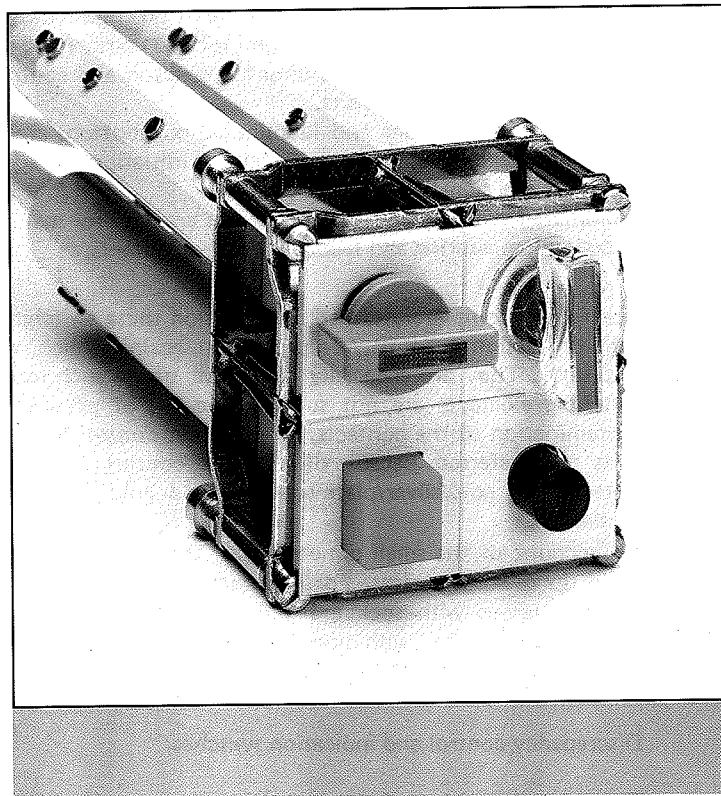


Switches and Pushbuttons for Auxiliary Circuits



SQS 1800 - SQS 4800
QS 1820 - QS 4820
LT 1840 - LT 4840
LS 1850 - LS 4850

Switches and Pushbuttons for Auxiliary Circuits

Application:

The discrepancy control and indication switches, discrepancy indication switches, toggle switches, illuminated switches and illuminated pushbuttons have especially small dimensions and are suited for installation into mosaic boards or mounting in front plates of switching panels and switching consoles having a thickness of 1,5 mm to 5 mm. They are suitable for plants with voltages up to 110 V and conform with the German rules for switching units VDE 0660 with the electrical distances according to VDE 0110 group C. The discrepancy control and indication switches are used for operation and position indication of isolating switches and circuit breakers with motor and compressed air drive. Discrepancy indication switches are used for position and control indication of hand-operated switching units.

The toggle pushbuttons and illuminated pushbuttons are suited for transient commands, i.e. control of relays, initiation of automatic control processes and signalling.

Illuminated switches and toggle switches are used for making and breaking of control, measuring and feedback control systems.

Construction:

Due to the completely closed construction these switching units comply with protection type IP 42 (protection against touch, solid substances, humidity). They are especially suited for use in such rooms where open switching elements are not suitable because of possible oxidation and contamination of the contacts. In electronic control fields these switching units are preferred because of the low contact resistance. As contact materials an gold/silver/platinum-alloy and gold-plated berylliumbronze are used.

On account of the small dimensions of the switches the contact pins are build up as solder joints. For illumination the switches and pushbuttons filament lamps with socket T 5.5 are used. With the pushbuttons and pushbutton-switches with two lamps T 4.6-sockets are used. It has to be noted that only one of the two lamps may be energized at the same time.

Function:

Discrepancy control and indication switches:

The desired position of the isolating switch or circuit breaker is adjusted by turning the knob 90° without initiating an actual command (preparation for switching). As the switch position of the discrepancy control and indication switch is now no longer corresponding to that of the isolating switch or circuit breaker, a flashing light now appears instead of the steady light.

By pressing the knob towards the switchboard and turning it by 30° the switch is brought into control position and the control command is given. The knob automatically resets into the acknowledgement position (90° position).

Discrepancy indication switches:

The function of the discrepancy indication switch corresponds to the acknowledgement part of the above described discrepancy control and indication switch (without control function).

Switches and Pushbuttons for Auxiliary Circuits

General data:

protection type DIN 40050
 rated voltage VDE 0660 T.2
 insulation group
 mechanical service life
 mounting position
 weight
 lamp rated voltages and capacities

IP 42
 250 V a.c./250 V d.c.
 C (VDE 0110)
 10⁵ operations
 optional
 appr. 100 g

socket	24 V	30 V	48 V	60 V	70 V
T 4.6	—	1.2 W	0,96 W	—	—
T 5.5	1.2 W	1.2 W	1.2 W	1.2 W	1.4 W

Switching capacity:

rated current permanent current admissible A	type	voltage rating V	nominal breaking capacity mA direct current (non-inductive)	nominal breaking capacity mA direct current L:R=10ms	nominal breaking capacity mA alternat. current cos. φ 0,4	mechan service life
1,5	all types	110	300	80	150	10 ⁵
	SQS	60	400	120	300	
	QS	42	500	180	400	
	SS					
	ST	24	600	240	500	
LS						
LT						

Connection:

The switches are normally equipped with a multicore plastic-cable (length 2,20 m) and a multipole plug for connection to a terminal block according to our list no. 77-09-04 "Cables with Connector Distributing Boxes". For other types of connection the switches can be supplied with cable but without plug.

Wire colours:

2 - 8 core-cable

a = white e = grey
 b = brown f = pink
 c = green g = blue
 d = yellow h = red

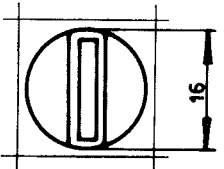
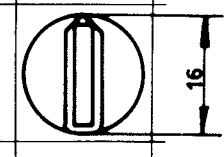
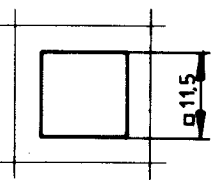
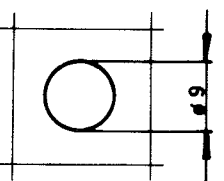
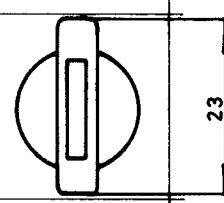
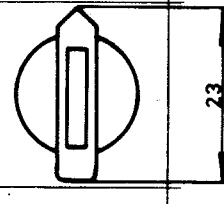
10 - core-cable

a = white f = pink
 b = brown g = blue
 c = green h = red
 d = yellow i = black
 e = grey k = violet

Toggles:

All switches and push-buttons can be equipped with illuminated or not illuminated toggles or buttons. A survey on the different types available is given on page 4. With illuminated switches and pushbuttons only toggles or buttons with clear core are to be used. As the companion dimensions are the same with all toggles and buttons it is possible to use them also with equipment for other mosaic sizes.

**Switches and Pushbuttons
for Auxiliary Circuits**

Knob	Type of switch	Core	Cap	Order No.
	Discr. contr. ind. switch	clear	black	92-01-001
	Discr. ind. switch	clear white white	grey black grey	92-01-021 92-01-002 92-01-022
	Toggle pushbutton	clear	grey	92-01-023
	Toggle switch SS 1860 ST 1830	clear white white	black grey black	92-01-003 92-01-024 92-01-004
	illu. pushbutton Illu. switch LT 1840, LS 1850	clear clear clear clear	white transl. red transl. green transl. yellow transl.	92-02-021 92-02-022 92-02-023 92-02-024
	Illu. pushbutton Illu. switch LT 1870, LS 1880	clear	clear	92-02-025
	Illu. pushbutton Illu. switch LT 1840, LS 1850 LT 2440, LS 2450 LT 3640, LS 3650 LT 4840, LS 4850	clear clear clear clear clear	white transl. red transl. green transl. yellow transl. clear	92-02-001 92-02-002 92-02-003 92-02-004 92-02-005
	Illu. pushbutton Illu. switch LT 1870, LS 1880	clear clear	white transl. clear	92-02-006 92-02-007
	Discr. contr. ind. switch	clear	grey	92-01-031
	Discr. ind. switch SQS 2400 3600 4800	clear	black	92-01-011
	QS 2420 3620 4820	white white	grey black	92-01-032 92-01-012
	Toggle pushbutton	clear	grey	92-01-033
	Toggle switch ST 2430 3630 4830	clear	black	92-01-013
	SS 2460 3660 4860	white white	grey black	92-01-034 92-01-014
	Illu. pushbutton Illu. switch LT 2440, LS 2450 LT 3640, LS 3650 LT 4840, LS 4850	clear clear clear clear	white transl. red transl. green transl. yellow transl.	92-02-011 92-02-012 92-02-013 92-02-014
	short type	clear clear clear clear	white transl. red transl. green transl. yellow transl.	92-02-016 92-02-017 92-02-018 92-02-019

Switches and Pushbuttons for Auxiliary Circuits

discrepancy control and indication switches

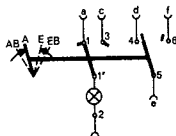


diagram
1800 - 01
2400 - 01
3600 - 01
4800 - 01

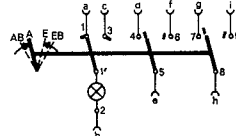


diagram
1800 - 02
2400 - 02
3600 - 02
4800 - 02

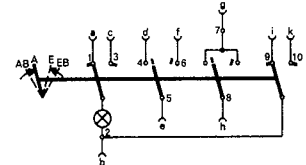


diagram
1800 - 03
2400 - 03
3600 - 03
4800 - 03

1' may be taken out separately

discrepancy indication switches

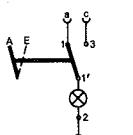


diagram
1820 - 01
2420 - 01
3620 - 01
4820 - 01

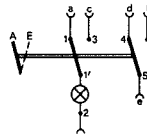


diagram
1820 - 02
2420 - 02
3620 - 02
4820 - 02

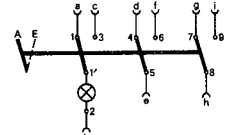


diagram
1820 - 03
2420 - 03
3620 - 03
4820 - 03

1' may be taken out separately

toggle pushbuttons

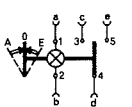


diagram
1830 - 01
2430 - 01
3630 - 01
4830 - 01

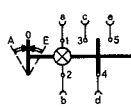


diagram
1830 - 02
2430 - 02
3630 - 02
4830 - 02

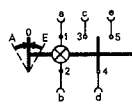


diagram
1830 - 03
2430 - 03
3630 - 03
4830 - 03

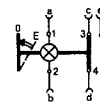


diagram
1830 - 11
2430 - 11
3630 - 11
4830 - 11

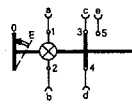


diagram
1830 - 12
2430 - 12
3630 - 12
4830 - 12

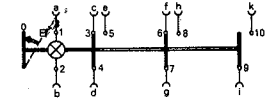


diagram
1830 - 13
2430 - 13
3630 - 13
4830 - 13

toggle switches

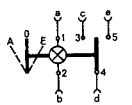


diagram
1860 - 01
2460 - 01
3660 - 01
4860 - 01

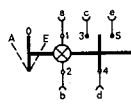


diagram
1860 - 02
2460 - 02
3660 - 02
4860 - 02

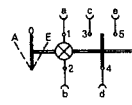


diagram
1860 - 03
2460 - 03
3660 - 03
4860 - 03

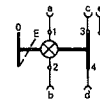


diagram
1860 - 11
2460 - 11
3660 - 11
4860 - 11

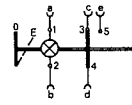


diagram
1860 - 12
2460 - 12
3660 - 12
4860 - 12

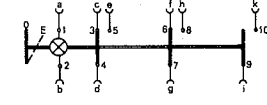


diagram
1860 - 13
2460 - 13
3660 - 13
4860 - 13

illuminated pushbuttons

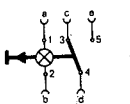


diagram
1840 - 01
2440 - 01
3640 - 01
4840 - 01

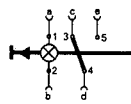


diagram
1840 - 02
2440 - 02
3640 - 02
4840 - 02

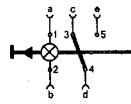


diagram
1840 - 03
2440 - 03
3640 - 03
4840 - 03

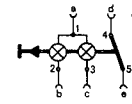


diagram
1870 - 01
2470 - 01
3670 - 01
4870 - 01

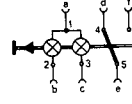


diagram
1870 - 02
2470 - 02
3670 - 02
4870 - 02

illuminated switches

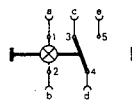


diagram
1850 - 01
2450 - 01
3650 - 01
4850 - 01

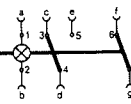


diagram
1850 - 02
2450 - 02
3650 - 02
4850 - 02

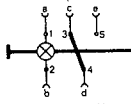


diagram
1850 - 03
2450 - 03
3650 - 03
4850 - 03

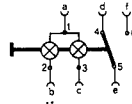


diagram
1880 - 01
2480 - 01
3680 - 01
4880 - 01

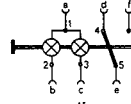


diagram
1880 - 02
2480 - 02
3680 - 02
4880 - 02

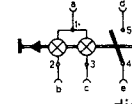


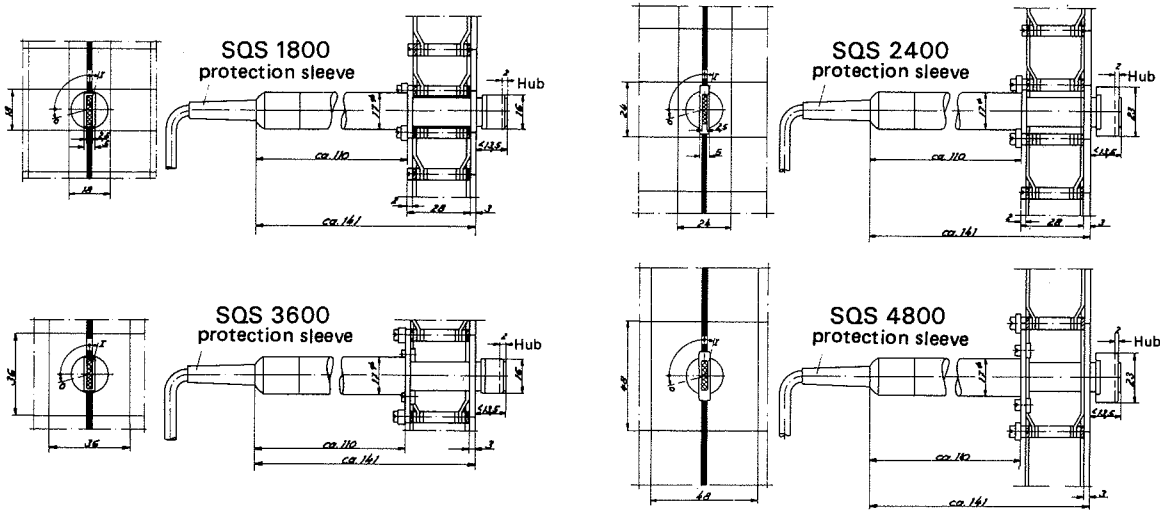
diagram
1880 - 13
2480 - 13
3680 - 13
4880 - 13

illuminated pushbuttons and switches with 2 lamps cannot be supplied for front plate mounting.

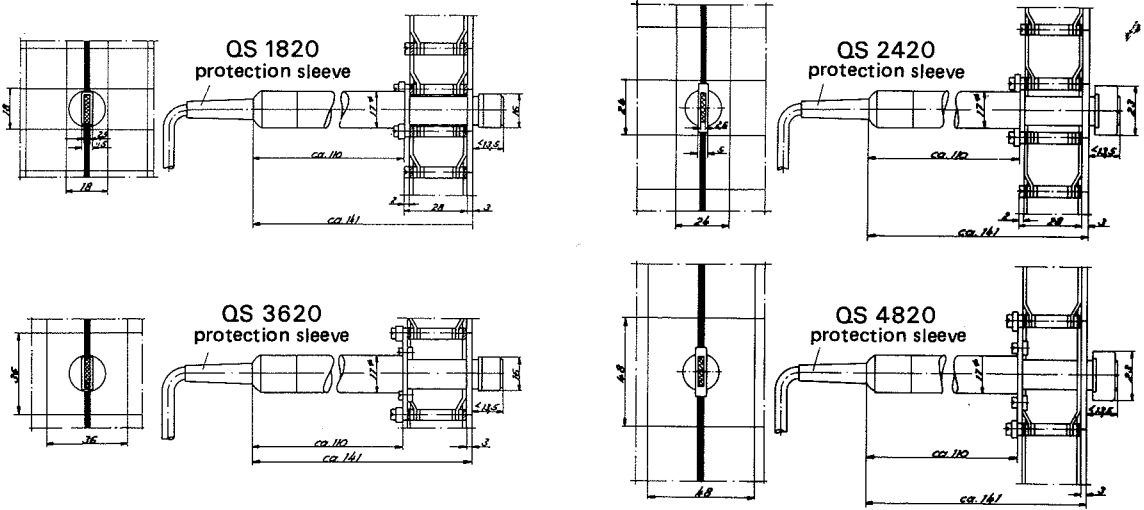
Other diagrams on demand

Switches and Pushbuttons for Auxiliary Circuits

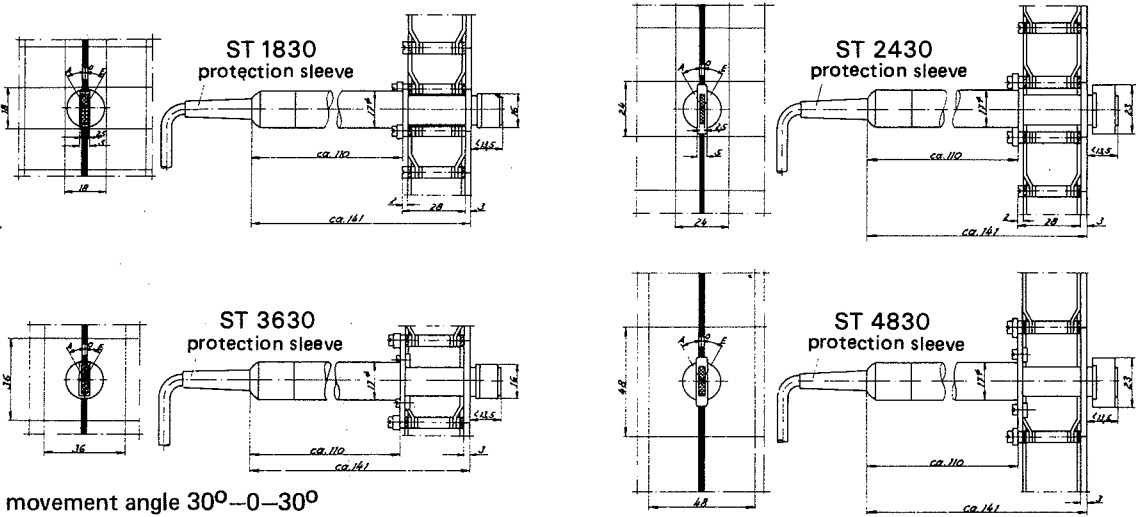
discrepancy control and indication switches



discrepancy indication switches



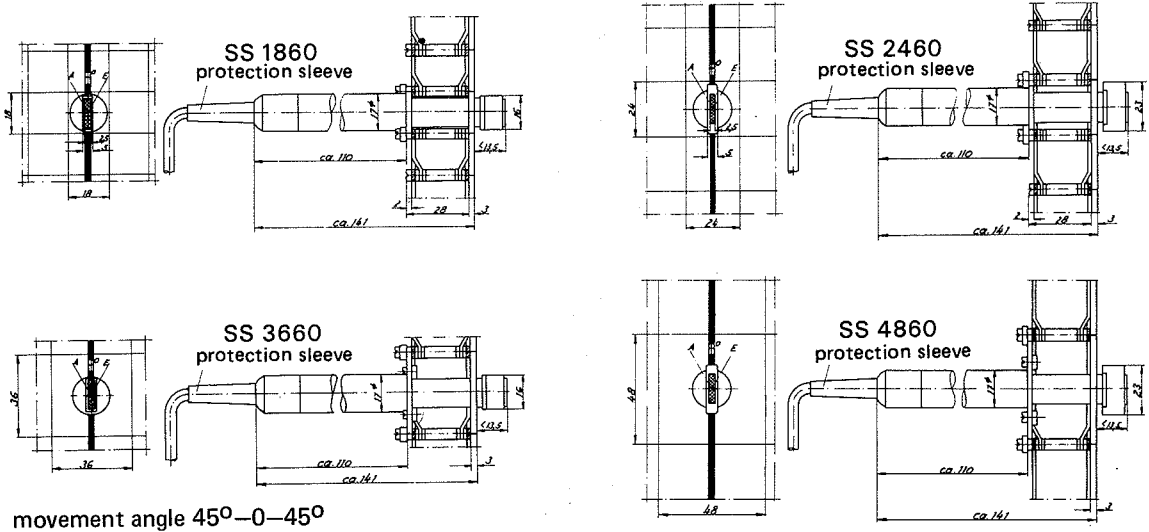
toggle pushbuttons



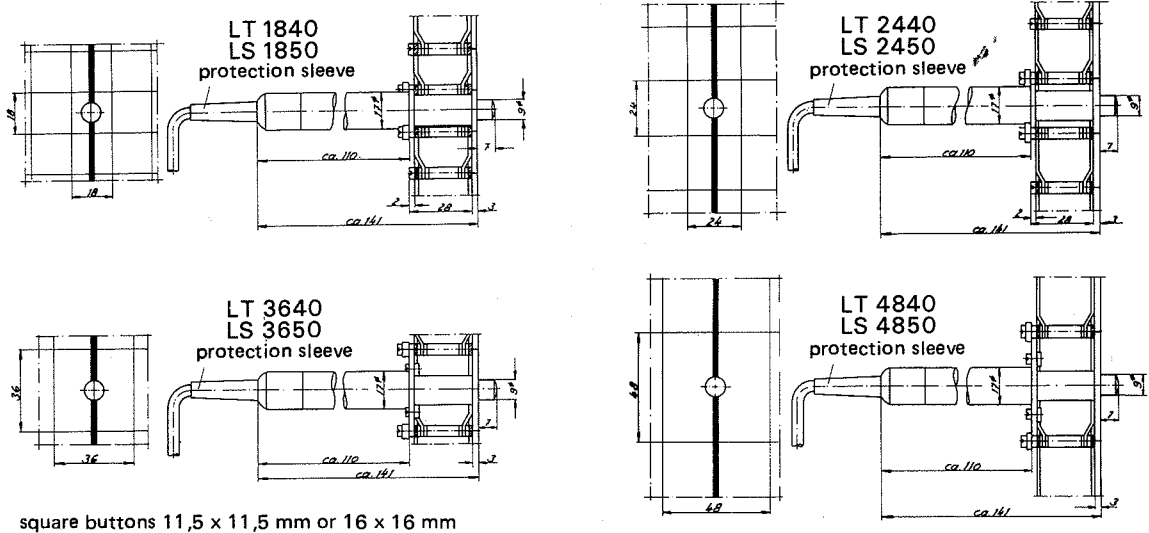
movement angle 30°-0-30°

Switches and Pushbuttons for Auxiliary Circuits

toggle switches



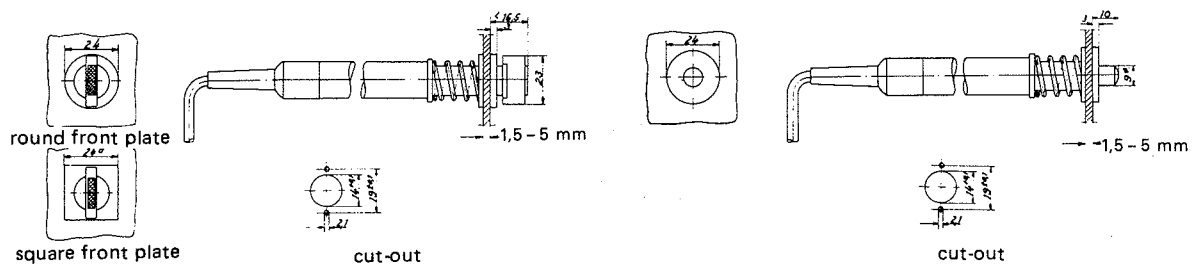
illuminated pushbuttons and switches



discrepancy control and indication switches, discrepancy indication and toggle switches, toggle pushbuttons, illuminated pushbuttons and switches for panel mounting

discrepancy control, discrepancy indication,
toggle switches, toggle pushbuttons

illuminated pushbuttons and
illuminated switches



The units for panel mounting can only be supplied with front plates 24 mm \varnothing or 24 x 24 mm.
For identification the types will have the following end numbers:

- a) for round front plate: (e.g. SQS 2401-02)
- b) for square front plate: (e.g. SQS 2402-02)