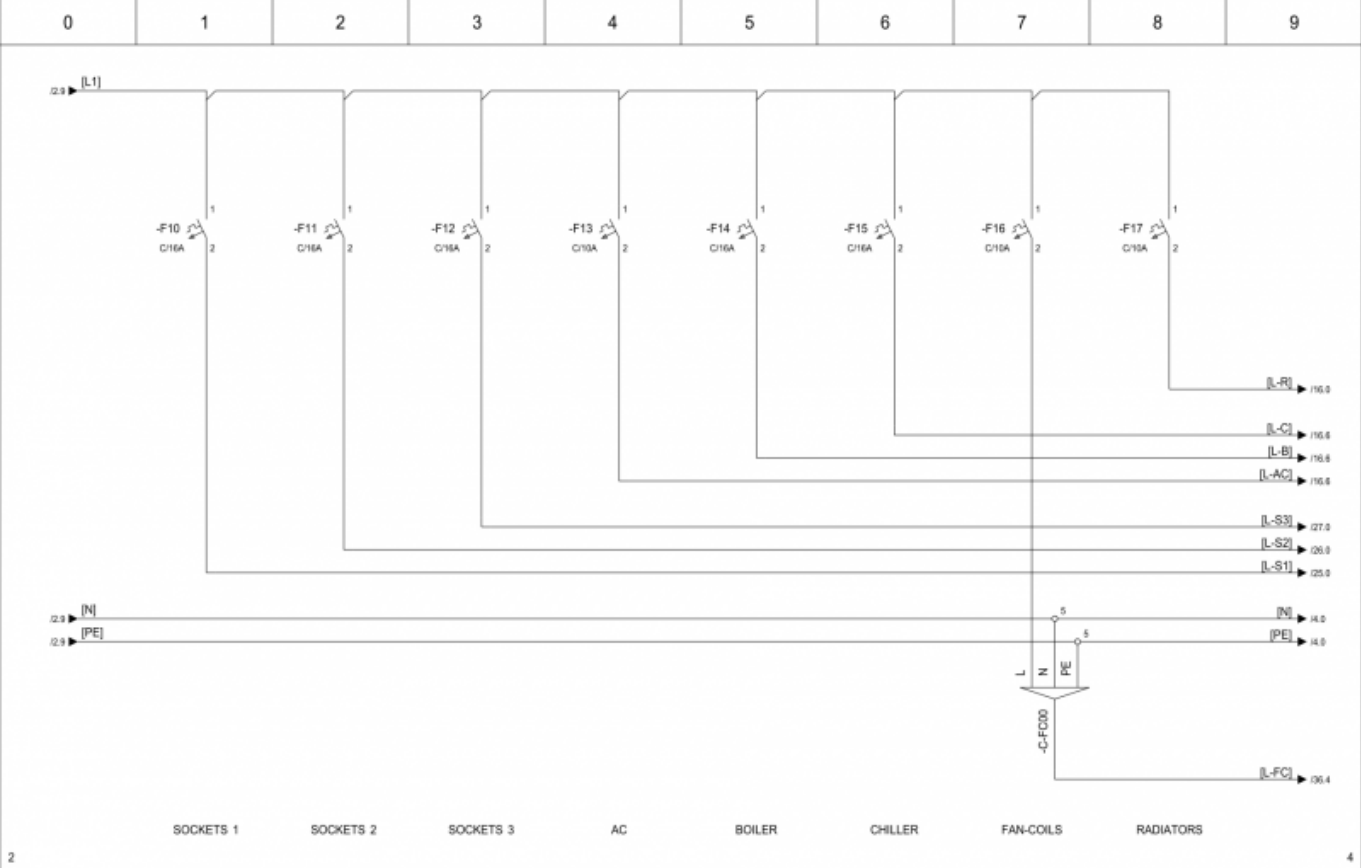


## Page 2-3 - Power distribution - Fuses

Suggested fuse plan.



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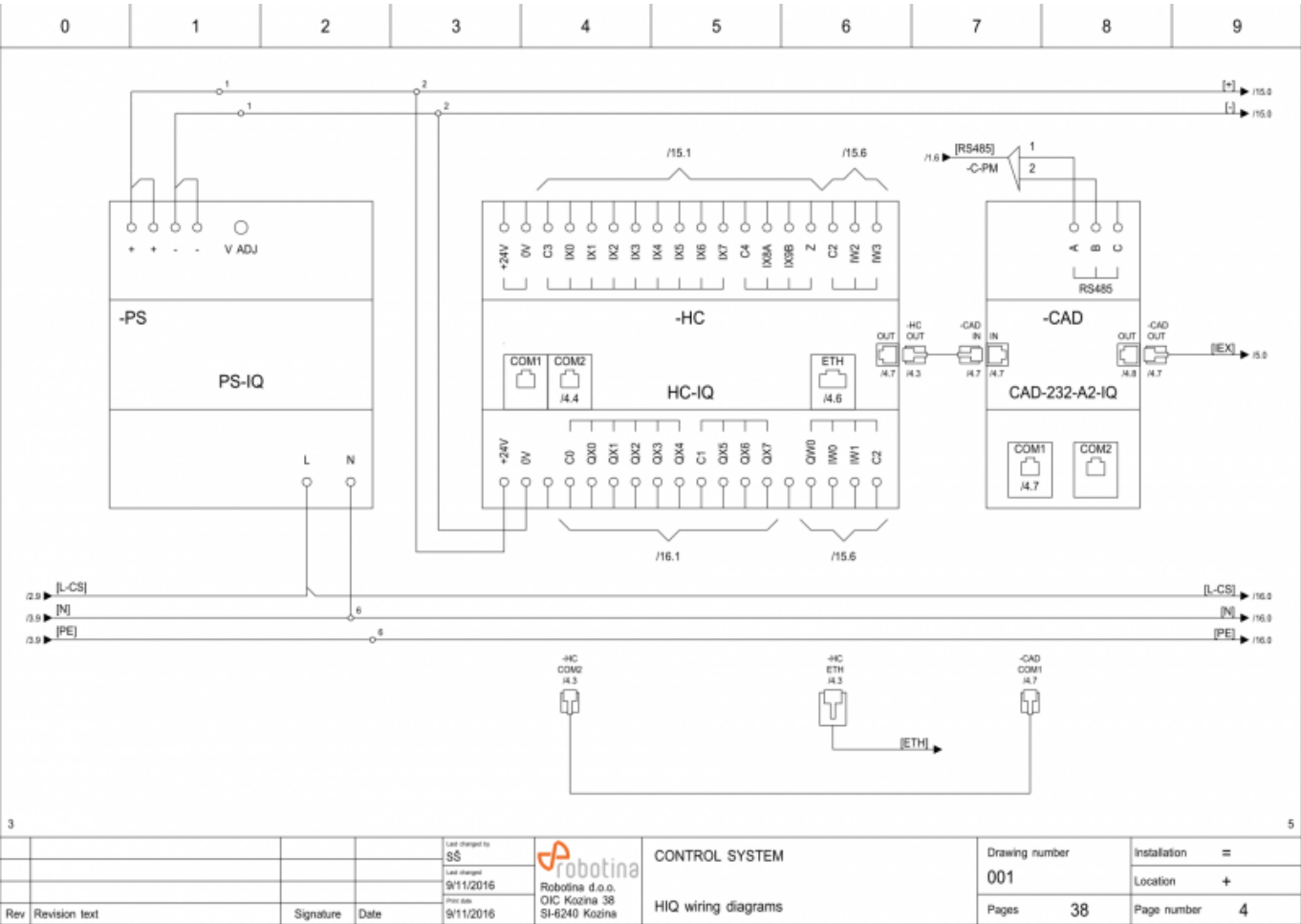
Page 4 - Control System-Power supply, HC, CAD-232

24V power supply (PS) for control system, Home controller and CAD-232-A2-IQ.

24V power supply can be optionally used for LED lighting (up to 2.5A with serial power supply, larger power supply can be used).

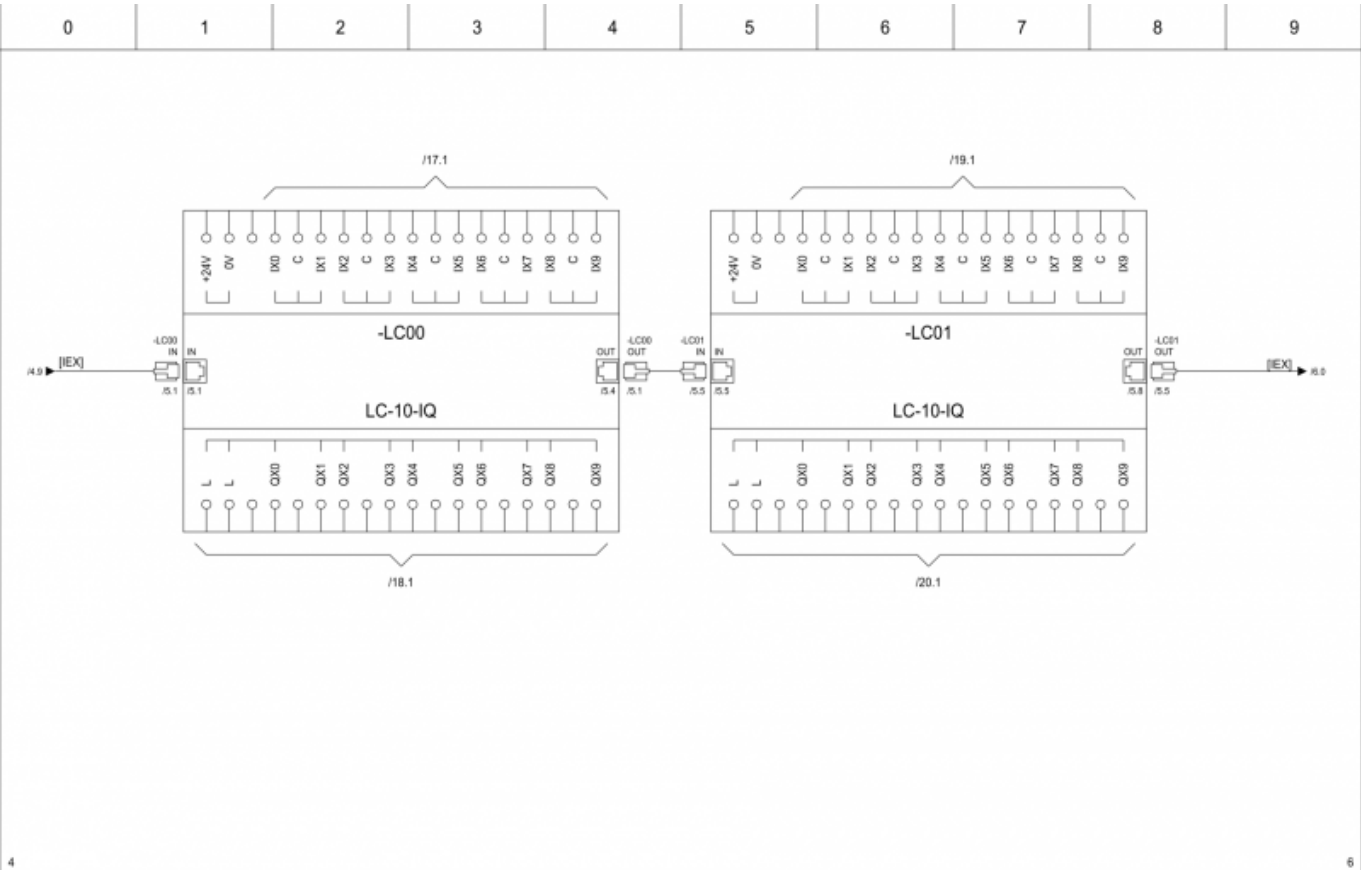
Home controller (HC) is the heart of the system. It is connected to the network (ETH) and has optional inputs (connections are on page 15) and outputs (connections are on page 16).


CAD-232-A2-IQ expander is used as communication interface between home controller and power meter (If power meter is not used then the expander is not necessary). It is connected to a home controller through IEX bus, to COM2 on home controller input and to power meter (RS485 communication).

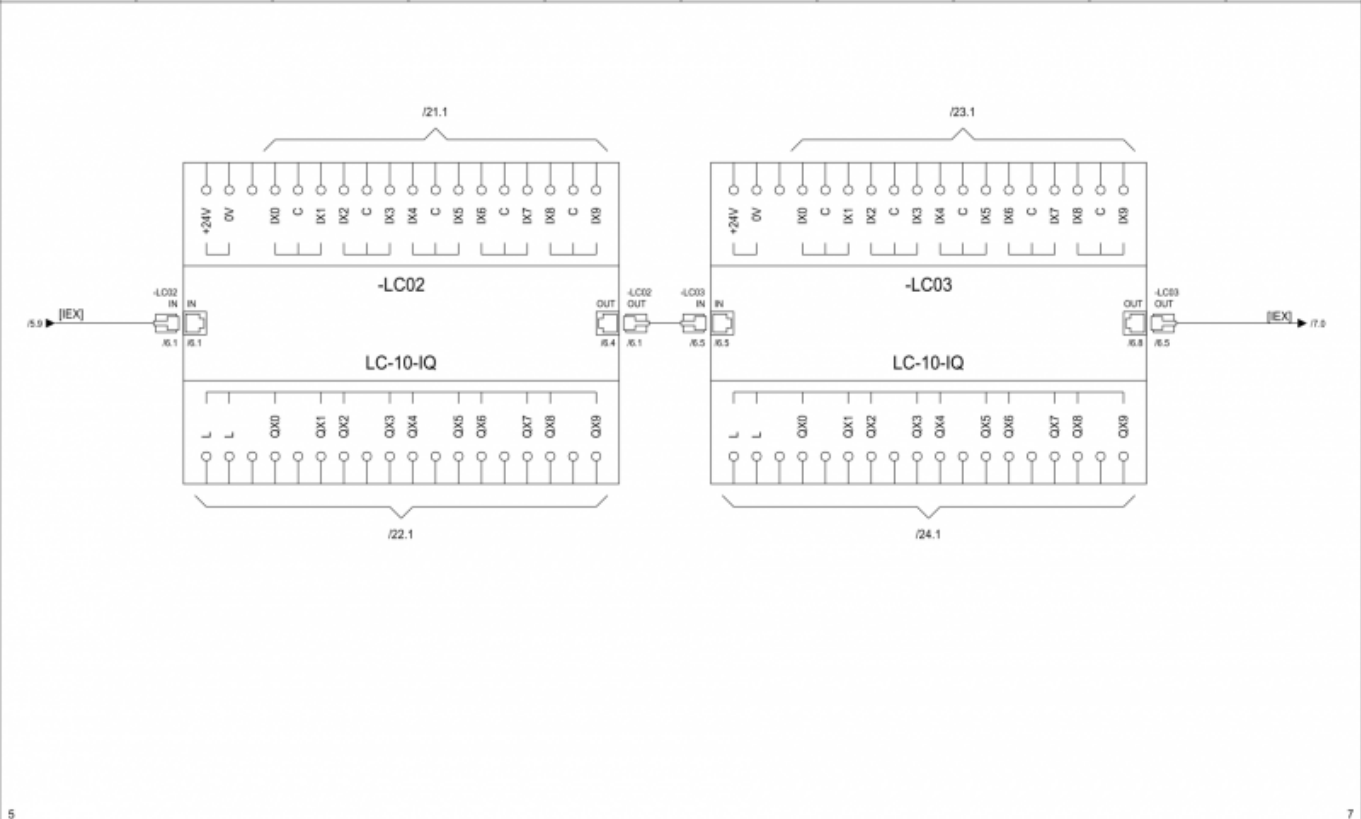


Page 5-6 - CS-Light controller 00 and 01

Light controllers (LC) are connected to IEX bus, we can connect up to up 4 LC to 1 home controller. On the top side are inputs and on the bottom side are outputs (connections are on page 17-24).

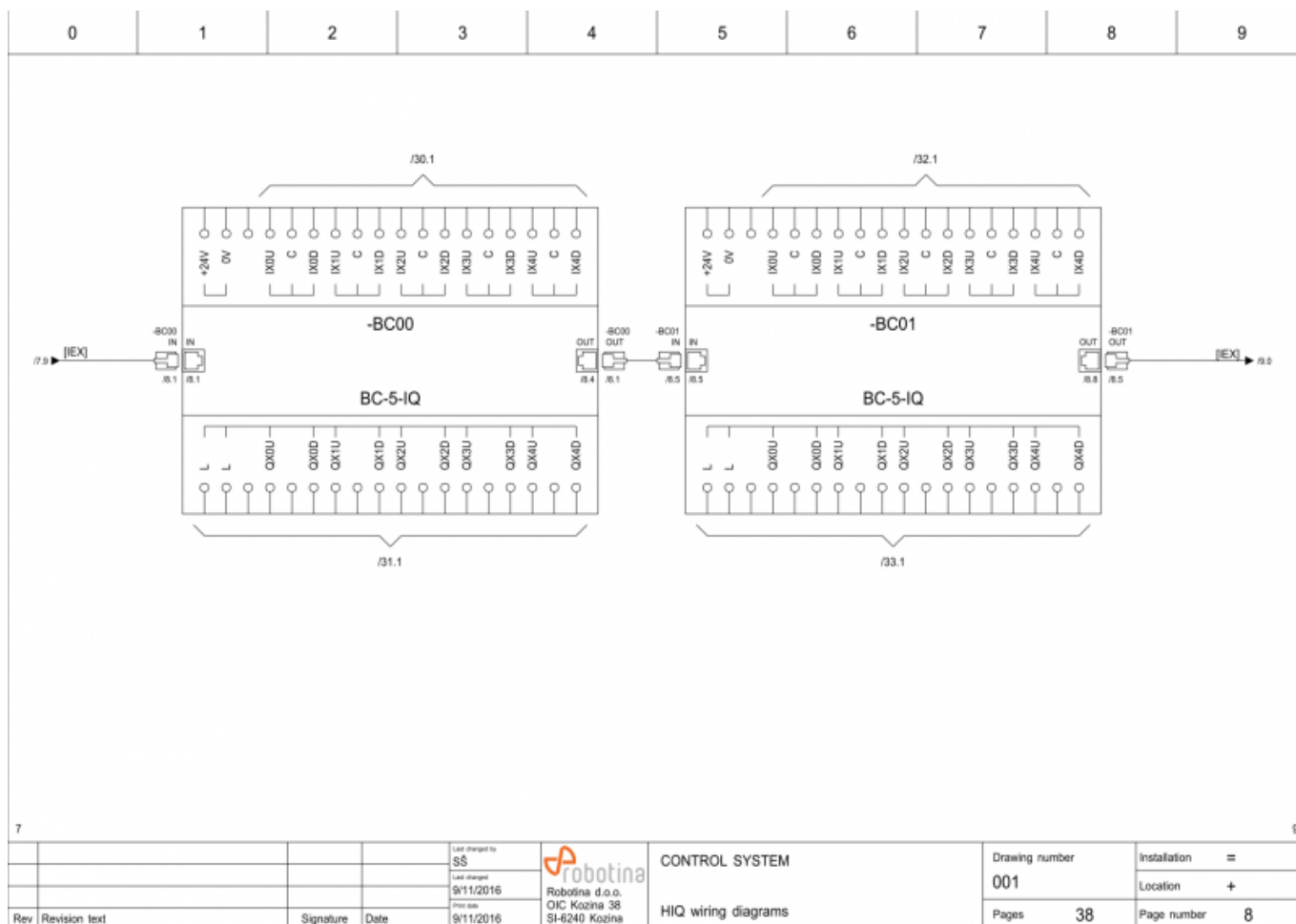


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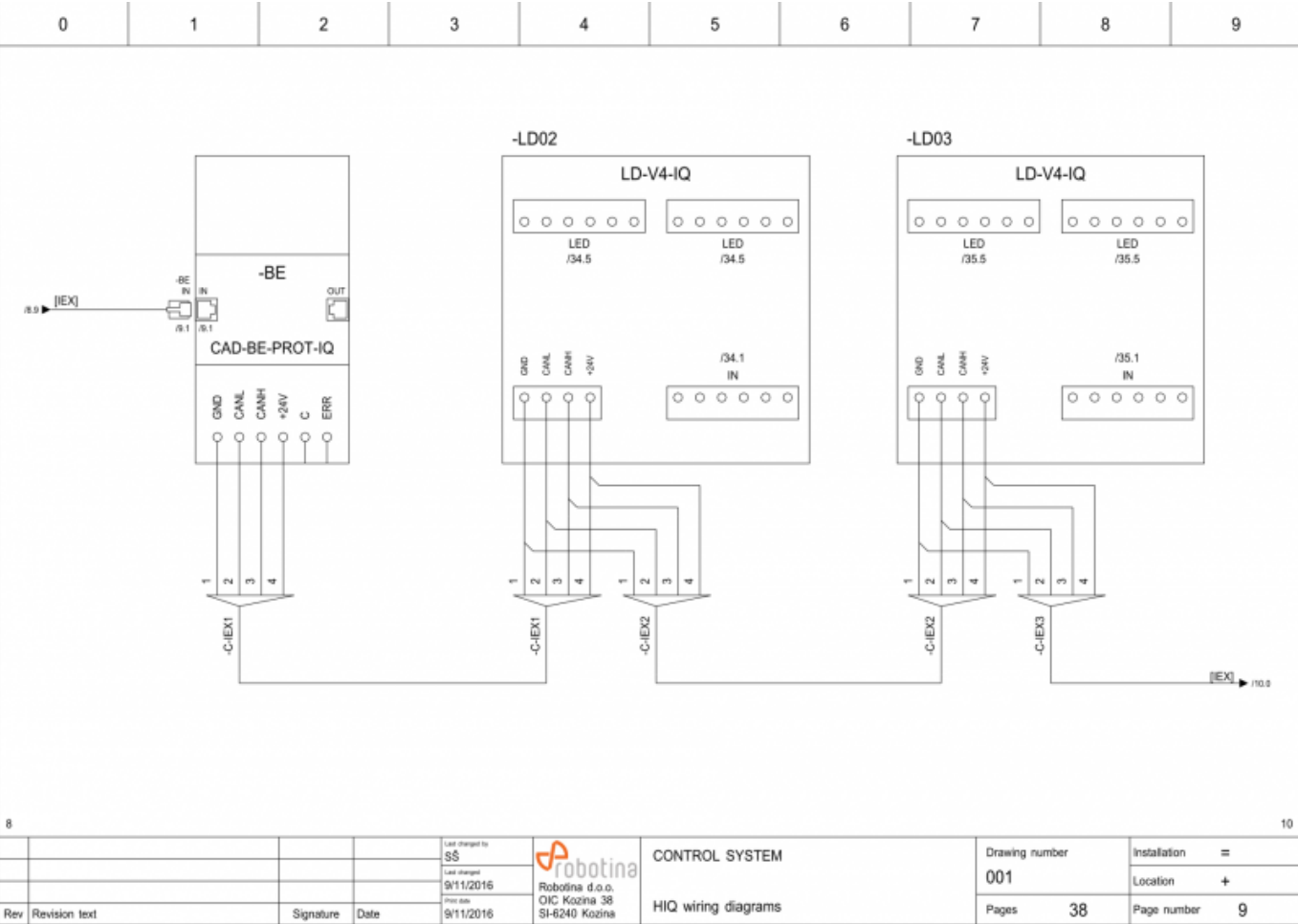




## Page 9 - CS - bus extender, LED light dimmer

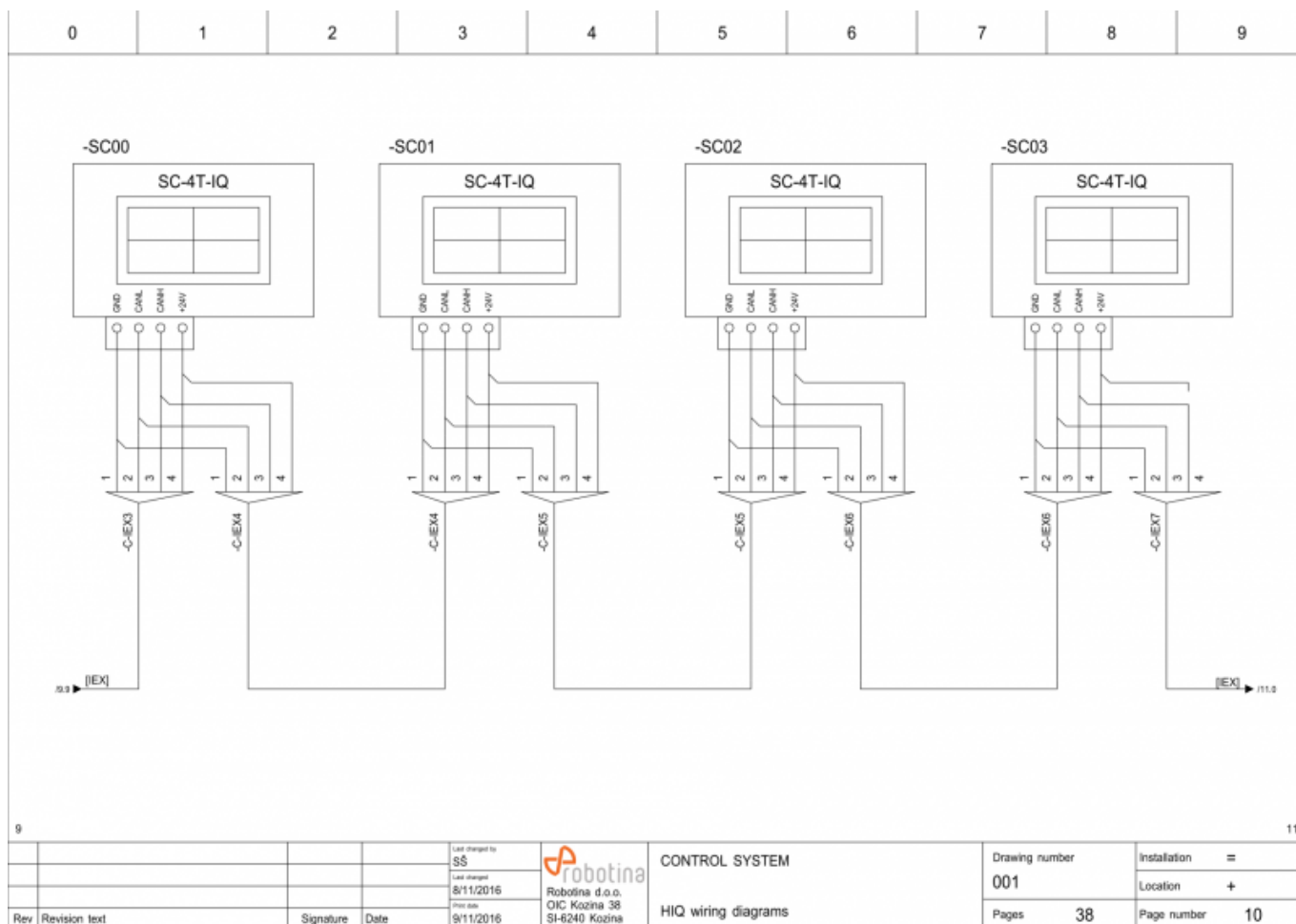
**Bus extender (BE)** is a passive switch for easy IEX bus interconnection between cabinet and field modules.

Up to 4 light dimmers can be connected to 1 HC. On sample plan we use 2 **LED stripe dimmers**.



Page 10 - CS - Scene controllers

Up to 4 Scene Controllers can be connected to 1 HC. On sample plan are 4 [Scene Touch Panels](#), but also [Scene Panels](#) and [Scene controllers](#) can be connected in the same way.

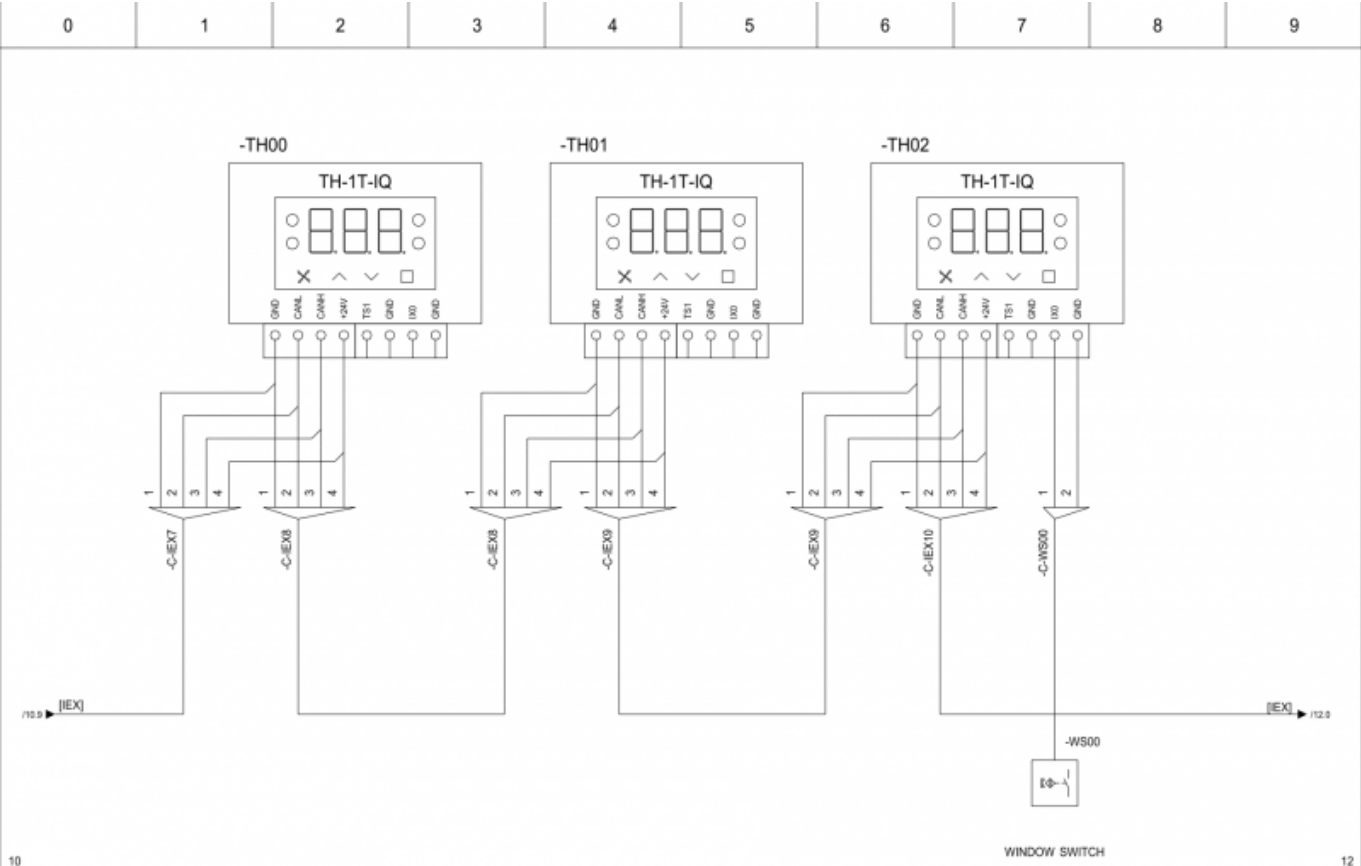


## Page 11-12 - CS - Thermostats

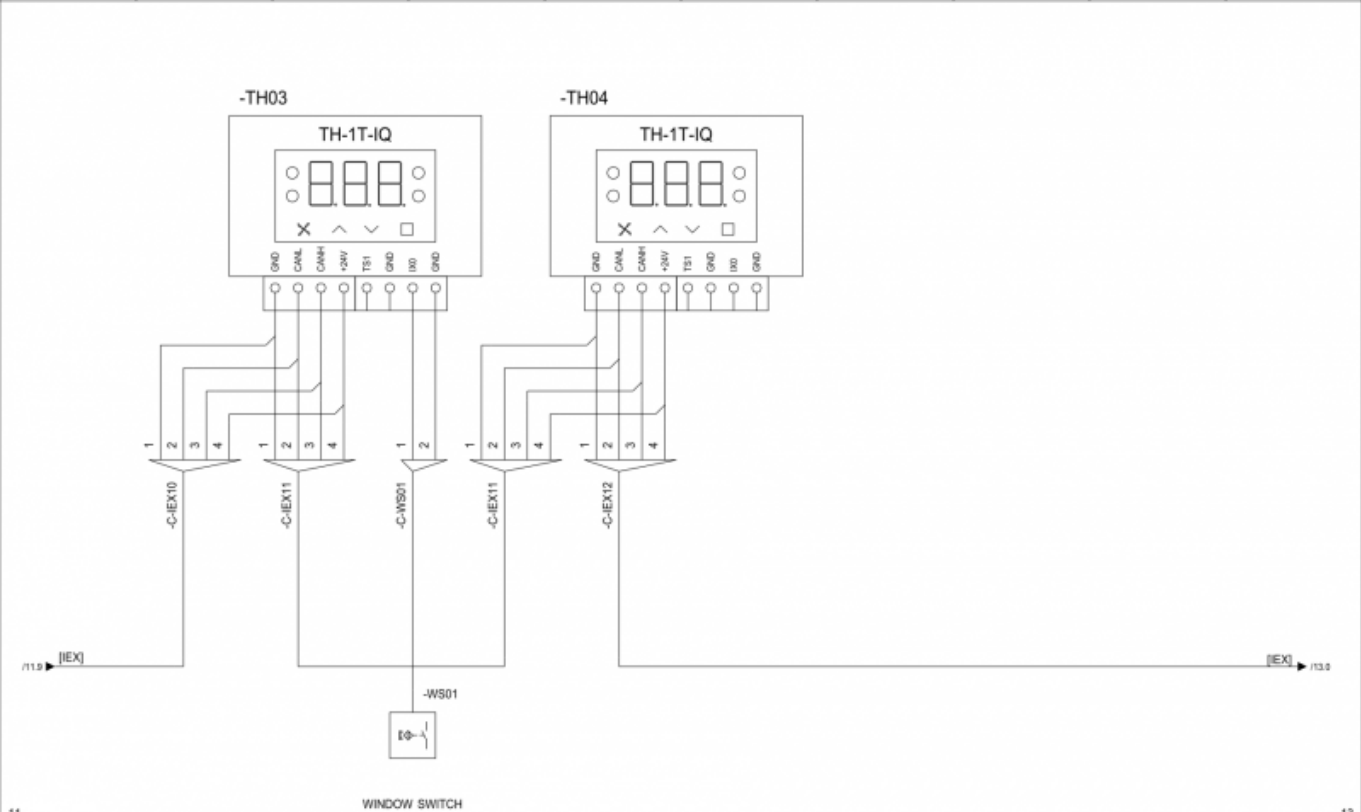
Up to 5 Thermostats can be connected to 1 HC. On sample plan we use 5 [Touch buttons electronic thermostats](#), but also ordinary [Electronic thermostats](#) and [Blind electronic thermostats](#) can be connected in a similar way.

Optionally we can connect window switch on each thermostat (sample on -TH02 and -TH03) (not possible with [Blind electronic thermostat](#)).





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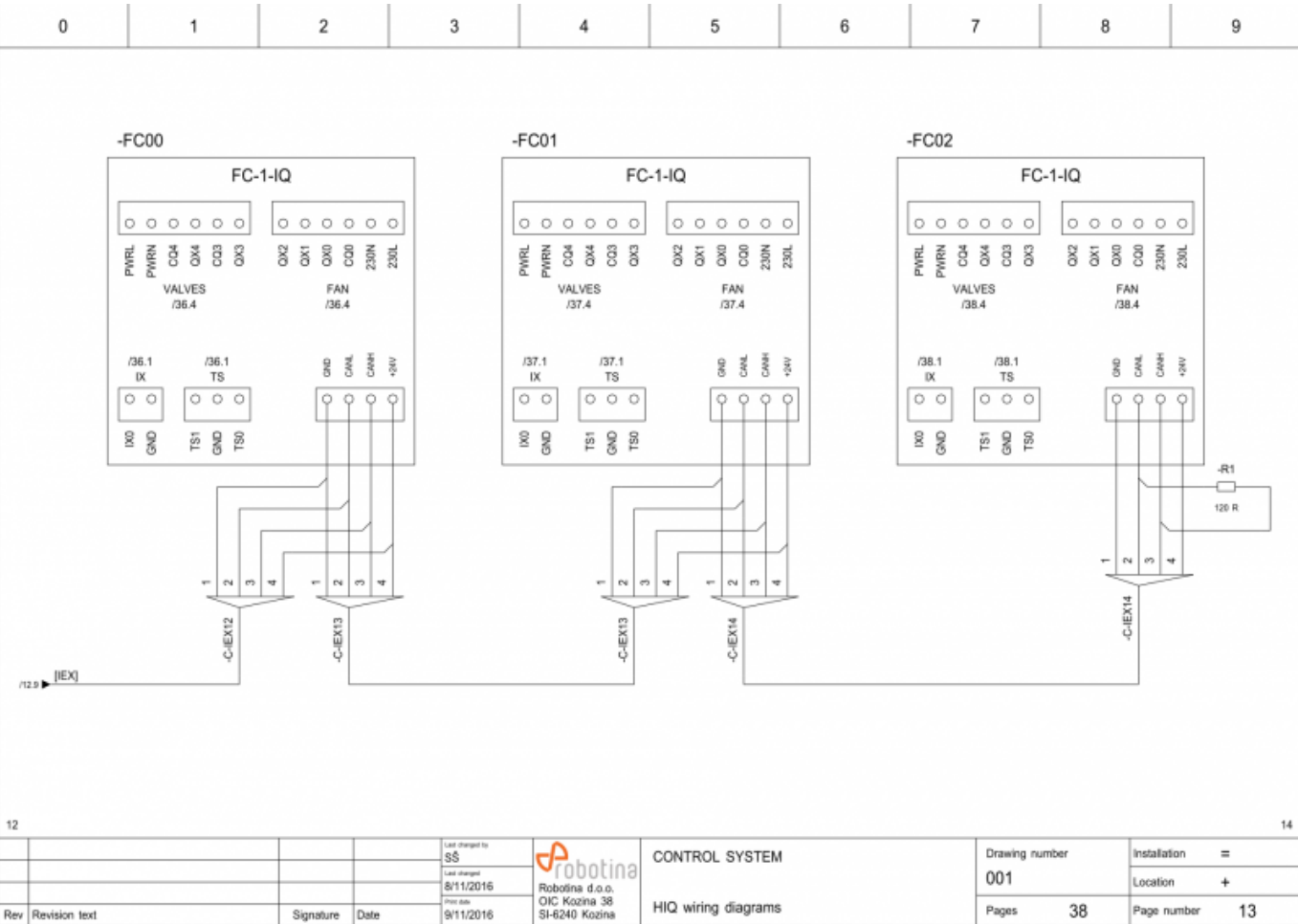


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Page 13 - CS-Fan-coil


Up to 5 Fan-coil controllers (FC) can be connected to 1 HC. On our sample plan we have 3 FC, 2 thermostats are controlling radiator valves (page 36-38).

FC controllers are the last items on IEX bus. Longer IEX bus lines (over 100m) must be terminated with a 120ohm resistor between CANL and CANH (-R1).



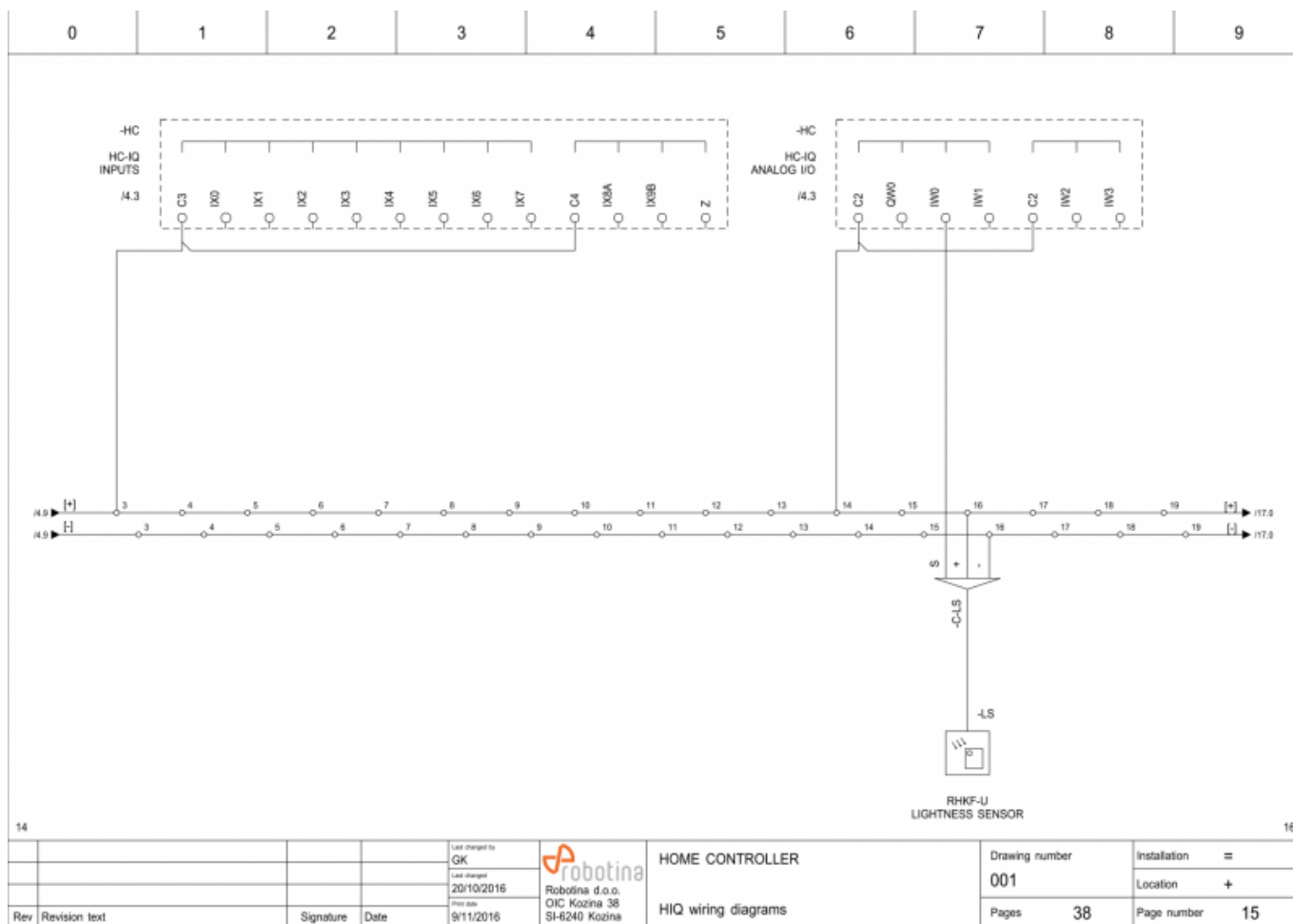
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## Page 15 - Home controller inputs

If used, optional [lightness sensor](#) must be connected to IW0 analog input on [home controller](#).  
All other inputs are left for custom programming solutions (10 digital inputs IX0-IX7, IX8A, IX9B and 3 8-bit analog inputs IW1-IW3).



## Page 16 - Home controller outputs

QX0-QX4 outputs - can be used for radiator valves or to control other heating/cooling devices. Internal relay is used for valves, other loads are recommended to use an additional 16A installation relay.

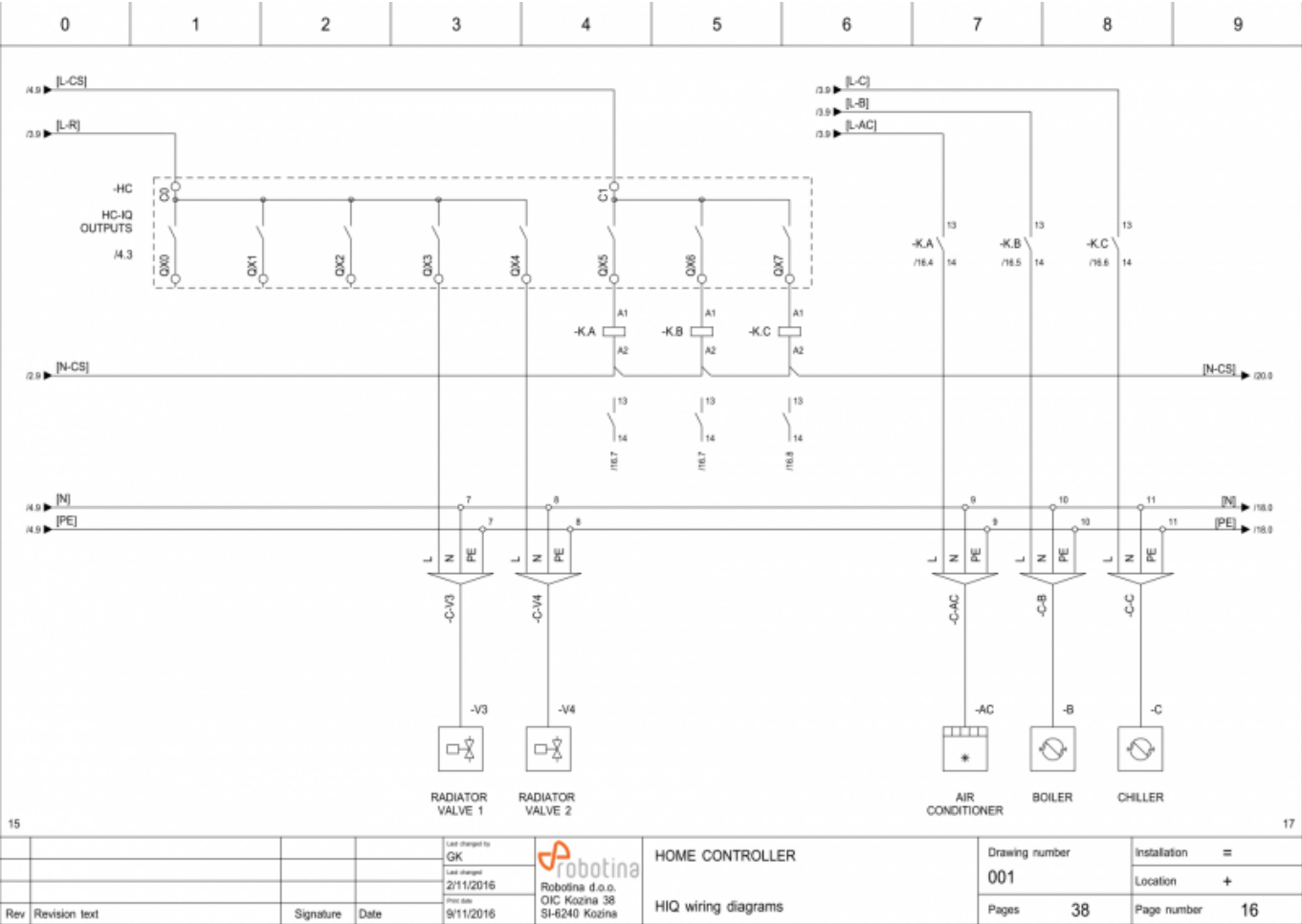
In our plan we use 2 radiator valves (and 3 [Fan-coil controllers](#)).

QX5 output - is used for Air Conditioner.

QX6 output - is used for Boiler.

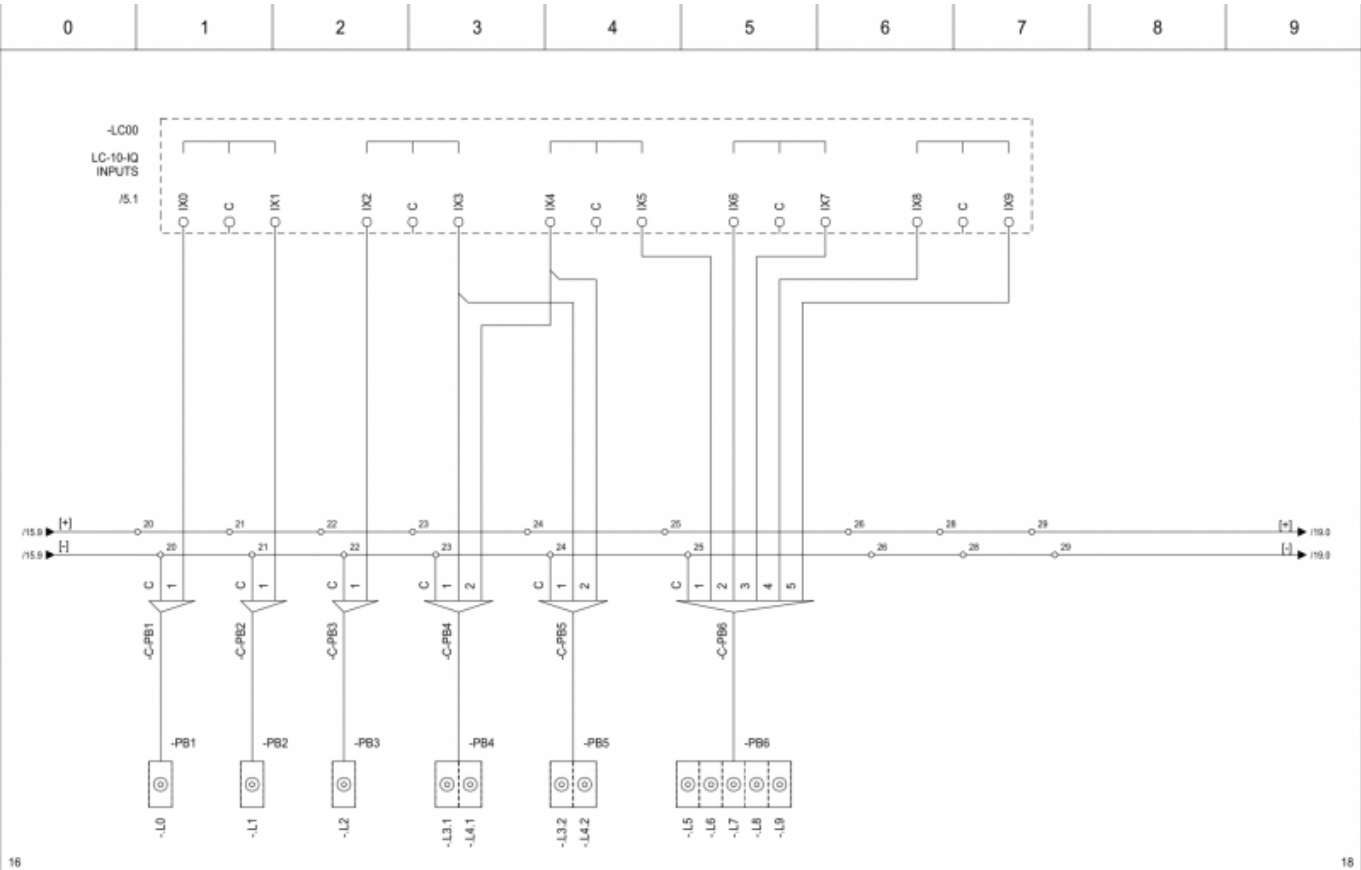
QX7 output - is used for Chiller.

All three outputs are connected to external installation relays (-K.A, -K.B and -K.C) .

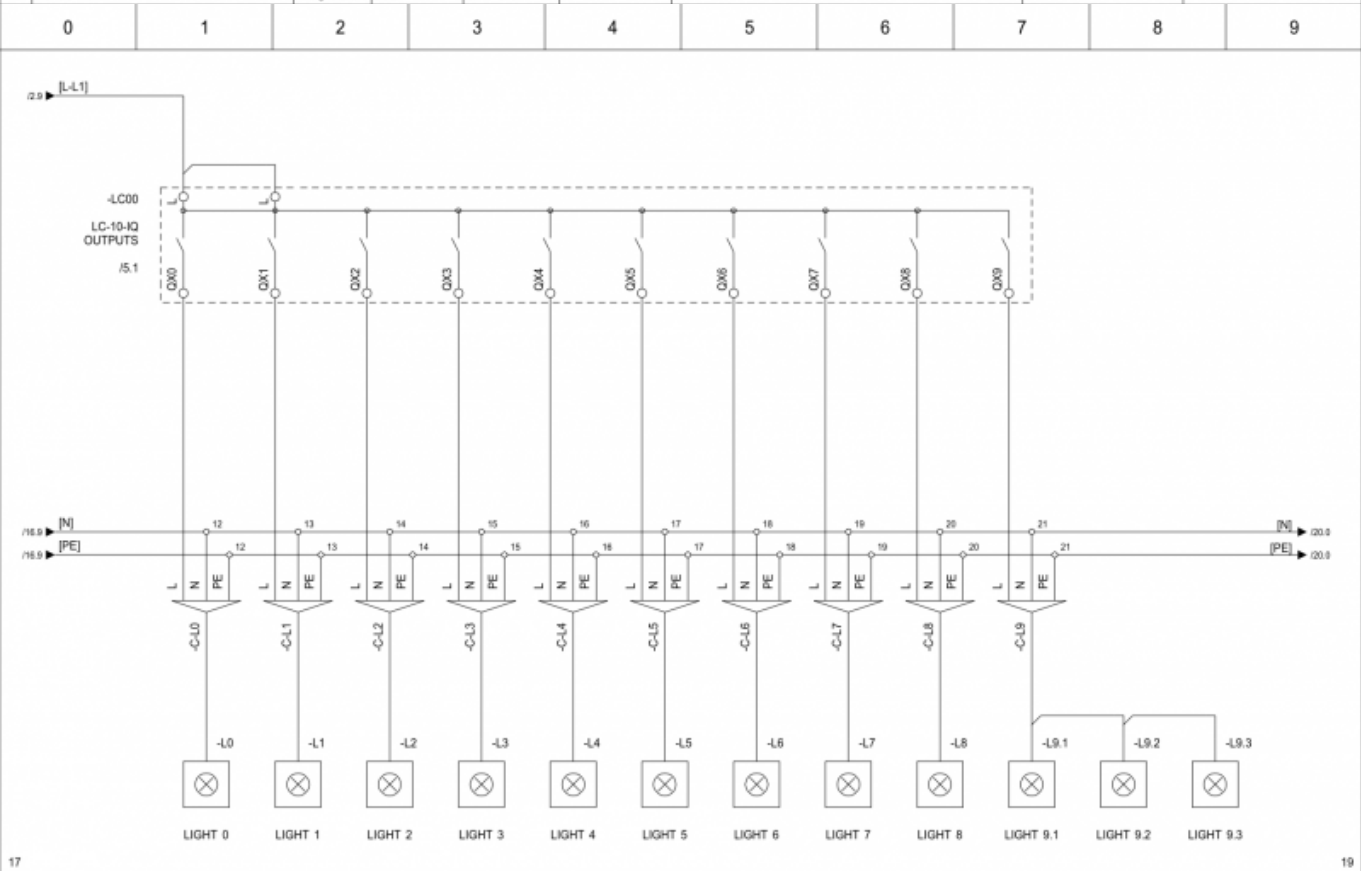


Page 17-24 - Light controller

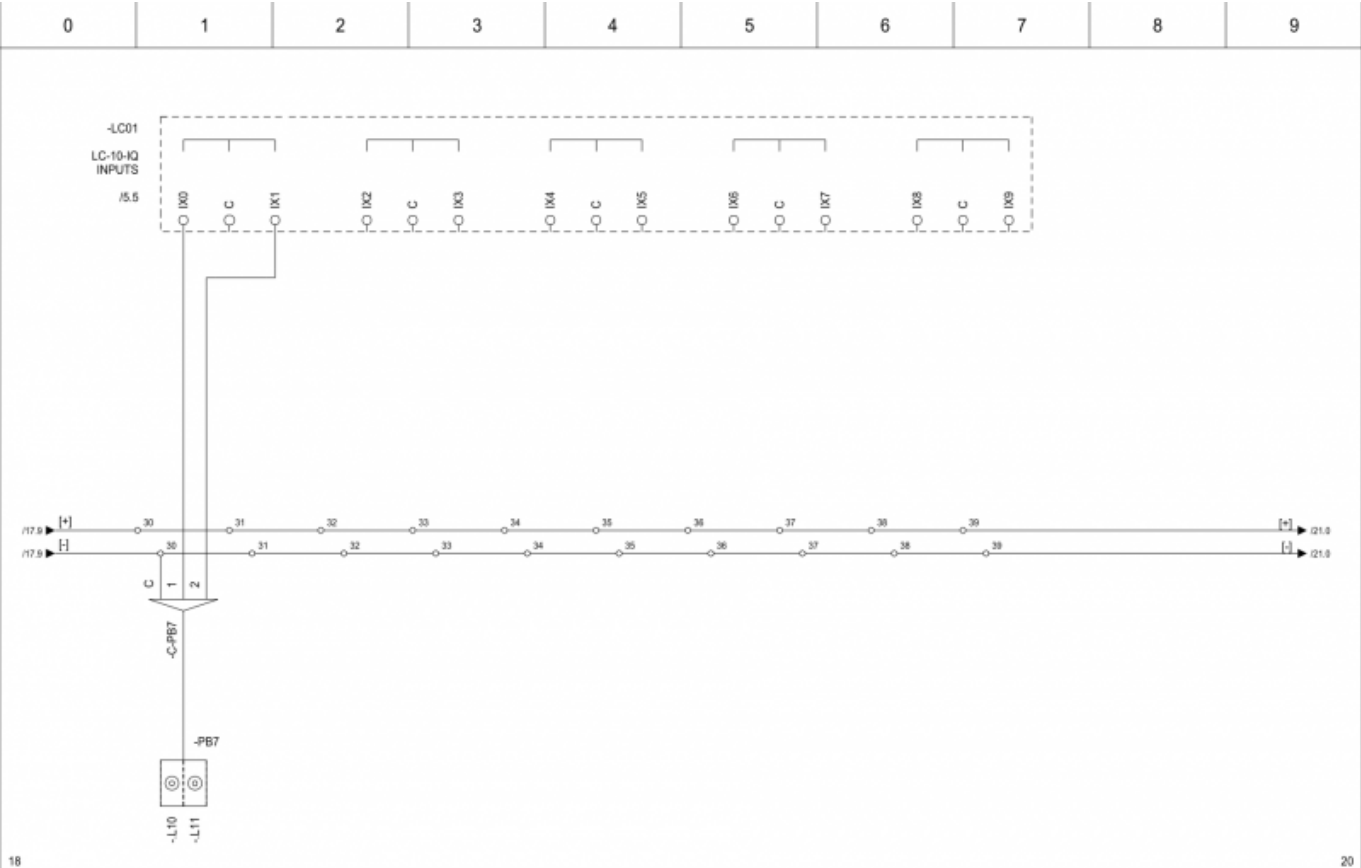
Lights and managed power sockets are connected to [Light controllers](#) .  
Several button combinations are possible.  
Managed power sockets should be connected through installation relays (-K12-K14, -K22-K23 and -K30-K33).



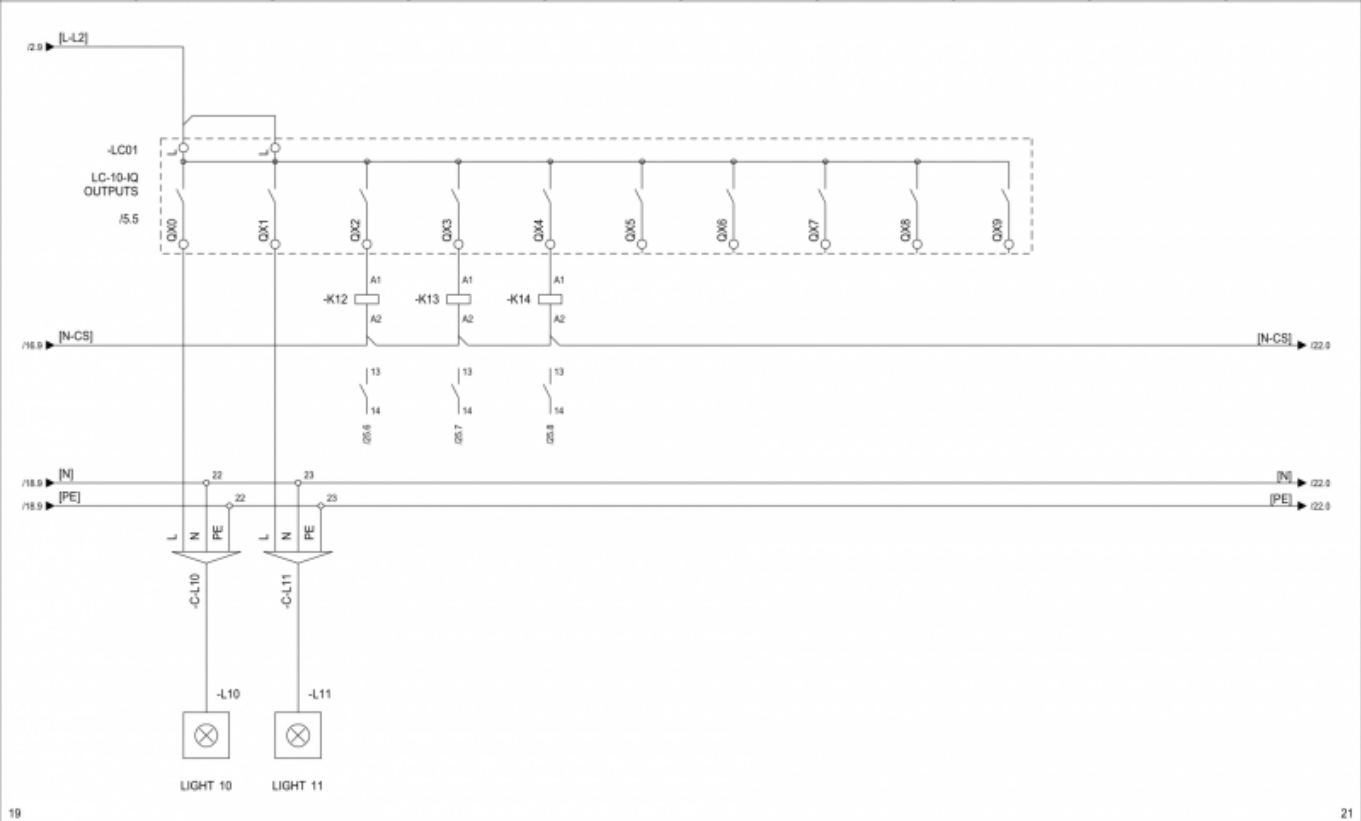
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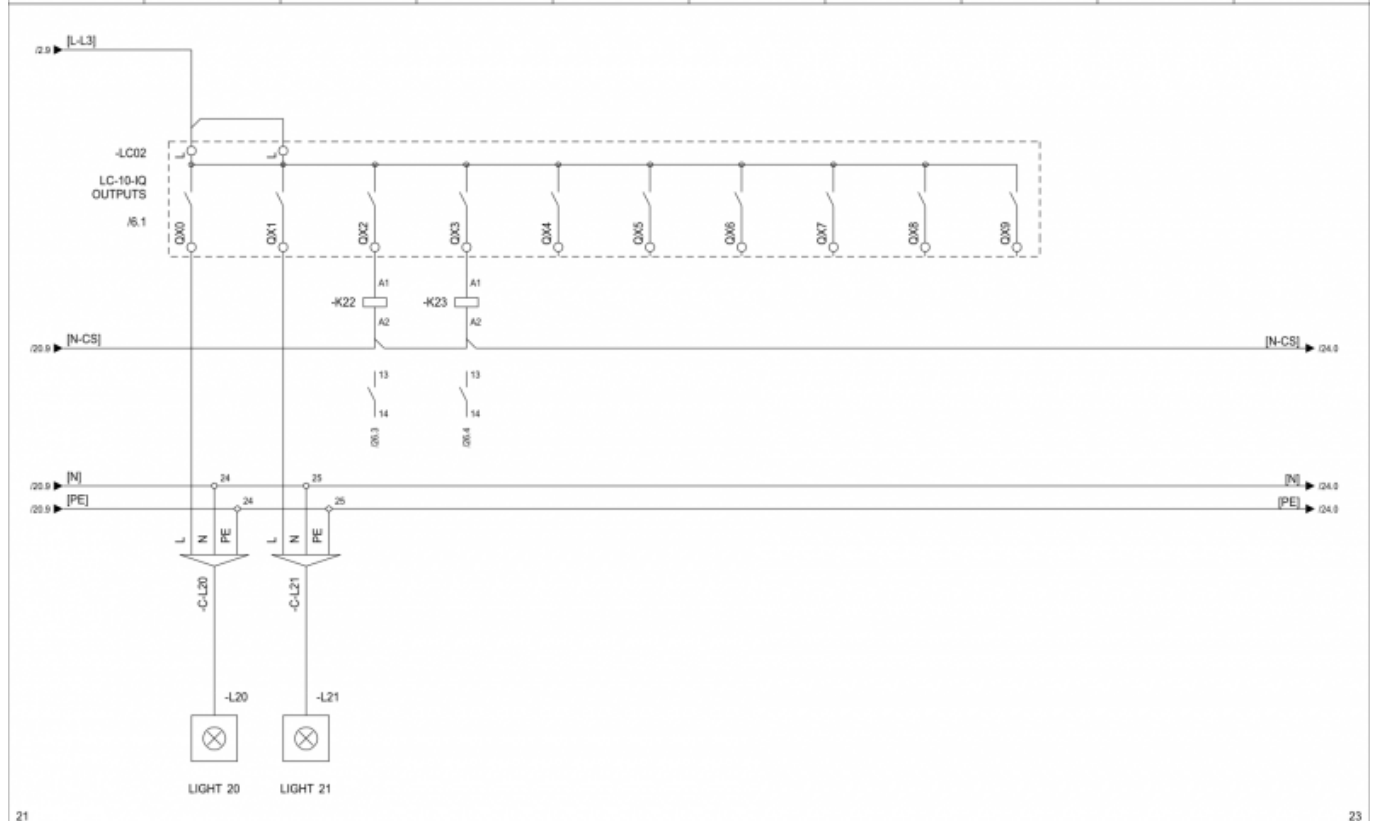
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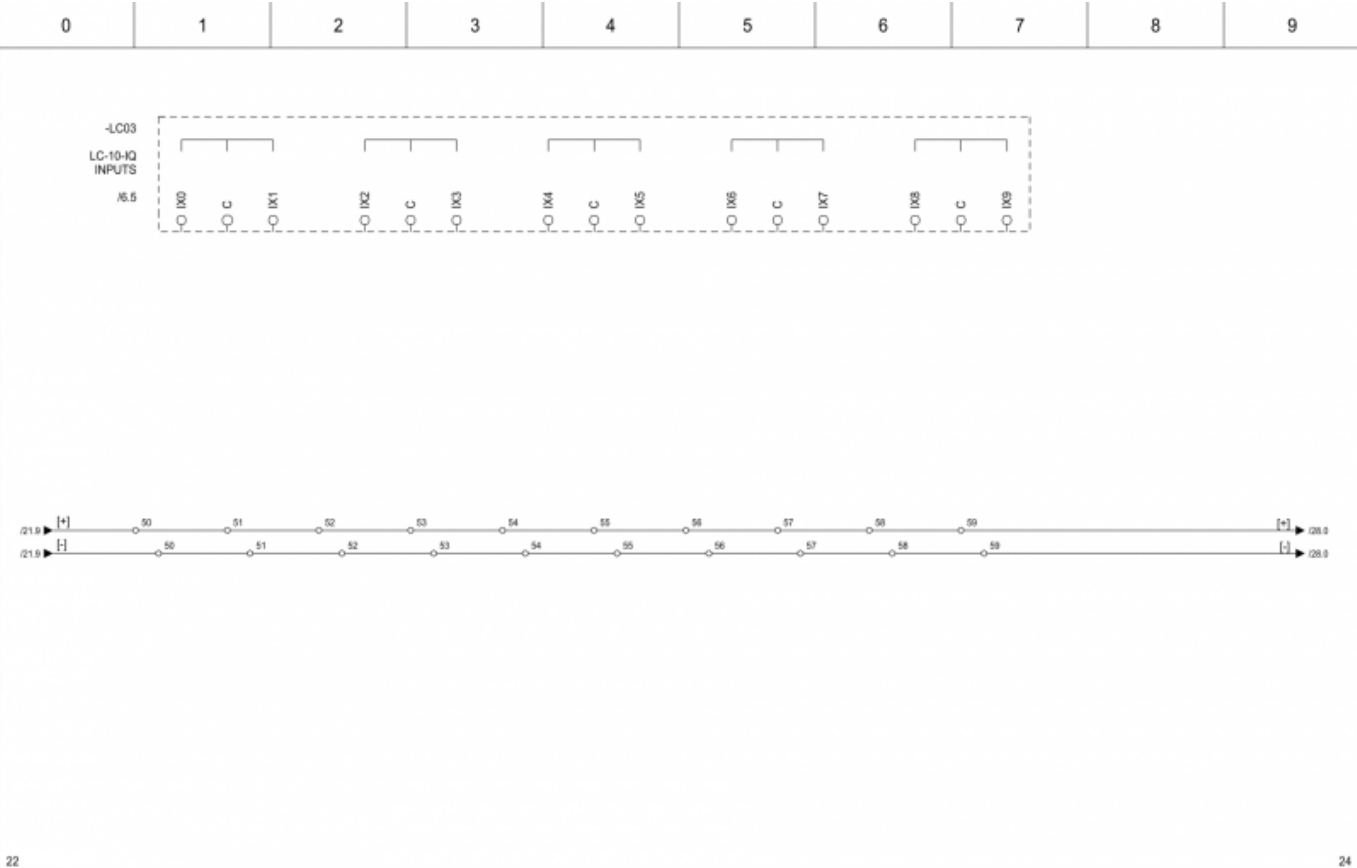


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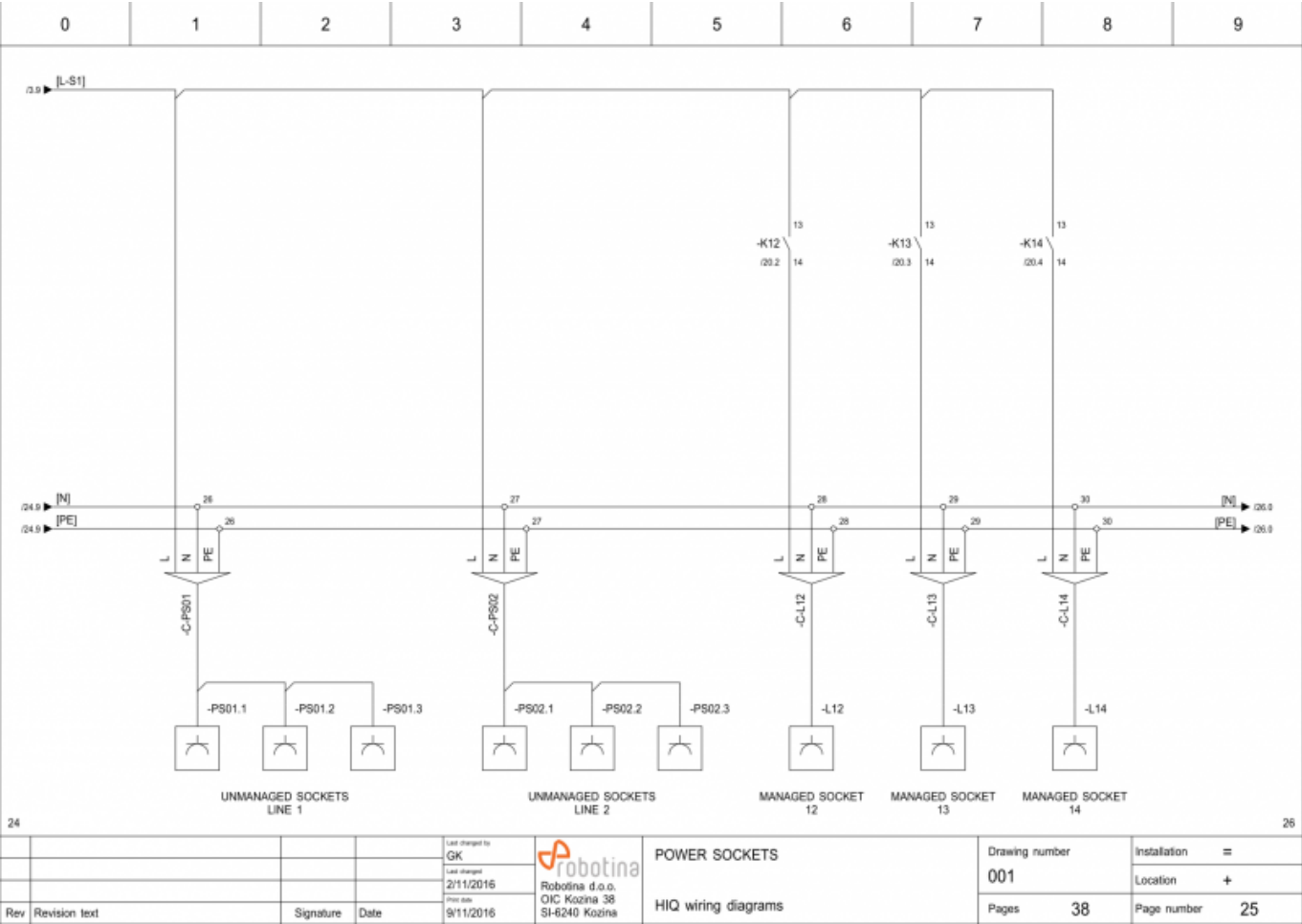


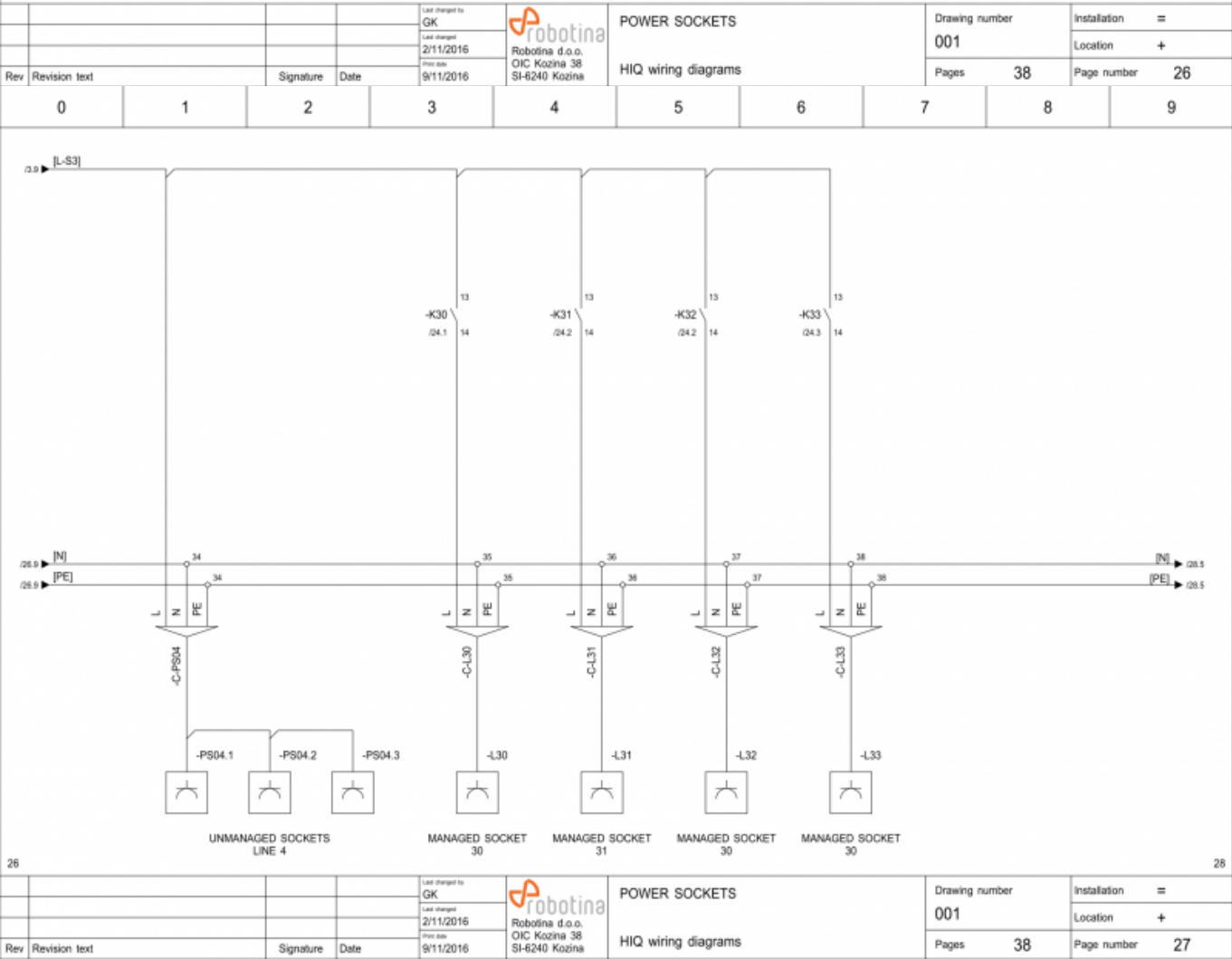
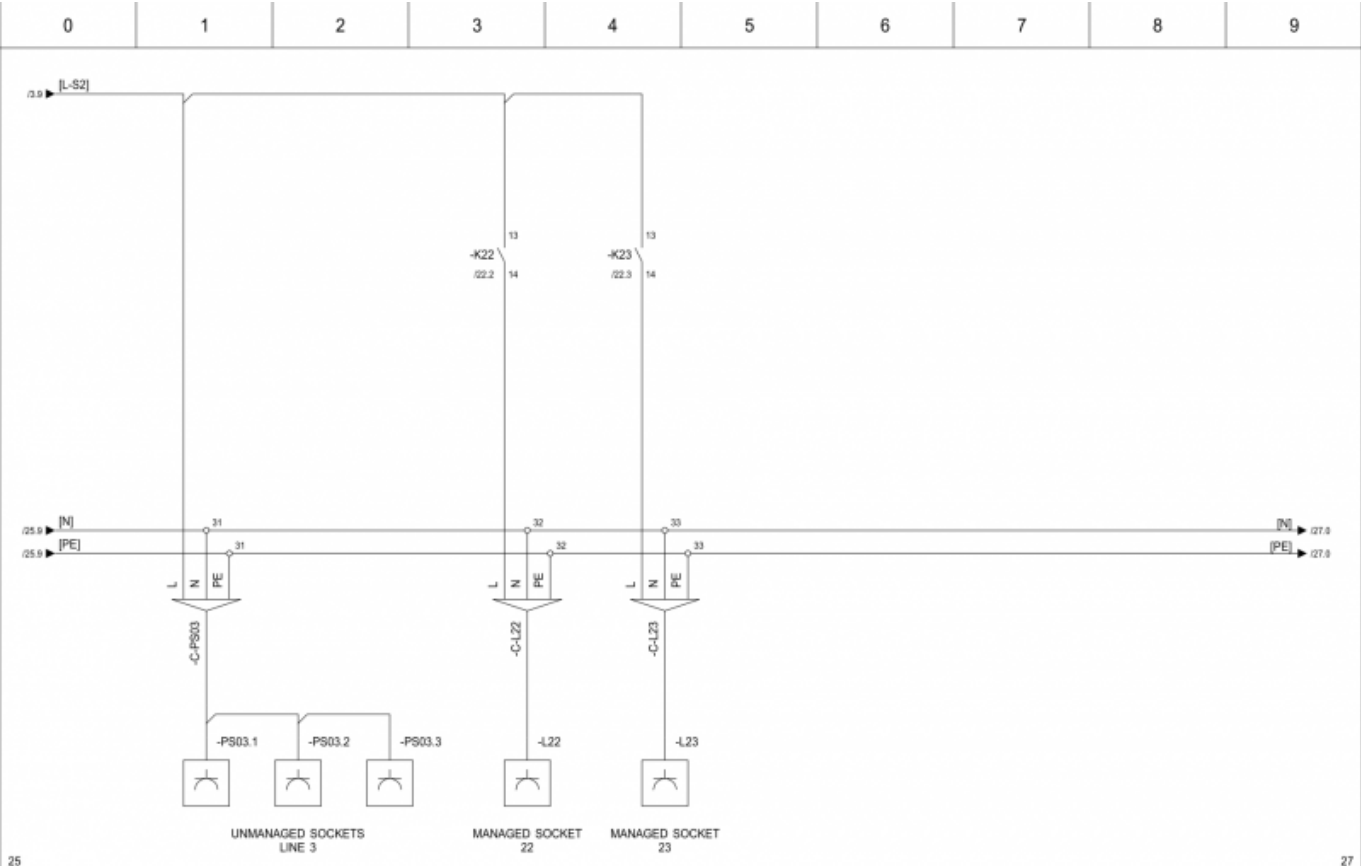


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Page 25-27 - Power sockets

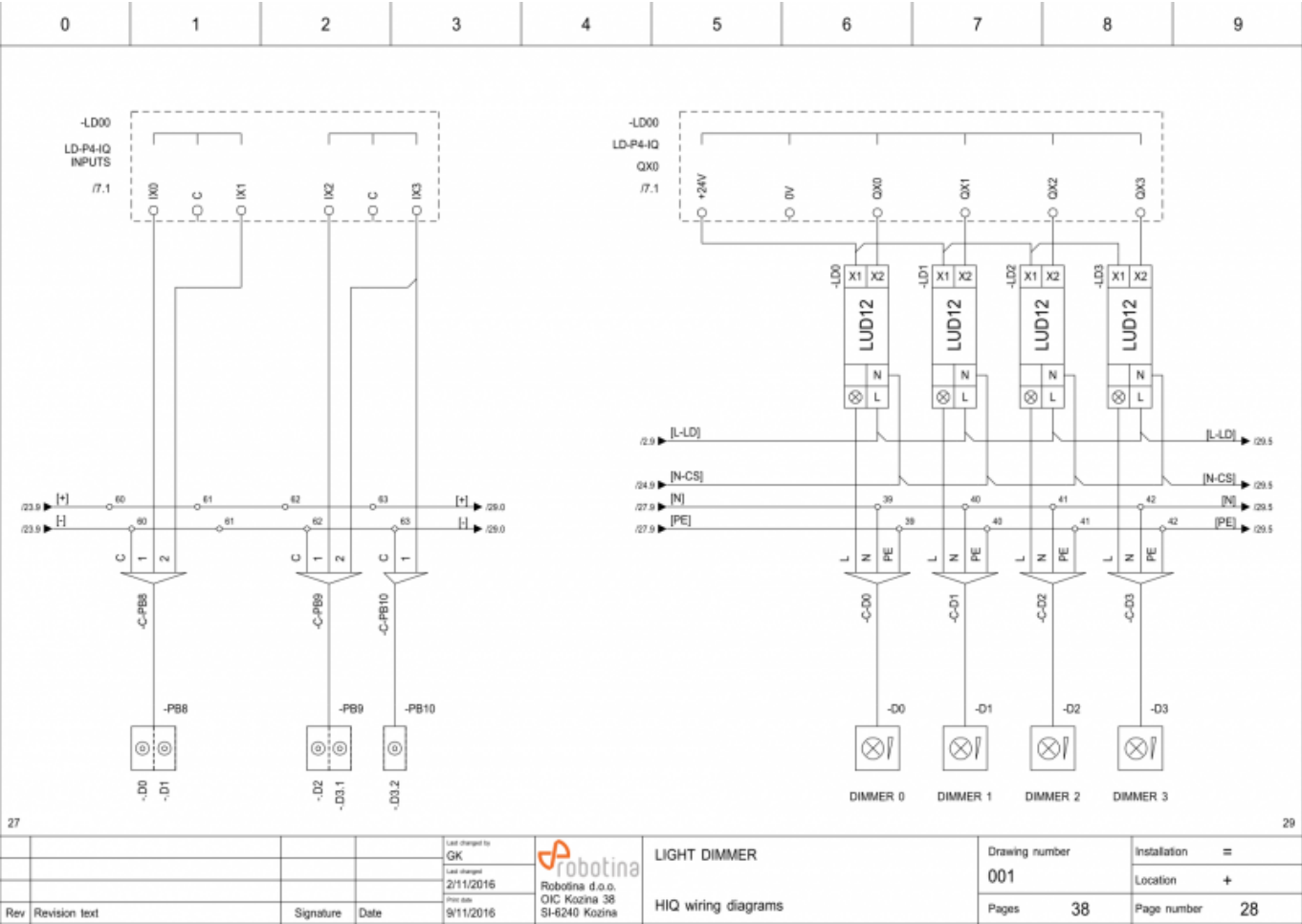
A sample plan assumes use of managed and unmanaged sockets. Managed sockets are connected to [Light controllers](#). External installation relays should be used on Light controller outputs.



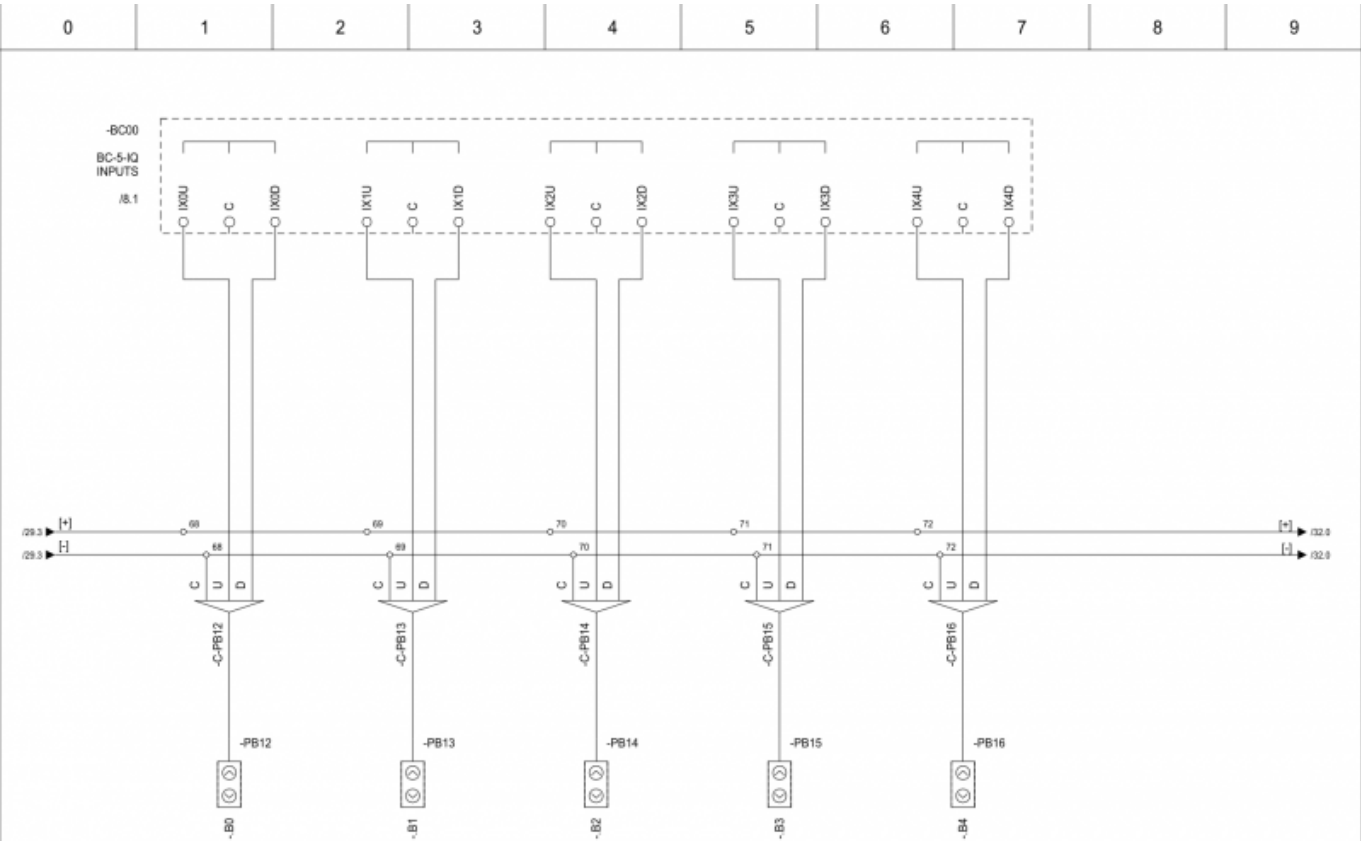


Page 28-29 - Light dimmers

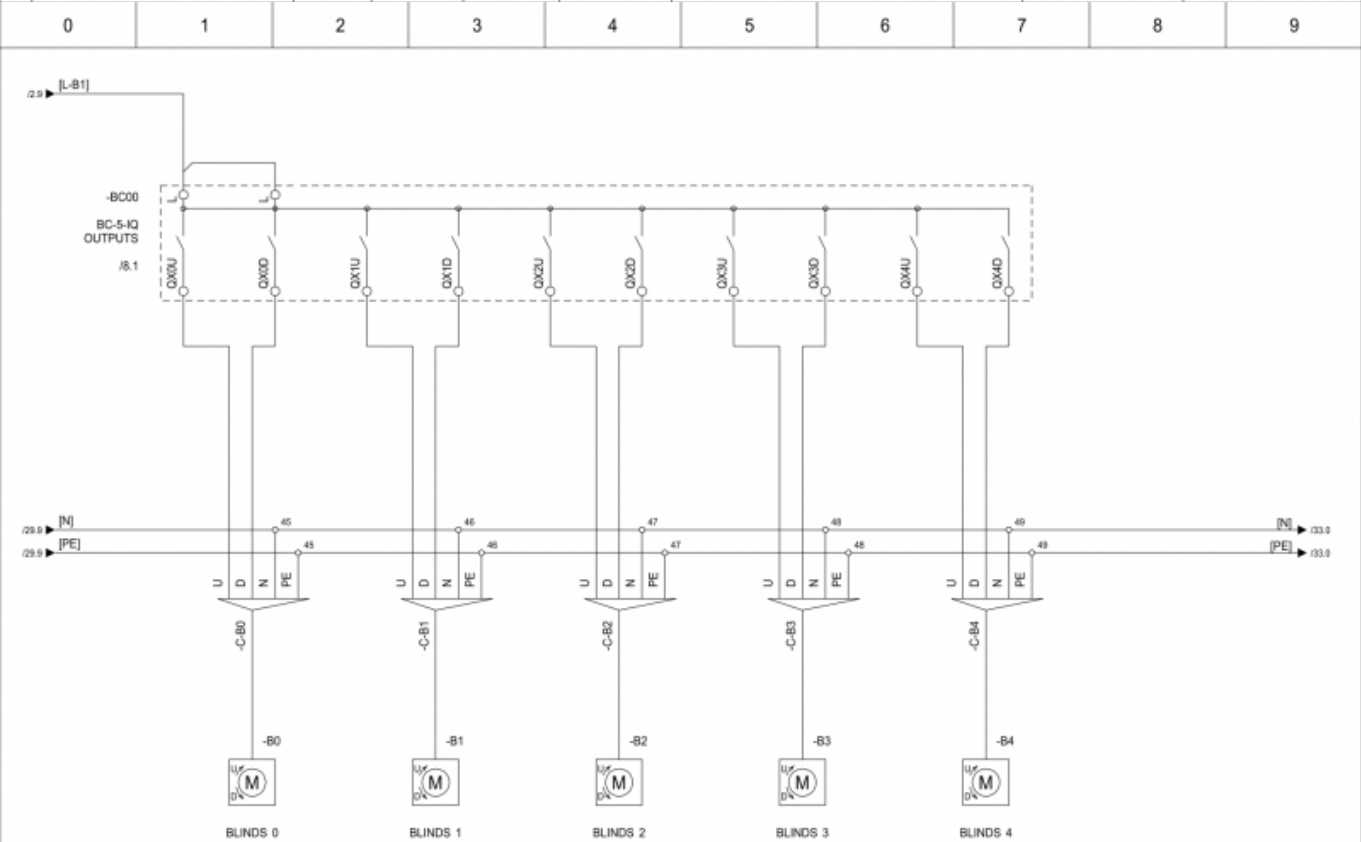
On sample plan we use 2 [Light dimmers drivers](#). On each driver we can connect up to 4 [LUD-12](#) universal light dimmers.



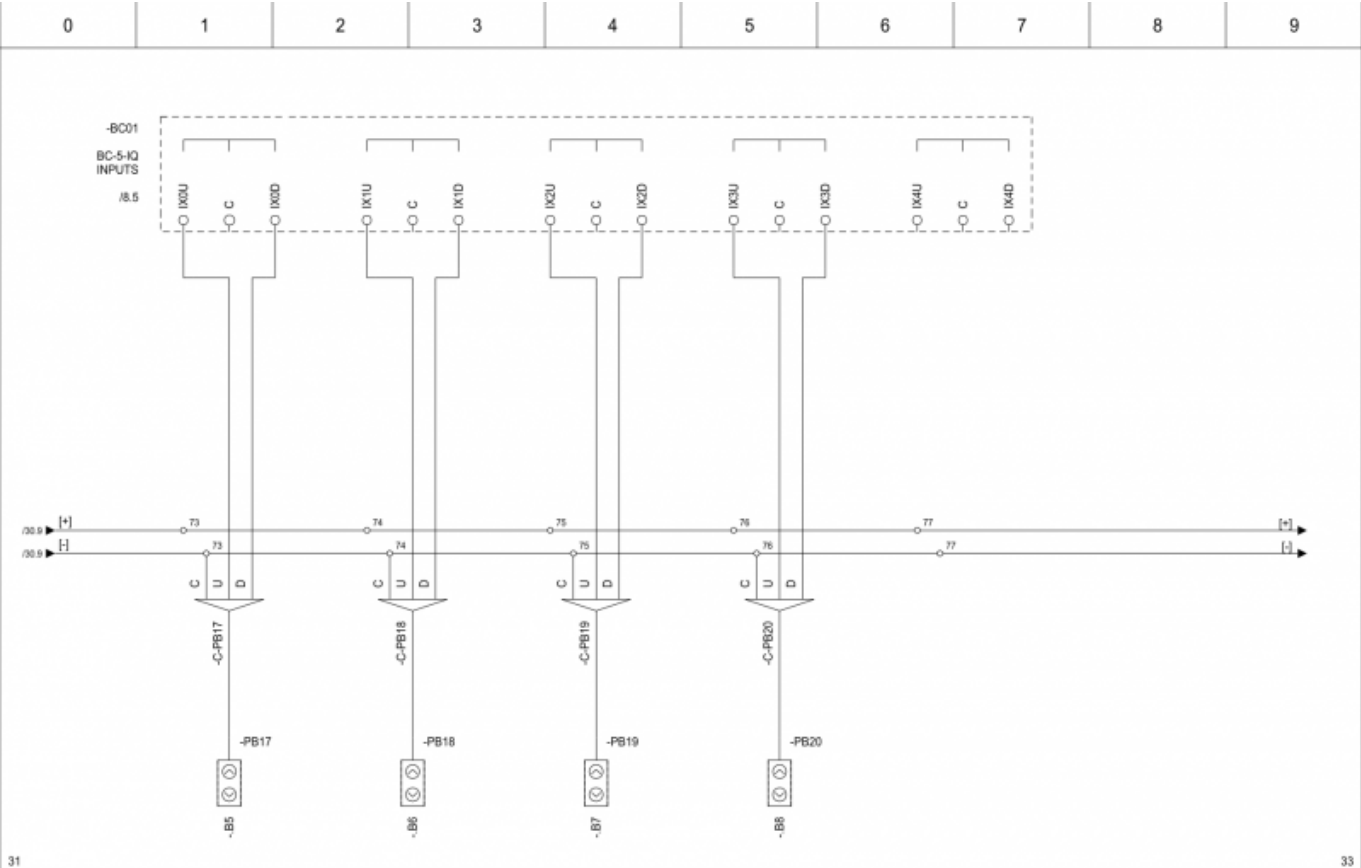




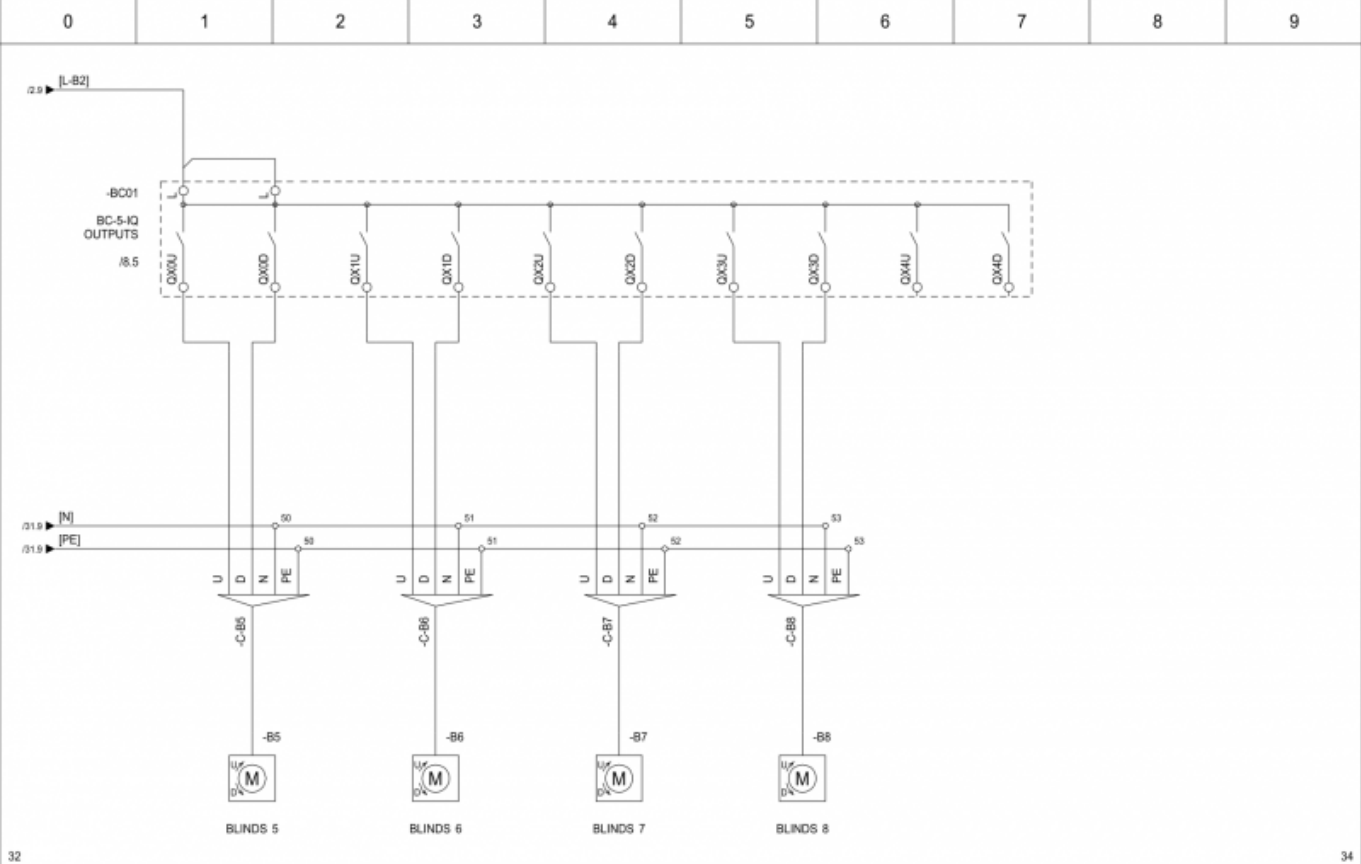
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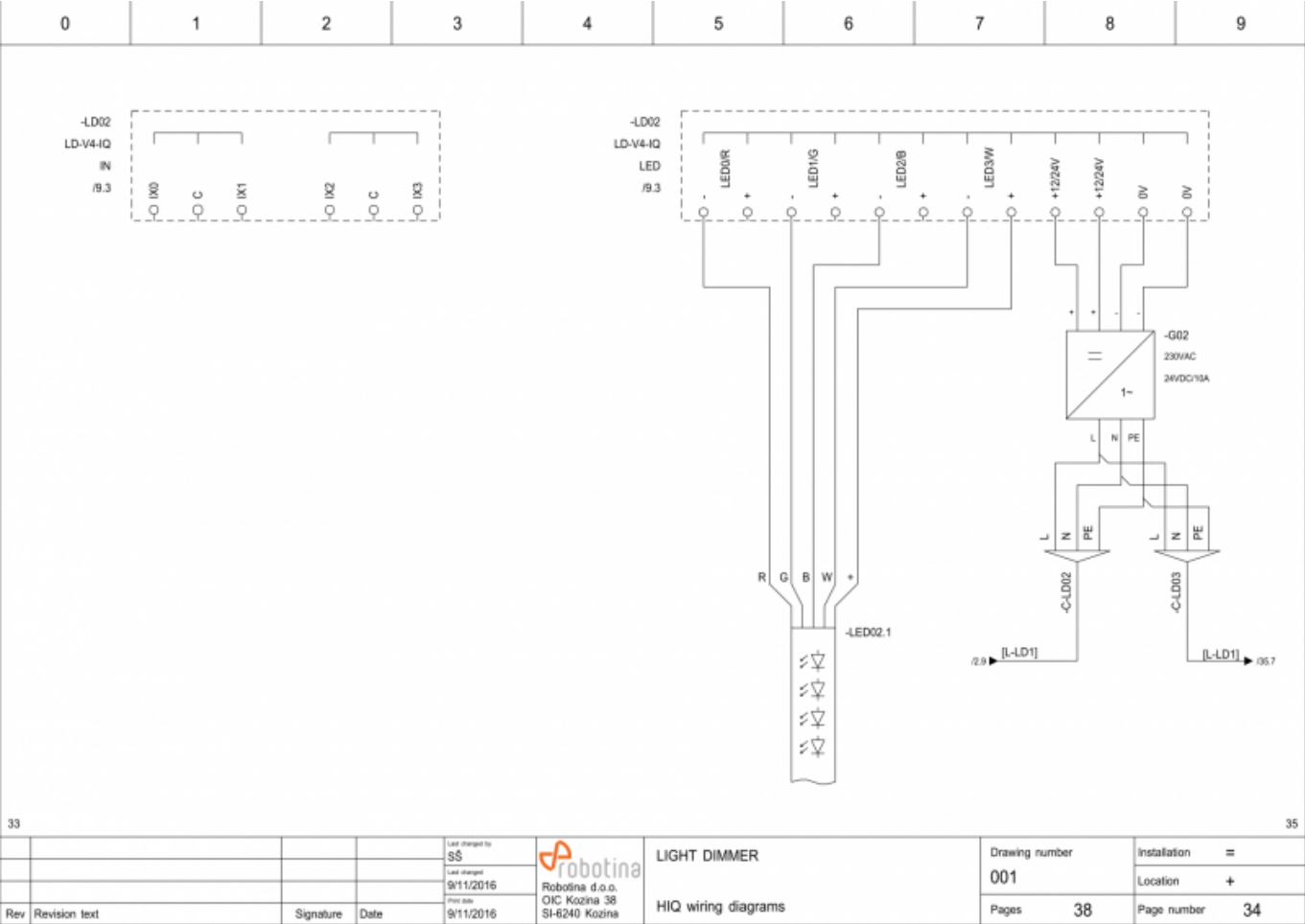
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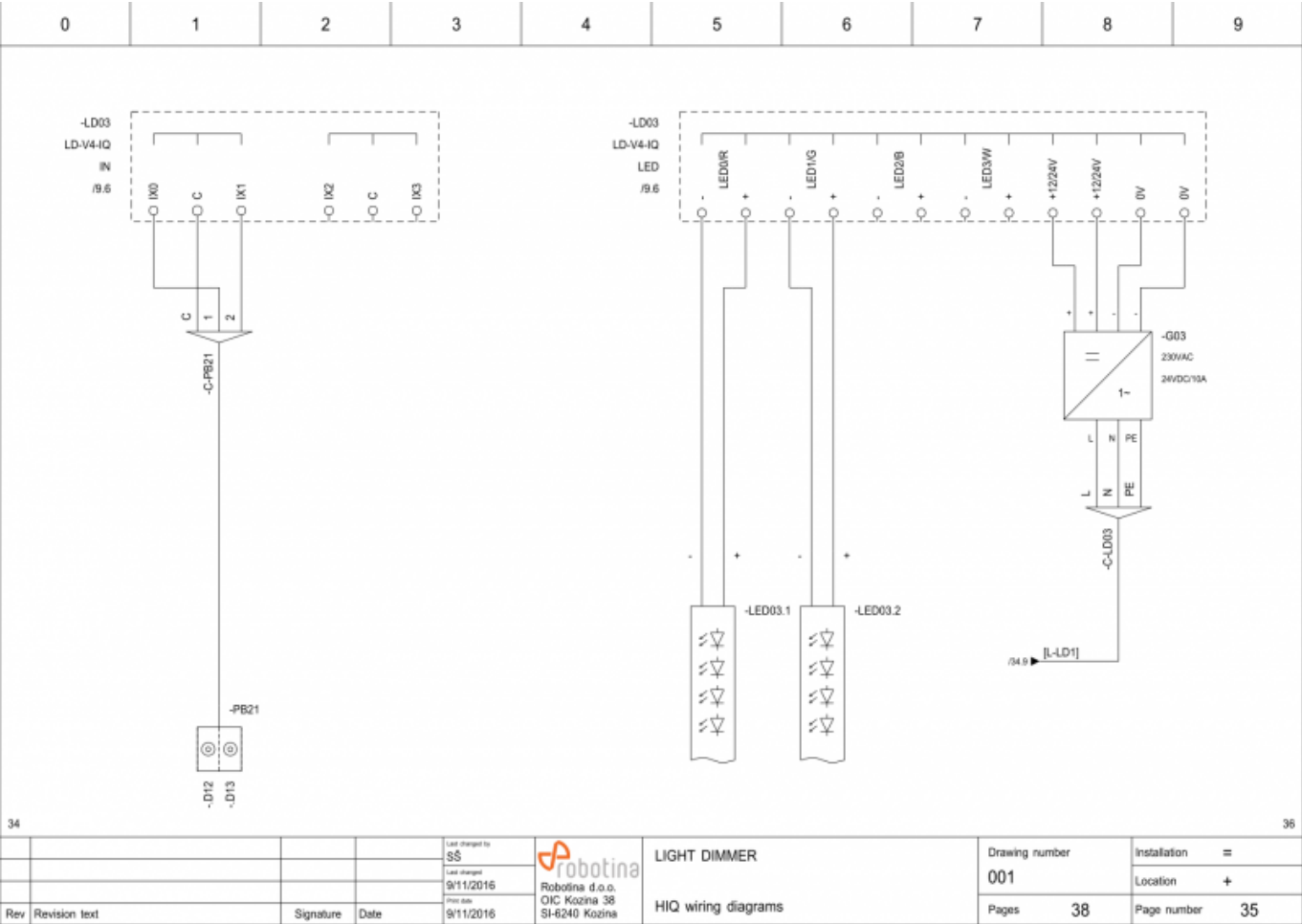
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Page 34-35 - LED stripe dimmer

On sample plan we use 2 LED stripe dimmers. RGBW (red-green-blue-white) LED stripe is connected on the first dimmer and the second dimmer controls 2 white LED stripes (2 outputs are empty). 2 push buttons are connected on the second dimmer.

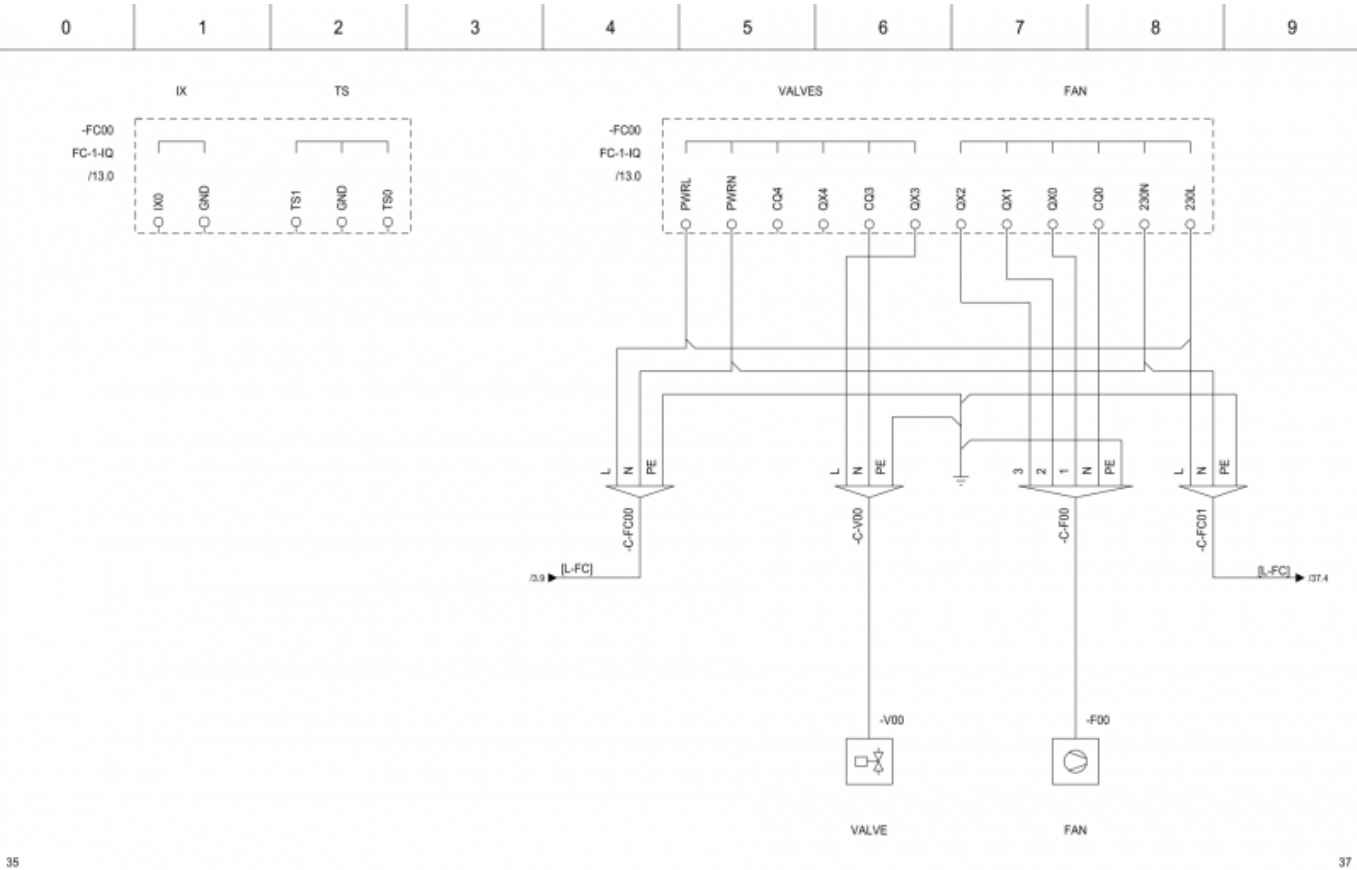




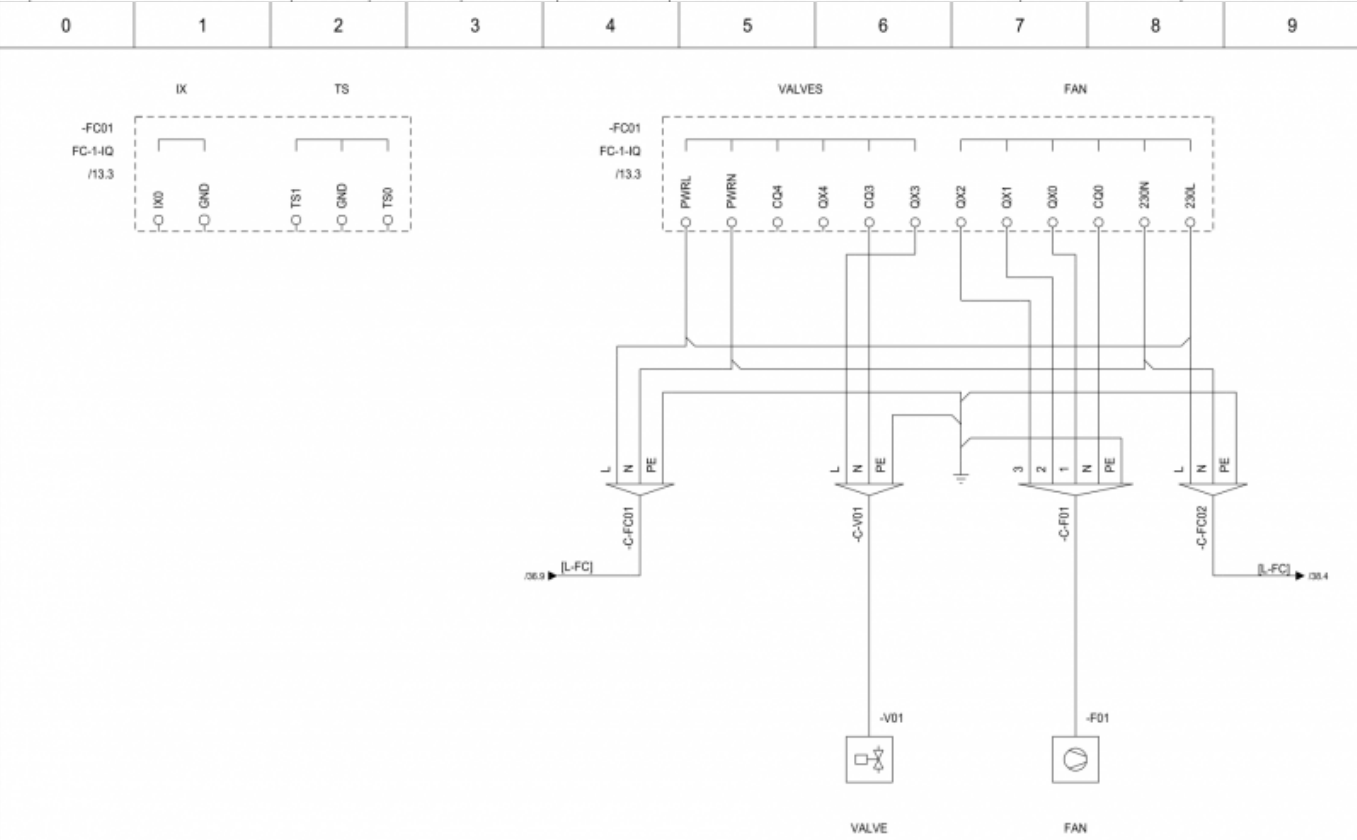


Page 36-38 - Fan-coil

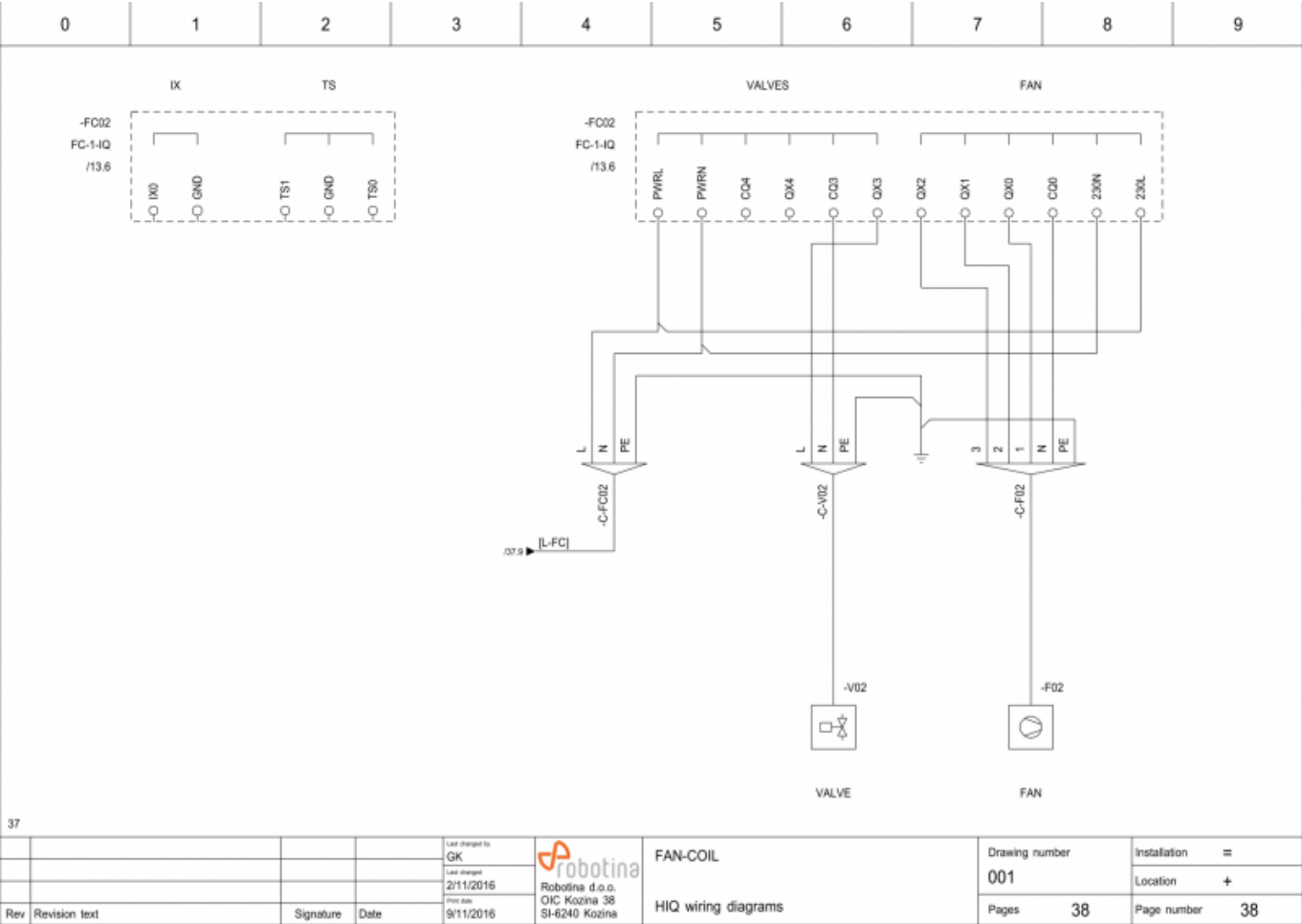
Fan-coil connection.



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37

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