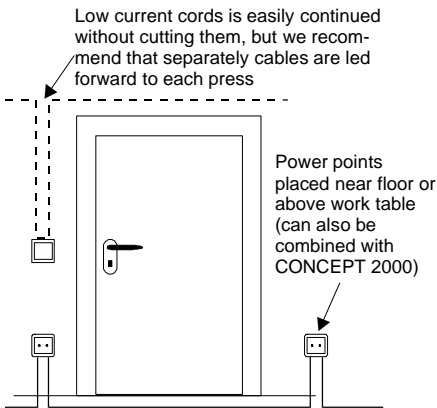


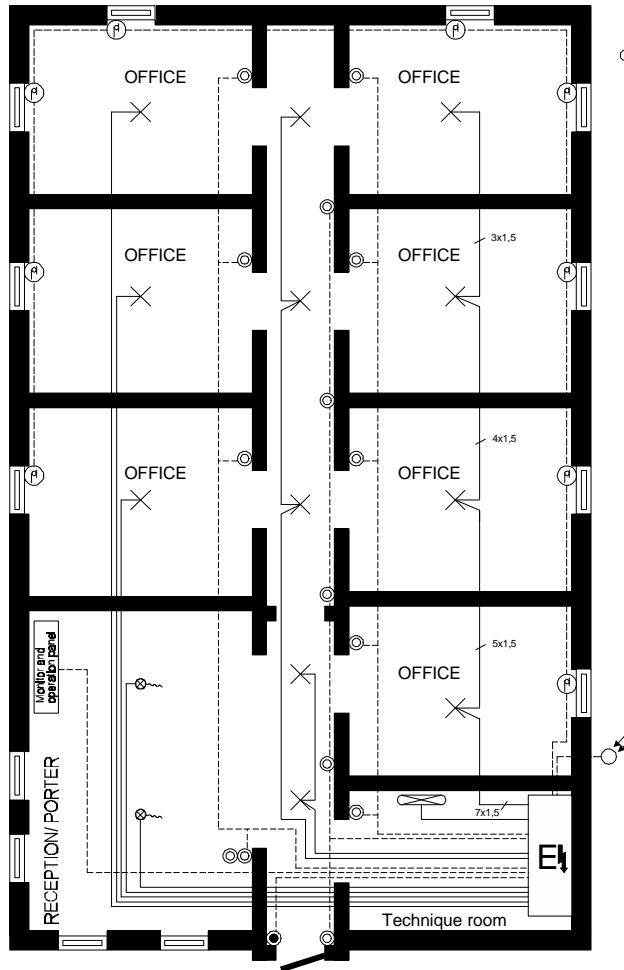
TIME IS "MONEY"

Planning and designing of Conson's intelligent lighting management system CONCEPT 2000 is simple: the system differs only slightly from ordinary well-known low current installations with throw-over relays. The modules are placed **in one or more** boards and supplied with 24 V DC control voltage from one or more power sources. The mains current (230V AC) is always connected at the top of the module, the low current always at the bottom. As the modules are controlled by low current (- minus), the low current cable, e.g. 0,6 mm (0,2 mm²). The control cords can be connected from button to button before being taken to the switchboard, but many electricians prefer to lay out a 7--14 conductor low current cable for each button. To secure the installation for future options, extra cords should be included for later expansion or reconstructed. Multi-cord cable with several switch cords can be installed for power points, light terminals and other "users". Later alterations can easily be made if all mains and low current cords are continued to the switchboard. CONCEPT 2000 is a bus system, but in contrast to other bus systems, CONCEPT 2000 does not require extra control electronics in buttons, contacts or other user elements. Ordinary make contacts with spring are used here. The electrician can service a Conson installation quickly and easily, without use of electronic controls. As each module has direct input/output, blackouts are avoided. The system is thus independent of a general control unit. The emphasis at Conson is on operational security. To save time and money when installing a low current installation, the button switches should be placed by the door and the power points by the floor (see diagram). Mains and low current are also kept separate.



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Installation example - lighting - office building



Legend:

- ⊗ Light
- ⊗ Neon light
- ⊗ Light with low-volt halogen trafo for dimming
- ⊙ Low current button ON/OFF
- ⊙ Low current button e.g. central ON/OFF
- ⊙ Light sensor
- Mains current cable
- - - Low current cable
- E1 Switchboard
- P Window contact (alarm/ surveillance)

TIME IS "MONEY"

The cable prices are decreasing! We therefore recommend that the cables are led forward separately and number them at both ends. It saves time and you are let off thinking and counting the string.

Calculation example:

Mains current: (number of conductors)
Cable 3x1,5 mm² PVIKL-J for each light (price about 4,- Danish Croner per./m)

Low current: (number of conductors)

- 1 press.....: Minus, 1 switch lead = 2
- 1 press+route light.: Plus, minus, switch lead= 3
- 5 presses.....: Minus, 5 switch cords = 6
- 5 presses+route light.:+ & -, 5 switch cords = 7
- 5 presses+route light+ 2 indications .: + & -, 5 switch leads+ 2 indication lead = 9

Be future-oriented and use low current cables type PTK 12x0,6 (5,-Kroner per./m) or PTK 8x0,6 (about 4,- Danish Croner per./m) for each press.



Installation

You avoid "electrosmog" (magnetic radiance) with Concept 2000. The intelligent modules are placed in one or several centrally placed switchboard. This way the 230 volt installation will be coupled in and out centrally. A centrally placed installation is also advantageous in the sense that the modules are faster to install, program, and repair the modules.

Electronics not placed centrally, e.g. a fluorescent tube fitting in 8 meter's height, can be difficult to repair when the electronics in the light fitting e.g. Blocks the entire light installation and when you do not know in which electronic fitting the defect is.

Consons intelligent lighting management system is constructed of modules for mounting on DIN rails. When mounting in boards with other electrical apparatus please note the following: In electrical installations today there are many different sources of noise which send impulses across the network. The sources can be frequency converters, motors controls, fluorescent lights etc. The noise impulses can effect all forms of electronics. Low current equipment and mains current equipment should always be separated, either via insulated cords or by separate wiring. Mains and low current should also be separated in cable trays. This also applies to the switchboard, where for example separate mains and low current channels (see illustration) should be established. To comply with applicable safety regulations, the difference between mains and low current must be at least 8 mm.

INSTALLATION TIPS: - Programming-

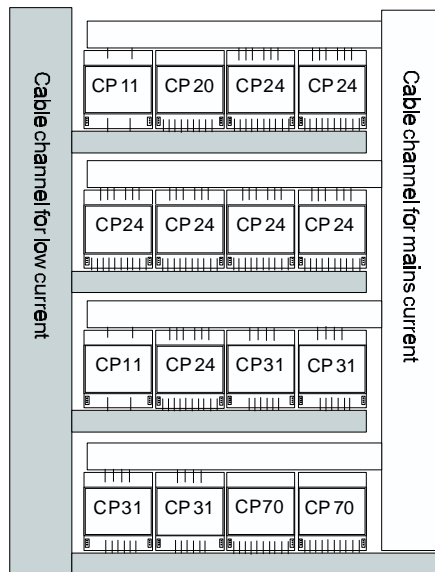
When the modules get their final test at Conson, they are programmed with "All off" on channel 1, and "All on" on channel 2 switch link 1. That means that your system can be used instantly as it is.

TIP: When you have connected your modules, then start with reading the data from the various module types and execute the "copy" function N1 to N2, N2 to N3 etc. When this is done, make the changes you want and send your data back to the modules.

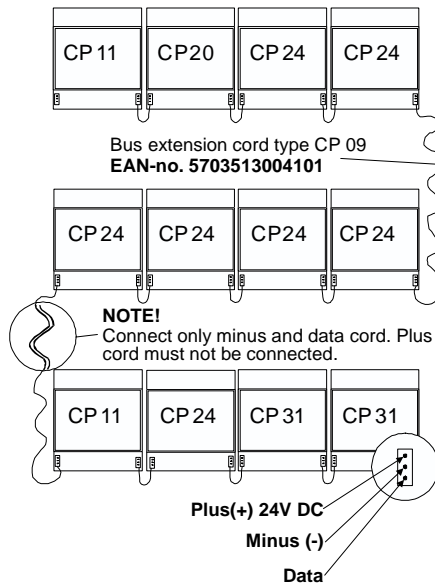
TIP: Buy the package solution CONKIT I + II + III + IV, this way you save money and get a complete system. If you need a larger system you simply just buy more CONKITs - It is as easy as that.

TIP: Borrow the CONKEY from your local electrical wholesaler. He is able to give you expert advice on his demo display.

Switchboard arrangement

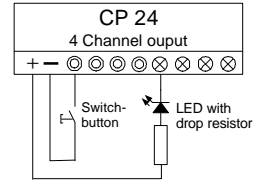


Switchboard arrangement



Connection example of relaymodule CP 24

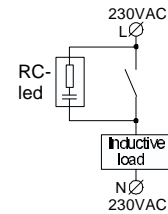
The illustration below shows connection of button switch and external indicator LED. The indicator outputs can be loaded with max. 75 mA and are connected to minus (-).



Increasing the life of relay contactors

At larger inductive and capacitive loads it can be an advantage to install an RC coupling in parallel with the relay contact (see Fig. 1). This will reduce spark formation (arcing) at the relay contacts and thus increase their life.

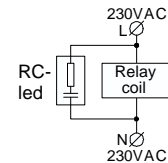
Fig. 1



Noise

If the board is equipped with contactors, it is advisable to add an RC coupling to the coil in order to avoid disturbances in the electronics (see Fig. 2).

Fig. 2



Relay coil 24V DC

For control of 24V DC relays a protective diode must be installed in parallel with the relay coil (see Fig. 3). If this is not done, the electronics in the module may be damaged by the induction voltage of the relay coil. The coil current must also not exceed the maximum current for the output (usually 75mA).

Fig. 3

