Installation modular contactors – article

During this year trade ELTARG 2004 fair in Katowice, ETI - POLAM from Pułtusk introduced the new product from the range of the modular equipment mounted on TH 35 rail - installation **contactor.**
These contactors are innovative cinematic solution of the electromagnetic core, which serves as drive for contact points of the contactor.

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Installation modular contactors are connecting devices intended to serve as maneuvering couplings in electric circuits in devices such as : lighting, heating devices etc. Described in this article modular (Fig. 1) contactors in the dependence from its rated current are provided with industrial symbols R 20..., R 25..., R 40..., R 63... . They have different combinations of the pinout - clenched (normally opened) and unclenched (normally closed). The pinout of the contactor defines the second element in the form of the number, whereat the first number defines number of clenched contacts (NZ) and the second defines number of unclenched contacts (NZ). Eg. R 40 - 31 symbol determines the contactor on the rated current 40 A, which contains three clenched contact points and one unclenched contact point, definite on the schema by symbol R, (schema is shown on the Fig. 2). With the moment of the voltage appearance on coil the electromagnet coil, contactor moving parts after defeat retractive powers of springs cause the lock of clenched contact points (NO) ensuring suitable tight between contact points or opening contact points (NZ). On the front panel (in the bottom part) all contactors have the control window, wherein emerging the red color signals the presence of the voltage on coil. Mentioned first, all innovative solution regarding operation of the contactor electromagnet, that contactors composite core has two chattel parts, which after the voltage appearance on coil are simultaneously pulled and move in reverse directions (closing the magnetic circuit) and closing or opening contact points of the contactor (Fig. 3). None from moving parts of the electromagnet core does not touch the casing of the contactor . In the moment of getting down to work the contactor, when both parts of the electromagnet will become pushed from opposite directions, moments of their activity put out and do not transfer shocks on the casing of the contactor, where through operation of the contactor is quiet and without vibrations of the casing. In the moment of AC dump on coil, moving parts of the electromagnet half-open simultaneously in reverse directions causing return of the contactor contact points to the rest position (Fig. 4).

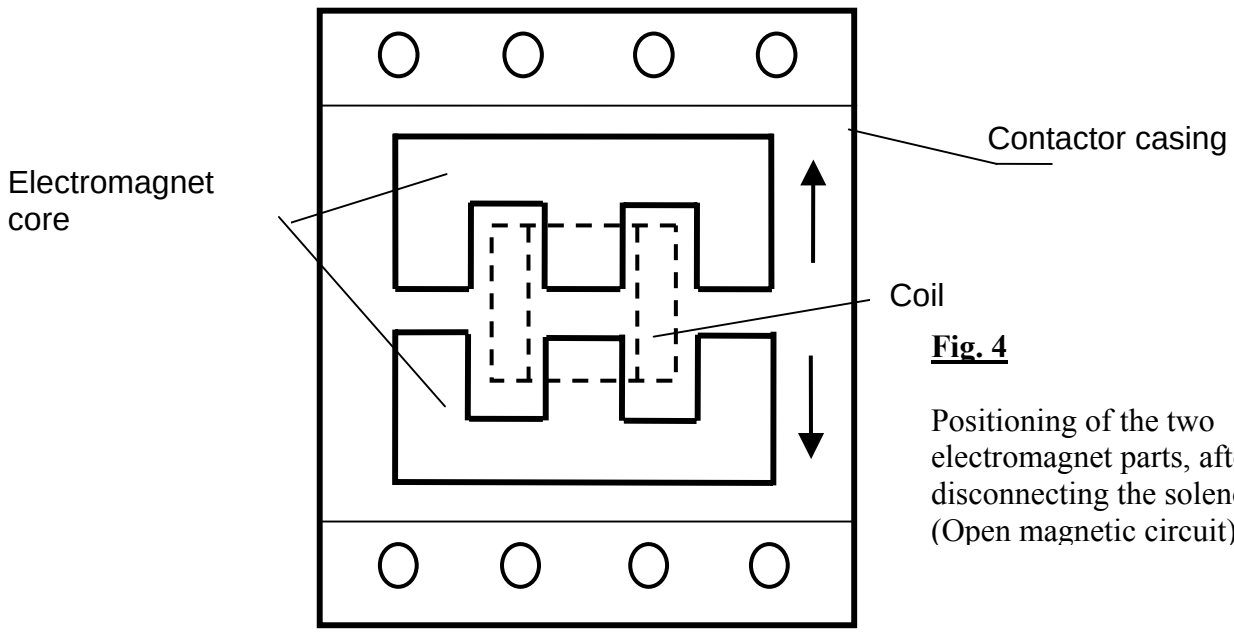

Fig. 4

Positioning of the two electromagnet parts, after disconnecting the solenoid (Open magnetic circuit).

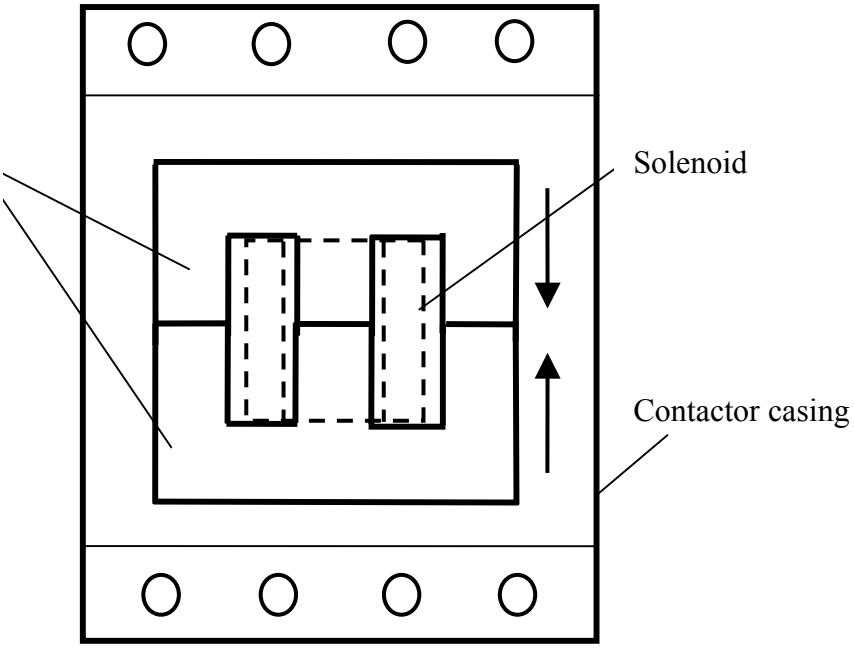

Fig. 3

Positioning of two electromagnet parts, after witching on coil voltage. (Magnetic circuit closed)

Optional extras for presented above contactors are following elements:

- Additional auxiliary contact points RH 11 - clenched and unclenched (NO + NZ)- Fig. 5 . These contact points have width 0, 5 of the module and are mounted on the right side of contactors R 25..., R 40...., R 63... . There serve to make the external circuit as the signaling of getting down to work the contactor, switching on the reserve, holdings up contact points, etc.
- Cover to seal connectors of the contactor P 721 - for the contactor R 25..., P 690 for the contactor R 40..., R 63... - Fig 6. These covers protect current connectors of the contactor. They are equipped with special opening for wire drawing, whereon puts on the seal making impossible consequently the access of the user to current contact points.
- Distance insertion P 730 - Fig 7. Distance insertion serves for the installation on the TH 35 rail between contactors, in case when contactors are operating in ambient temperature higher than 40^{o}C. This help to avoid in this case the direct adhesiveness contactors, what would lead to their overheat.
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Other most important contactors technical data:

Coils rated voltage - 230 V , 24 V
The admissible frequency connections for AC1 and AC3 - R 20... and R 25.... - 300/h
- R 40... and R 63.... - 600/h
Mechanical durability - 1 millions. of cycles
Coupling durability at AC 3 - 150 thousand of cycles
Main Connectors capacity - R 20... and R 25... - 1, 5 - 10 mm^2
- R 40... and R 63... - 2, 5 - 25mm^2
- coils - 0, 75 - 2, 5 mm^2
Power of electromagnets coils - 0, 8 - 2, 6 W

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Fig. 2

Contacts point of the contactor
R40 - 31

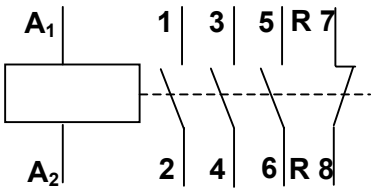

Fig. 1

Fig. 6

Fig. 5

Fig. 7