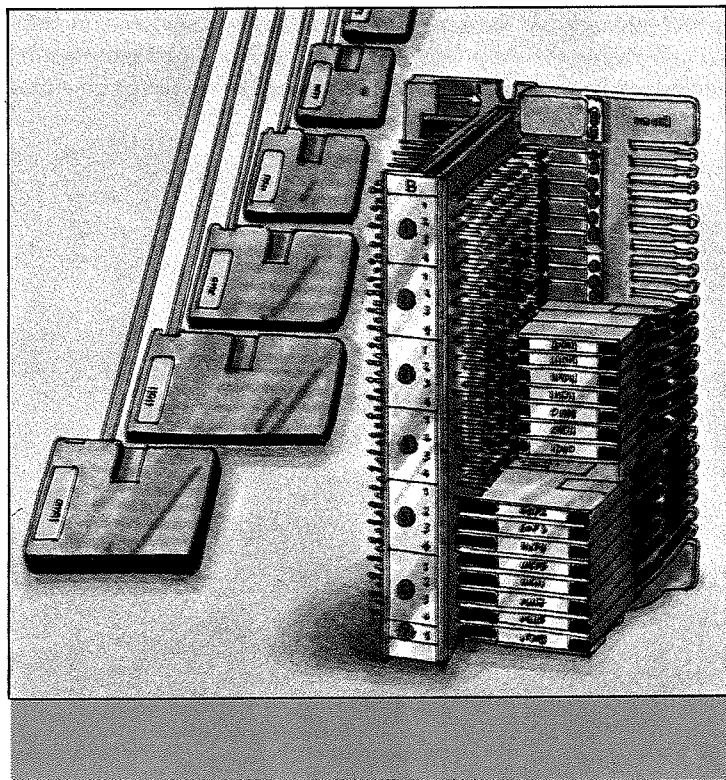


Cables with Connector Distributing Boxes

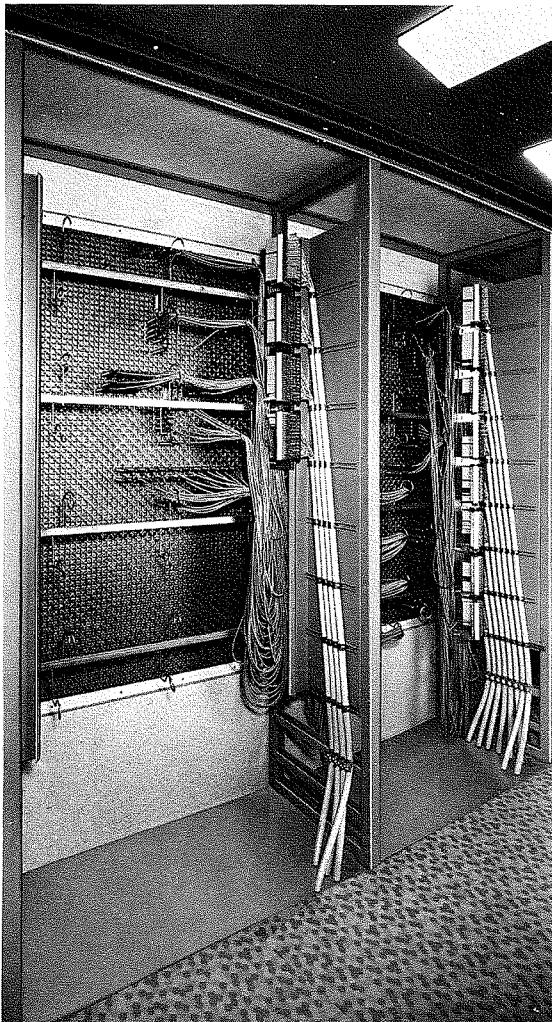


**Cables with Connector
Distributing Boxes**

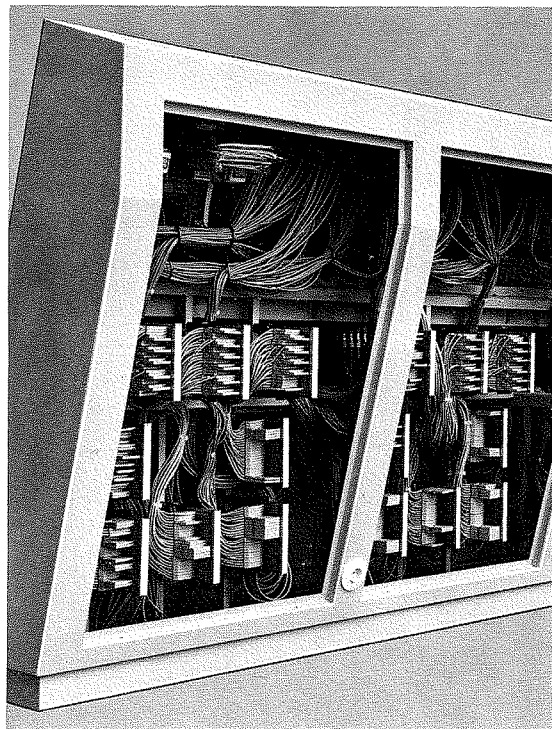
Application

Application:

On mosaic type control and remote indication panels, and also on control consoles with mosaic panels, the wiring is of plug-in design in order to permit simple changes in the mimic diagram area, even for active components. It is for this reason that the control and remote indication equipment is fitted with multiwire individual cables and multi-pole connectors which are fitted onto solder/plug-in or plug-in/plug-in distributors. Connection of the multi-wire cables and the associated connectors to the active components, such as control discrepancy switches, acknowledgement switches, push-button switches, lamp sockets, ect., is accomplished at the manufacturing plant, as is the necessary testing, meaning that the connecting and testing operations generally required during installation can be eliminated.



Rear view of a mosaic
type control panel with
plug-in wiring



Rear view of a block
control console with
plug-in wiring

Cables with Connector Distributing Boxes

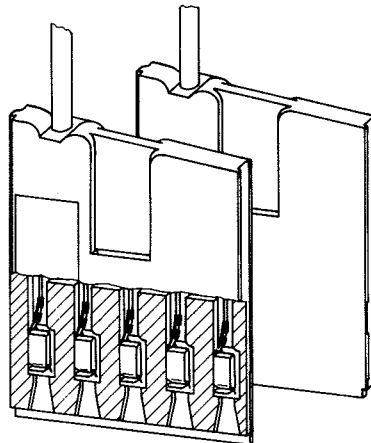
Cables with Connector

Overall Design:

The individual cables are designed similarly to DIN 47412, with PVC wire insulation and a PVC outer jacket, grey in colour, similar to RAL 7000. The cables are available with 2, 3, 4, 5, 6, 7, 8, 10, 16 and 20 wires.

The connector on the cable end consists of the 2 plastic housing elements and the "spring terminals" in accordance with DIN 46238. The use of these spring terminals creates non-soldered connections which, unlike the previously customary flat connectors, permit frequent connection and disconnection without the contact pressure being reduced. These spring terminals connected to the individual wires are inserted into the connector housing elements which are then ultrasonically welded. The sides of the connector housings are designed as guide grooves and/or guide tongues, meaning that connection is only possible in one direction in conjunction with the connector guide plate on the distributing box. The same applies when inserting several connectors on one level of the distributing box.

In order to mark the connectors, small nameplates are stuck or slid into the recess provided. Special pliers are available for plugging in and withdrawing the multi-pole connectors.



Distributing Boxes

General Data:

The solder/solder, solder/plug-in, plug-in/plug-in, solder/termi-point, plug-in/termi-point, maxi-termi-point/plug-in, maxi-termi-point/maxi-termi-point and distributing boxes comply in design and dimensions with DIN 41499, and are fitted with 25 pins per row.

The pins are mounted in high-quality insulating material, meaning that good insulating properties are obtained. The plug-in side is flattened so as to facilitate the fitting of the multi-pole connectors. Pin dimensions: 0.8 x 2.8 mm.

In the case of solder/plug-in distributors, the connecting pins on one side take the form of tin-plated soldering ends, whereas the connecting pins on the other side take the form of plug-in ends (plug-in pins). In the case of plug-in/plug-in distributors, the connecting pins on both sides take the form of plug-in ends (plug-in pins). The connecting posts on the termi-point side of solder or plug-in/termi-point distributors are of size 0.8 mm x 1.6 mm (standard termi-point or wire-wrap) or 0.8 x 2.4 mm (maxi-termi-point).

Cables with Connector Distributing Boxes

Technical Data

Cable:

Cable structure	corresponding to LIYY in accordance with VDE 0814 and 0817
Bundle length (other lengths upon request)	2.20 m
Max. outer diameter	approx 7.6 mm
Outer jacket	PVC, colour grey, similar to RAL 7000
Conductor	Cu wire, bare, twisted, $18 \times 0.1 \cong 0.14 \text{ mm}^2$
Conductor insulation	coloured PVC, colour sequence in accordance with DIN 47100, but without colour repetition

Connector:

Housing	colour grey, similar to RAL 7035
Mechanical values: (per spring terminal)	
Contact force	600 – 700 p
Withdrawal force	$550 \pm 100 \text{ p}$
Plug-in force	$1000 \pm 300 \text{ p}$
No. of connecting operations	at least 500
Prong thickness for individual plug-in connectors	0.8 mm
Surface	electrotinned

Electrical Values:

Volume resistivity	$\cong 100 \text{ m}\Omega$
Series voltage acc. to VDE 0110	110 V d.c. / 125 V a.c.
Permissible operating current at 25° C ambiente temperature	1,5 A
Test voltage	2000 V
Insulation resistance following 4-day storage at 23 ° C and 83 % relative humidity	$\cong 10^3 \text{ M}\Omega$
Capacitance of neighbouring plug-in connectors	$\cong 0,75 \text{ pF}$

**Cables with Connector
Distributing Boxes**

Technical Data

Distributing Boxes

Mechanical Values

Inscription frame	movable or fixed
No. of pins per row	25
Mounting	2 slots, 170 mm spacing in accordance with DIN 41499
Carrier	Makrolon GV
Contact pin material	brass
Contact pin	0.8 x 2.8 mm for flat connectors and spring terminals in accordance with DIN 46247 and DIN 46238
Termi-point on or wire-wrap pin	0.8 x 1.6 mm, diagonal dimension 1.5 – 1.8 mm in accordance with DIN 41611, Part 2
Maxi-termipoint	0.8 x 2.4 mm in accordance with DIN 41611, Part 4
Surface	soldered and plug-in distributors: electroplated, Ni 2.5µm + Sn 2.5µm termi-point distributors: electroplated, Pb 2.5µm + Sn 2.5µm
Soldering tabs	hot-dip tinned

Electrical Values:

Series voltage according to VDE 0110, Group A	300 V d.c. / 250 V
Test voltage	2000 V / 50 Hz
Insulation resistance after 4-day storage at 23 °C and 83 % relative humidity	depending on type, $\geq 10^4$ MΩ or $\geq 10^5$ MΩ

**Cables with Connector
Distributing Boxes**

Cables with Connector 2-, 3-, 4-, 5- and 6-pole

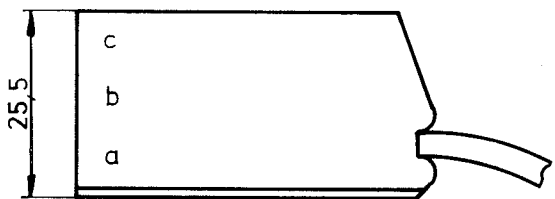
Ordering No.

Core colours:



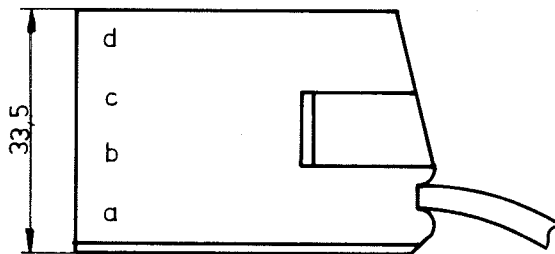
2-pole 81-31-031

b = brown
a = white



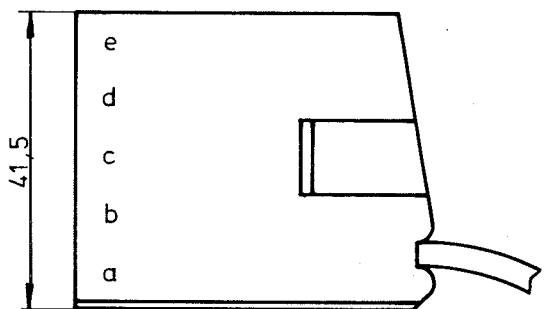
3-pole 81-31-032

c = green
b = brown
a = white



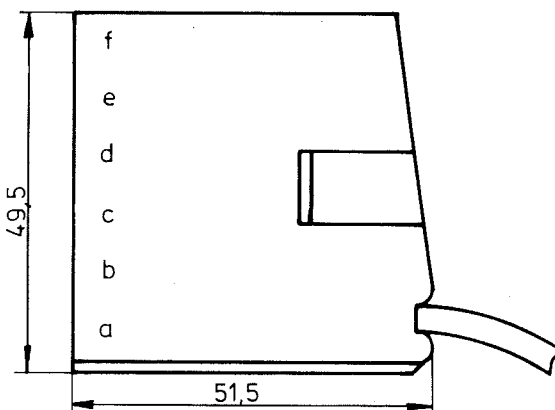
4-pole 81-31-033

d = yellow
c = green
b = brown
a = white



5-pole 81-31-034

e = grey
d = yellow
c = green
b = brown
a = white

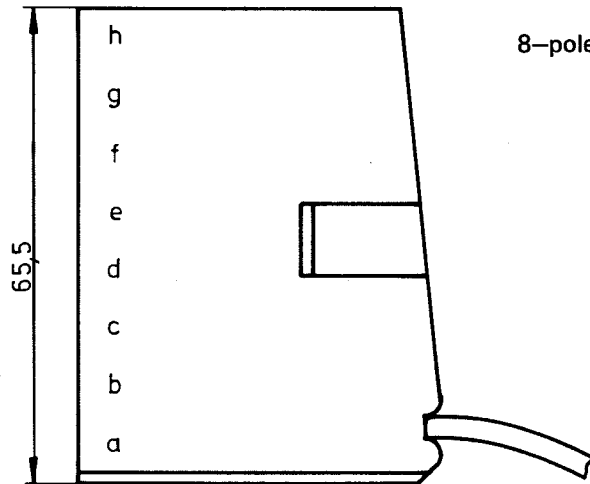


6-pole 81-31-035

f = pink
e = grey
d = yellow
c = green
b = brown
a = white

**Cables with Connector
Distributing Boxes**

Cables with Connector 8-, 10- und 16-pole

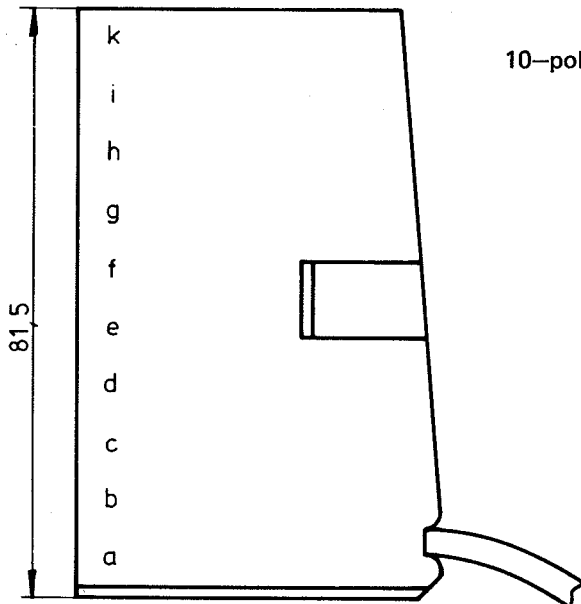


8-pole

Ordering No.
81-31-036

Core colours:

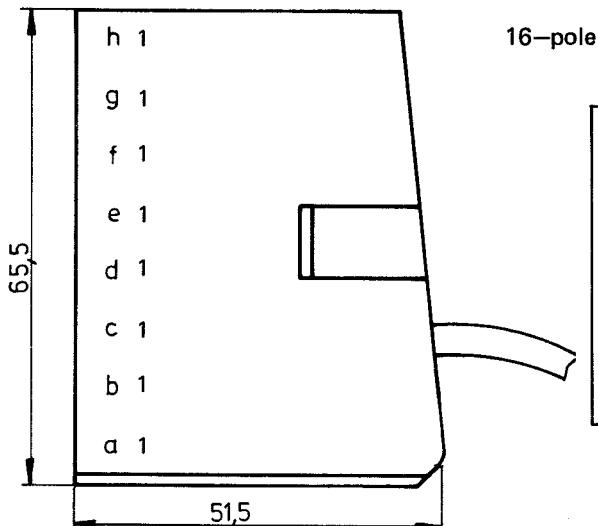
- h = red
- g = blue
- f = pink
- e = grey
- d = yellow
- c = green
- b = brown
- a = white



10-pole

81-31-037

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



16-pole

81-31-051

81-31-038

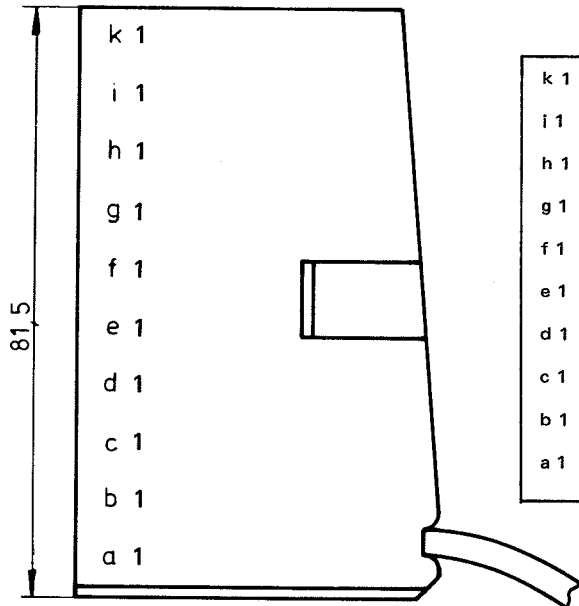
h1	red	Central section black	h2	yellow-brown	Central section grey	h2	yellow-brown	h1	red
g1	blue		g2	white-yellow		g2	white-yellow	g1	blue
f1	pink		f2	brown-green		f2	brown-green	f1	pink
e1	grey		e2	white-green		e2	white-green	e1	grey
d1	yellow		d2	red-blue		d2	red-blue	d1	yellow
c1	green		c2	grey-pink		c2	grey-pink	c1	green
b1	brown		b2	violet		b2	violet	b1	brown
a1	white		a2	black		a2	black	a1	white

View of jacks
(Part 81-31-038 illustrated)

**Cables with Connector
Distributing Boxes**

Cables with connector 20-pole

Ordering No.



81-31-053

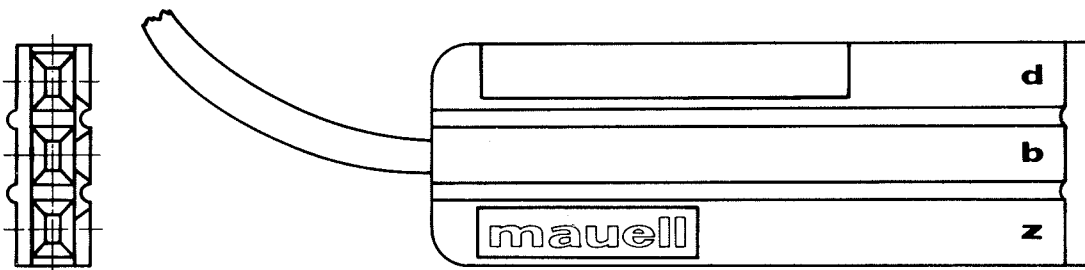
81-31-052

k 1 violet	Central section black	k 2 pink-brown	Central section grey	1 violet
i 1 black		i 2 white-pink		i 1 black
h 1 red		h 2 grey-brown		h 1 red
g 1 blue		g 2 white-grey		g 1 blue
f 1 pink		f 2 yellow-brown		f 1 pink
e 1 grey		e 2 white-yellow		e 1 grey
d 1 yellow		d 2 brown-green		d 1 yellow
c 1 green		c 2 white-green		c 1 green
b 1 brown		b 2 red-blue		b 1 brown
a 1 white		a 2 grey-pink		a 1 white

view of jacks
(Part 81-31-052 illustrated)

Cables with Special Connector

Special connector for direct connection to termi-point posts of 48-pole male multi-point connectors, Type F, acc. to DIN 41612, for connection to the associated control and remote indication equipment.



Configuration:

Ordering No.

Core Colours:

Cable, 2-wire with connector, 3-pole

81-31-039

b = brown
z = white

Cable, 3-wire with connector, 3-pole

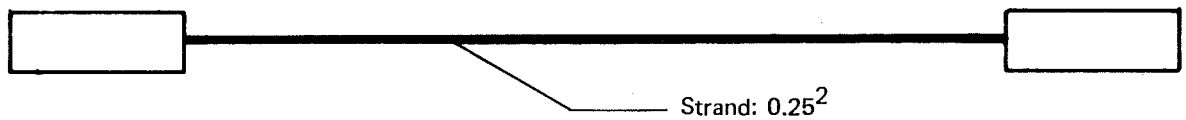
81-31-040

d = green
b = brown
z = white

**Cables with Connector
Distributing Boxes**

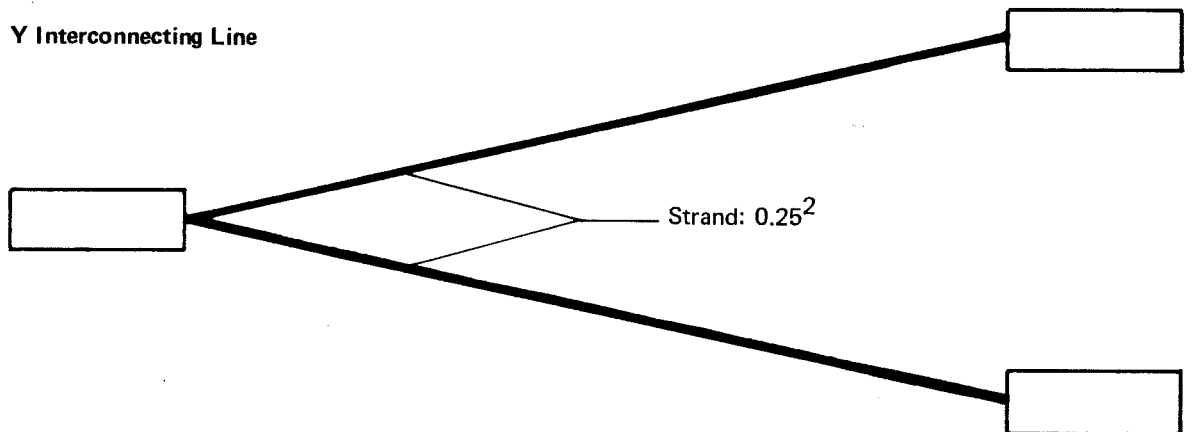
Interconnecting Lines with Connector

Single-pole interconnecting line



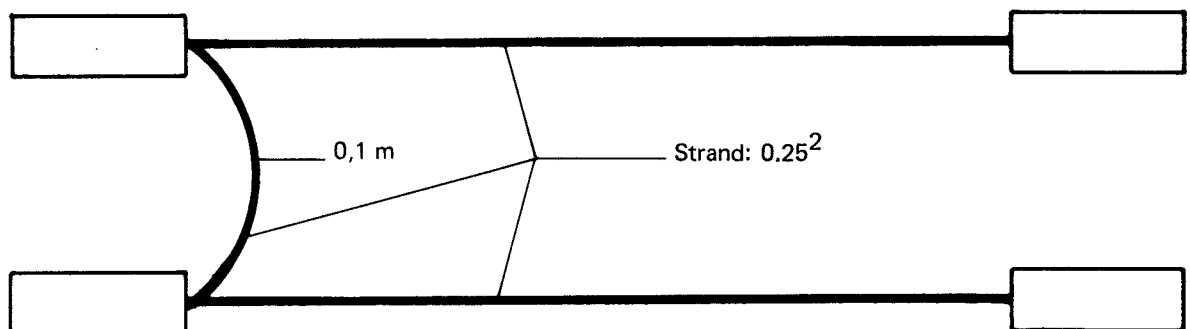
Ordering No.	Lenght	Core colours:
81-31-041	0.5 m	white
81-31-042	1.0 m	grey
81-31-043	2.0 m	green

Y Interconnecting Line



Ordering No.	Lenght	Core colours:
81-31-044	0.5 m	brown
81-31-045	1.0 m	yellow
81-31-046	2.0 m	black

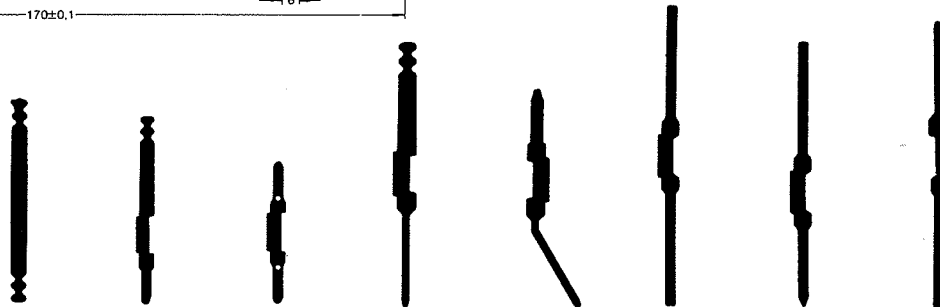
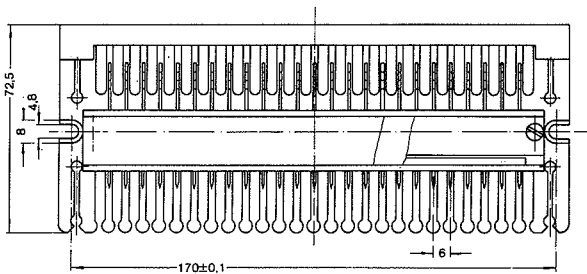
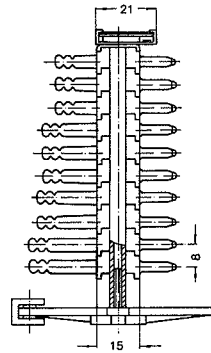
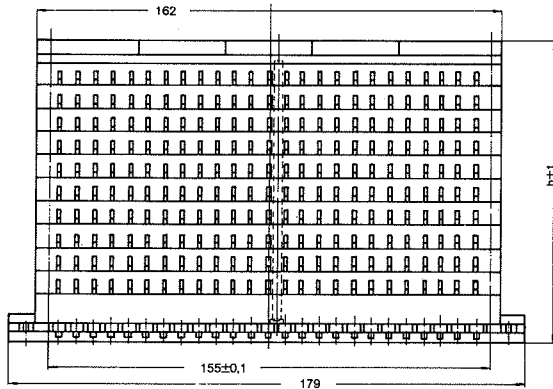
YY Interconnecting Line



Ordering No.	Lenght	Core colours:
81-31-047	1.0 m	pink
81-31-048	2.0 m	violet

Cables with Connector Distributing Boxes

Distributing Boxes, 25 Pins per Row, Fixed Inscription Frame

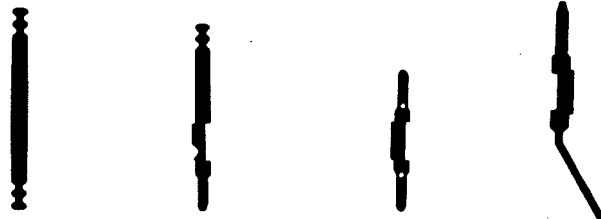
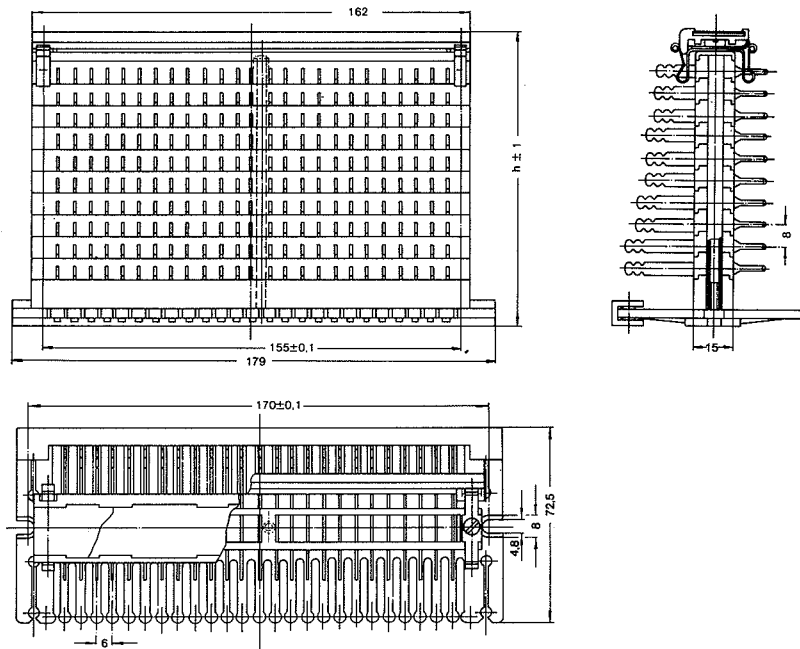


R	No. of Pins	Solder/Solder		Solder/Solder (cord guiding plate, 2 retaining strips)	Solder/Plug (cord guiding plate, 1 retaining strip)	Plug/Plug (cord guiding plate, 2 retaining strips)	Solder/Standard Termini-Point (cord guiding plate, 2 retaining strips)	Plug/Standard Termini-Point Plug/wrap (cord guiding plate, 1 retaining strip)	Maxi-Termini-Point/Maxi-Termini-Point (cord guiding plate, 2 retaining strips)	Maxi-Termini-Point/Plug (cord guiding plate, 2 retaining strips)	Standard-Termini-Point/Maxi-Termini-Point (cord guiding plate, 2 retaining strips)
		h mm	h mm								
		h mm	h mm	Ordering No.	Ordering No.	Ordering No.	Ordering No.	Ordering No.	Ordering No.	Ordering No.	Ordering No.
02	50	41	40								
03	75	49	48	81-31-006	81-31-001						
04	100	57	56	81-31-007	81-31-002						
05	125	65	64		81-31-028						
06	150	73	72	81-31-008	81-31-003	81-31-015					
07	175	81	80								
08	200	89	88	81-31-009	81-31-004	81-31-016	81-31-014	81-31-012	81-31-011	81-31-019	81-31-060
09	225	97	96				81-31-013				
10	250	105	104	81-31-010	81-31-005	81-31-017			81-31-018	81-31-020	

* Accessory: connector guiding plate

Cables with Connector Distributing Boxes

Distributing Boxes, 25 Pins per Row, Movable Inscription Frame

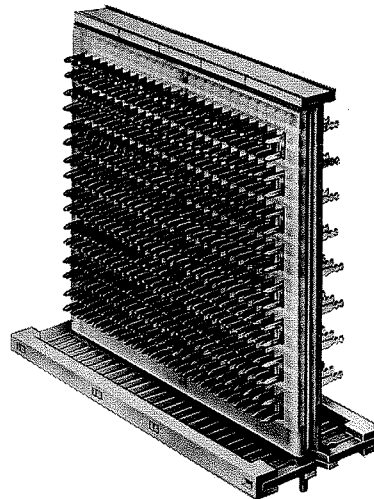
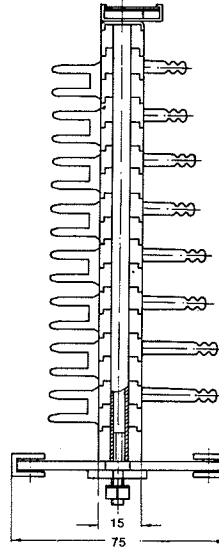
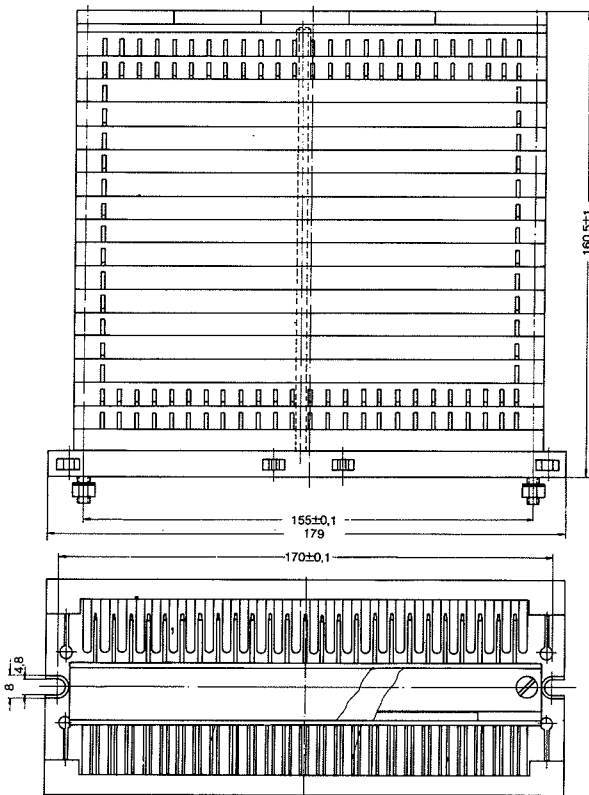


R	No. of Pins	Solder/Solder	all other	Solder/Solder (with cord guide plate and 2 retainer strips)	Solder/Plug (with cord guide plate and 1 retainer strip)	Plug/Plug (with cord guide plate and 2 retainer strips)	Plug/Termi-P. Plug/Wrap (with cord guide plate and 1 retainer strip)
		h mm	h mm	Ordering No.	Ordering No.	Ordering No.	Ordering No.
02	50	49,5	44				
03	75	57,5	52				
04	100	65,5	60				
05	125	73,5	68				
06	150	81,5	76				
07	175	89,5	84				
08	200	97,5	92				
09	225	106,5	100				
10	250	113,5	108				

* Accessory: connector guiding plate

**Cables with Connector
Distributing Boxes**

Distributing Boxes, 25 Pins per Row, Fixed Inscription Frame



1 x Solder – 2 x Plug
(with cord guiding plate
and 2 retaining strips)

No. of Rows	No. of Pins	" h "	Ordering No.
08	200	160,5 mm	

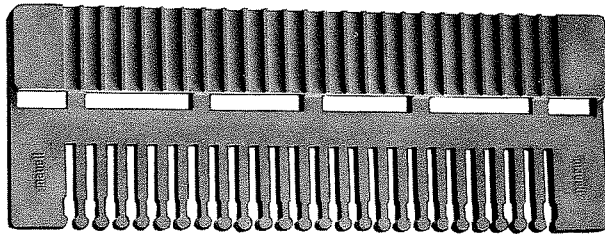
**Cables with Connector
Distributing Boxes**

Accessories:

Ordering No.

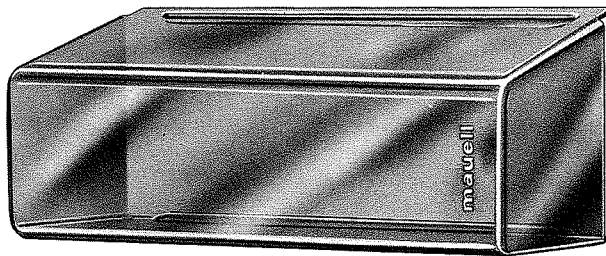
Connector guiding plate for cables with upto 16 cores
Connector guiding plate for 12 20-core cables and 1 10-core cable

81-70-001
81-70-103



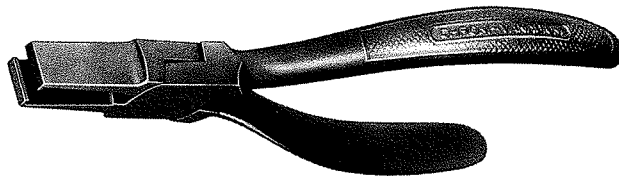
Protective cover for soldered distributing boxes
(transparent)

81-31-050



Connector pliers, SZ 01 - 005

81-70-032



Tapping connector
(for distributing boxes with
movable inscription frame)

Rows

Ordering No.



02
03
04
05
06
07
08