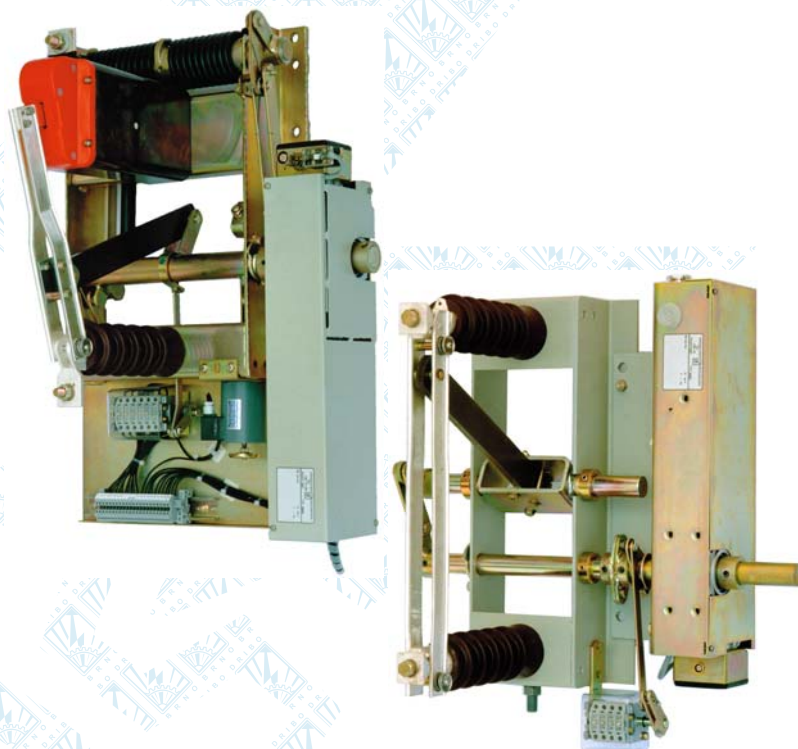


Indoor switches for railway lines

single-pole design
rated voltage up to 27,5 kV
rated current up to 4000 A



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ISO 9001
ISO 14001
BUREAU VERITAS
Certification



General

These Driescher indoor switching devices are specifically designed for railway applications.

They are in compliance with the specifications according to EN 50152-2.

The single-pole switches can be used for a rated voltage range of 15 kV to 27.5 kV, depending on the respective design, and for a rated current range of 400 A to 4000 A.

Operating conditions

The equipment can be installed in places at an altitude of up to 1000 meters above sea level. At an altitude above 1000 meters the rated insulation level of the switchgear must be adjusted accordingly.

The switchgears are designed for use under normal operating conditions in compliance with EN 62271-1.

According to this specification the following limit values apply:

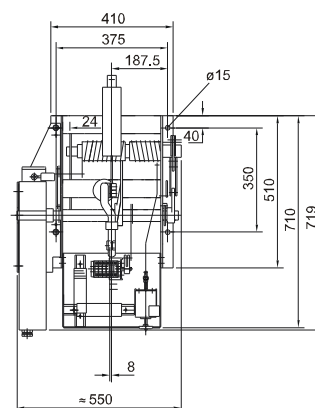
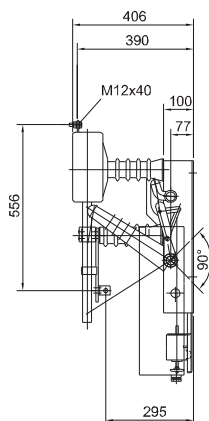
- maximal ambient temperature: + 40°C,
- maximal 24 hours average temperature: + 35°C,
- minimal ambient temperature: – 15°C.

Single-pole indoor load disconnecter H 27-1B

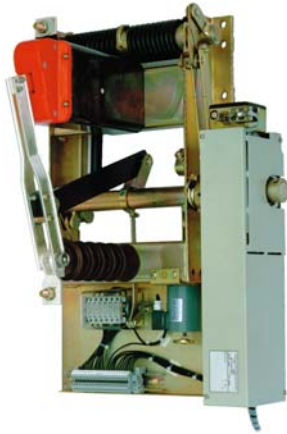


- quick-make and quick-break operation
- with motor operated drive UM 10 and release coil
- with signalling contact (6-pole) and terminal strip
- for contact line feeders and transformer-train preheating

rated voltage	U_r	15 kV
rated current	I_r	400 A
rated insulation level	U_{Nm}	17,5 kV
rated impulse voltage	U_{Ni}	125 kV
short-duration power-frequency test level	U_a	50 kV
rated frequency	f_r	16 $\frac{2}{3}$ Hz
rated breaking current	I_{load}	400 A
rated short-time withstand current	I_k	16 kA
rated duration of short-circuit current	t_k	1 s
rated peak withstand current	I_p	40 kA
rated short-circuit making current	I_{ma}	40 kA
weight		45 kg

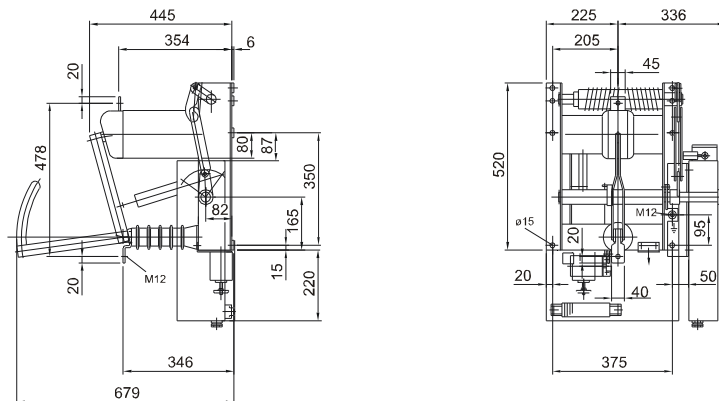


Single-pole indoor load disconnecter H 29-1B



- quick-make and quick-break operation
- with motor operated drive UM 10 and release coil
- with signalling contact (6-pole) and terminal strip
- for contact line feeders and transformer-train preheating

rated voltage	U_r	15 kV
rated current	I_r	630 A
rated insulation level	U_{Nm}	17,5 kV
rated impulse voltage	U_{Ni}	125 kV
short-duration power-frequency test level	U_a	50 kV
rated frequency	f_r	16 2/3 Hz
rated breaking current	I_{load}	100 A
rated short-time withstand current	I_k	20 kA
rated duration of short-circuit current	t_k	1 s
rated peak withstand current	I_p	50 kA
rated short-circuit making current	I_{ma}	5 kA
weight		50 kg

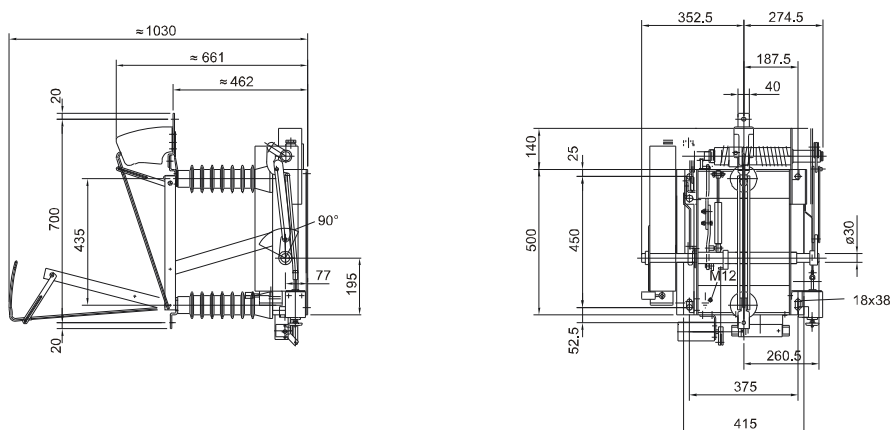


Single-pole indoor load disconnecter H 22-1B



- quick-make and quick-break operation
- with motor operated drive UM 10 and release coil
- with signalling contact (6-pole) and terminal strip
- for contact line feeders and transformer-train preheating

rated voltage	U_r	27,5 kV
rated current	I_r	630 A
rated insulation level	U_{Nm}	29 kV
rated impulse voltage	U_{Ni}	185 kV
short-duration power-frequency test level	U_a	80 kV
rated frequency	f_r	50 Hz
rated breaking current	I_{load}	630 A
rated short-time withstand current	I_k	20 kA
rated duration of short-circuit current	t_k	1 s
rated peak withstand current	I_p	50 kA
rated short-circuit making current	I_{ma}	20 kA
weight		45 kg

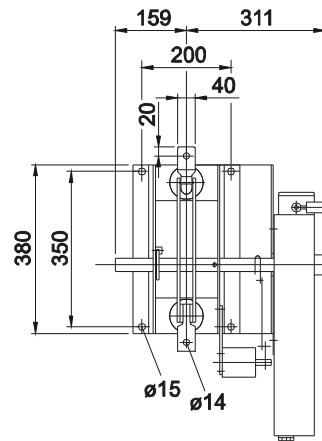
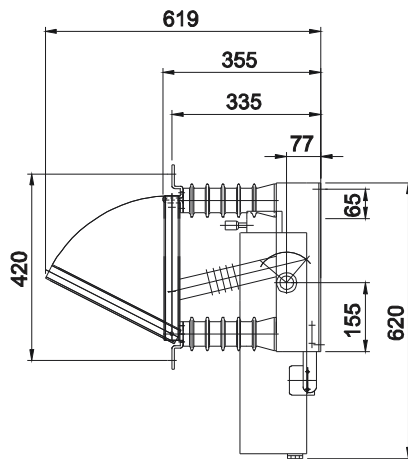


Single-pole indoor disconnecter L31/070194

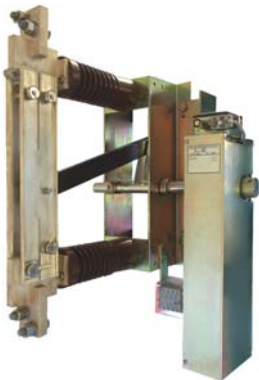


- with motor operated drive UM 10
- with signalling contact (4-pole)

rated voltage	U_r	15 kV
rated current	I_r	630 A
rated insulation level	U_{Nm}	17,5 kV
rated impulse voltage	U_{Ni}	125 kV
short-duration power-frequency test level	U_a	50 kV
rated frequency	f_r	16 ⅔ Hz
rated short-time withstand current	I_k	20 kA
rated duration of short-circuit current	t_k	1 s
rated peak withstand current	I_p	50 kA
weight		40 kg

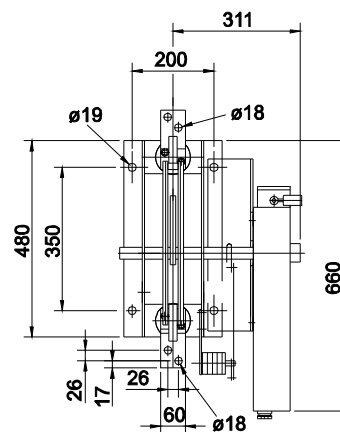
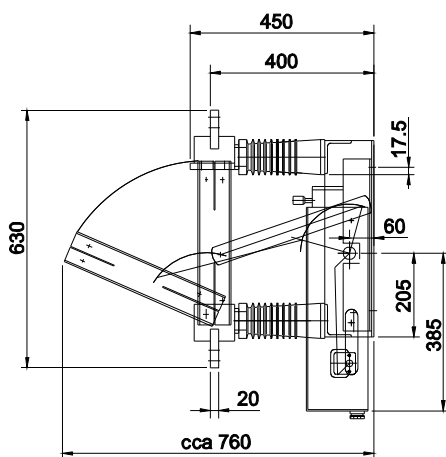


Single-pole indoor disconnecter L31/070196



- with motor operated drive UM 10
- with signalling contact (4-pole)

rated voltage	U_r	15 kV
rated current	I_r	1600 A
rated insulation level	U_{Nm}	17,5 kV
rated impulse voltage	U_{Ni}	125 kV
short-duration power-frequency test level	U_a	50 kV
rated frequency	f_r	16 ⅔ Hz
rated short-time withstand current	I_k	31,5 kA
rated duration of short-circuit current	t_k	1 s
rated peak withstand current	I_p	80 kA
weight		45 kg



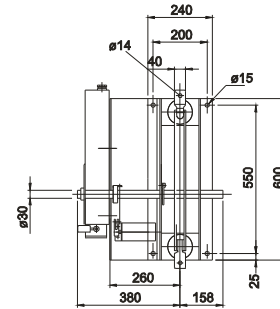
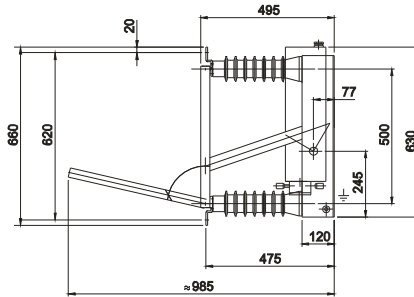
Single-pole indoor disconnectors for rated voltage of 27,5 kV



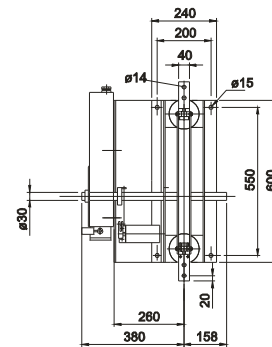
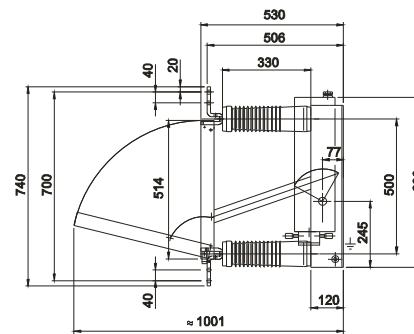
- with motor operated drive UM 10
- with signalling contact (8-pole)

rated voltage	U_r	27,5 kV	27,5 kV	27,5 kV	27,5 kV
rated current	I_r	630 A	1250 A	2500 A	4000 A
rated insulation level	U_{Nm}	29 kV	29 kV	29 kV	29 kV
rated impulse voltage	U_{Ni}	185 kV	185 kV	185 kV	185 kV
short-duration power-frequency test level	U_a	80 kV	80 kV	80 kV	80 kV
rated frequency	f_r	50 Hz	50 Hz	50 Hz	50 Hz
rated short-time withstand current	I_k	20 kA	31,5 kA	40 kA	50 kA
rated duration of short-circuit current	t_k	1 s	1 s	1 s	1 s
rated peak withstand current	I_p	50 kA	80 kA	100 kA	125 kA
weight		40 kg	43 kg	45 kg	50 kg

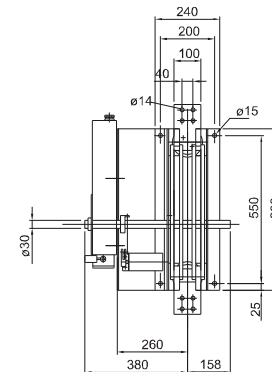
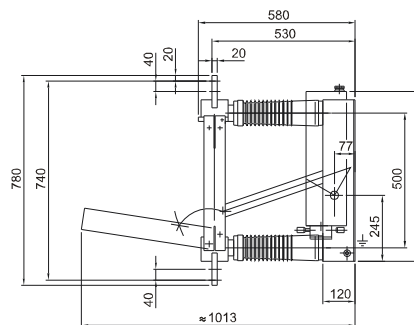
630 A
L31/093304



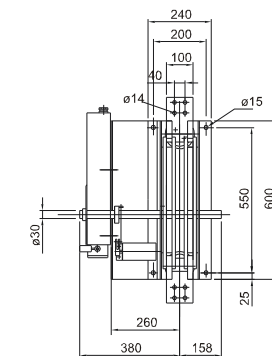
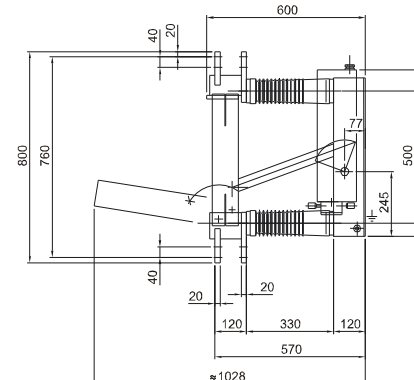
1250 A
L31/094741



2500 A
L31/093305



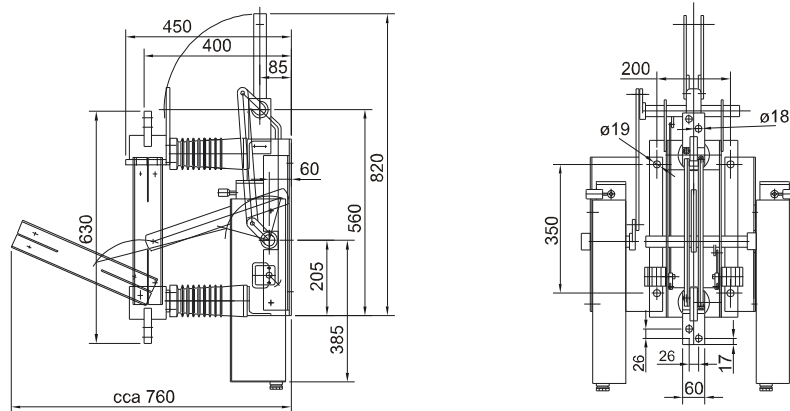
4000 A
L31/093306



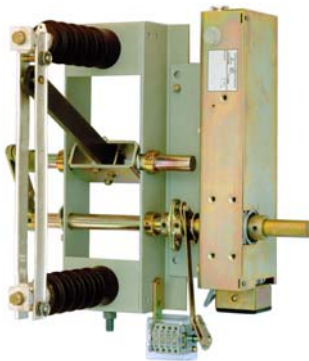
Single-pole indoor disconnectors with earthing switch

- with motor operated drives UM 15
- with signalling contact (4-pole)

type	L31/090820	L31/100065
rated voltage	U_r 15 kV	15 kV
rated current	I_r 1600 A	1600 A
rated insulation level	U_{Nm} 17,5 kV	17,5 kV
rated impulse voltage	U_{Ni} 125 kV	125 kV
short-duration power-frequency test level	U_a 50 kV	50 kV
rated frequency	f_r 16 2/3 Hz	16 2/3 Hz
rated short-time withstand current	I_k 40 kA	40 kA
rated duration of short-circuit current	t_k 1 s	1 s
rated peak withstand current	I_p 100 kA	100 kA
weight	55 kg	55 kg

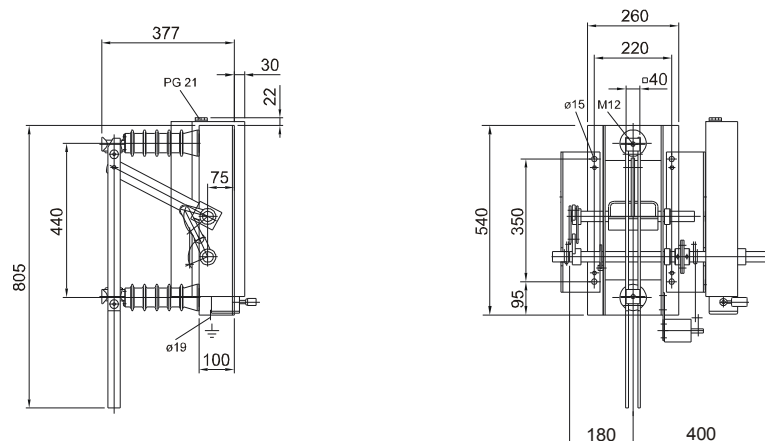


Single-pole indoor disconnector L31/059871

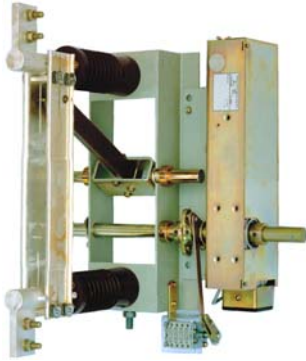


- with motor operated drive UM 10
- with signalling contact (4-pole)

rated voltage	U_r 15 kV
rated current	I_r 630 A
rated insulation level	U_{Nm} 17,5 kV
rated impulse voltage	U_{Ni} 125 kV
short-duration power-frequency test level	U_a 50 kV
rated frequency	f_r 16 2/3 Hz
rated short-time withstand current	I_k 20 kA
rated duration of short-circuit current	t_k 1 s
rated peak withstand current	I_p 50 kA
weight	45 kg

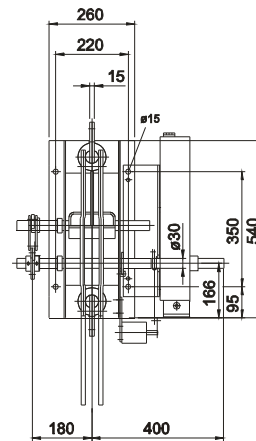
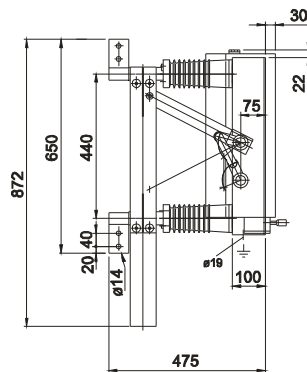


Single-pole indoor disconnecter L31/059872

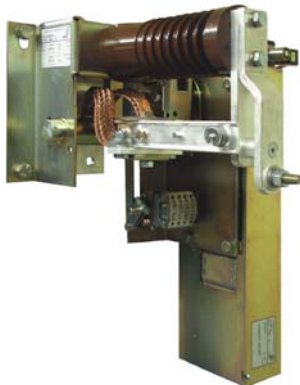


- with motor operated drive UM 10
- with signalling contact (4-pole)

rated voltage	U_r	15 kV
rated current	I_r	1600 A
rated insulation level	U_{Nm}	17,5 kV
rated impulse voltage	U_{Ni}	125 kV
short-duration power-frequency test level	U_a	50 kV
rated frequency	f_r	16 2/3 Hz
rated short-time withstand current	I_k	31,5 kA
rated duration of short-circuit current	t_k	1 s
rated peak withstand current	I_p	80 kA
weight		55 kg

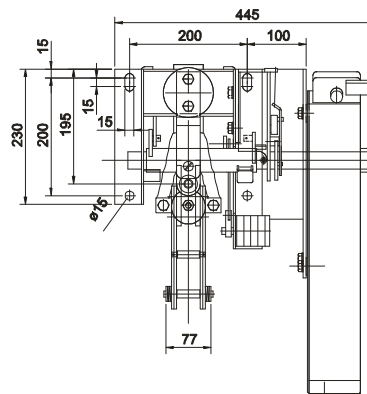
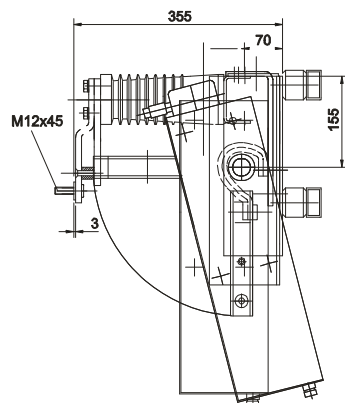


Single-pole indoor earthing switch L31/090323



- with motor operated drive UM 10
- with signalling contact (4-pole)

rated voltage	U_r	15 kV
rated insulation level	U_{Nm}	17,5 kV
rated impulse voltage	U_{Ni}	125 kV
short-duration power-frequency test level	U_a	50 kV
rated frequency	f_r	16 2/3 Hz
rated short-time withstand current	I_k	31,5 kA
rated duration of short-circuit current	t_k	1 s
rated peak withstand current	I_p	80 kA
rated short-circuit making current	I_{ma}	80 kA
weight		35 kg

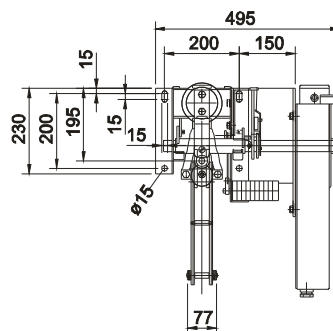
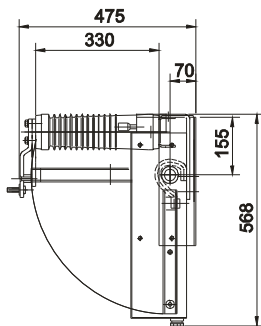


Single-pole indoor earthing switch L31/093302



- with motor operated drive UM 10 (60 V DC) on the right side
- with signalling contact (4-pole)

rated voltage	U_r	27,5 kV
rated insulation level	U_{Nm}	29 kV
rated impulse voltage	U_{Ni}	185 kV
short-duration power-frequency test level	U_a	80 kV
rated frequency	f_r	50 Hz
rated short-time withstand current	I_k	31,5 kA
rated duration of short-circuit current	t_k	1 s
rated peak withstand current	I_p	80 kA
weight		35 kg



Single-pole indoor fuse bases



- for high-voltage high-breaking-capacity fuses

rated voltage	U_r	27,5 kV
rated current	I_r	200 A
rated insulation level	U_{Nm}	29 kV
rated impulse voltage	U_{Ni}	185 kV
short-duration power-frequency test level	U_a	80 kV
rated frequency	f_r	50 Hz
weight		8 kg

Stroke limitation pads, 7 t or 10 t



Because of frequent short circuits in contact-line networks, windings in main transforming stations are during operation exposed to extraordinary mechanical stress. That stress is taken into account even when transformers are being built by using extremely strong clamping structures and high winding pressures.

Since, however, windings will, despite preparatory treatment, set during isolation through compression of hollow spaces, the arrangement for the past few years has been that all new transformers will, after an operating time of approximately 3 hours, be re-compressed at the manufacturer's plant. This re-compressing has proved a success but causes high cost (transformer installation and removal, transport, wage costs or replacement transformer).

Therefore was developed a stroke-limitation pad (the "HB pad") which in future will render redundant the re-compressing of transformers equipped with such pads. The HB pad will be installed instead of the clamping screws which have until now been customary. The task of the HB pad is to transfer the winding pressure from the clamping bolt via the winding's thrust collar to the winding and to compensate for the shortening of the winding which is caused by setting and high-impact short circuits, and thus to maintain the length of the winding.