



Heat shrink joints for communication cables



### Application

Joints of type ZR and ZM are intended for joining grease filled/unfilled plastic communication cables. Type ZR is recommended for the first assembly of heat shrink joints and type ZM (sleeve) for joint repairs. Both joints ZR and ZM are characterized for quick and easy assembly.

### Marking

Identification marking consists of a letter symbol ZR or ZM preceded by a number indicating the size of joint (Tab. 2).

### Construction and components of heat shrink joint

Basic joint kit components:

- heat shrinkable tube (joint ZR), or heat shrink wrap around sleeve with a stainless steel channel (joint ZM) which forms a joint sheath
- reinforced electrical insulation fiber board (one-side Al laminated)
- desiccant

-installation aid components: aloxite emery tape, self-adhesive aluminum foil and a cleaning tissue (amount of desiccant and aid components depends on the applicable size of the particular joint)

Based on the customer's request we supply the following material to supplement the basic kit:

- connecting screen (drain) wire, in case of screen continuity not being secured by sheath wire (manufactured in 5 lengths according to joint size)
- a branch off clip used to branch a joint into 1 in and 2 or 3 out (manufactured in 2 applicable sizes (large, small))

### Specifications

Heat shrinkable insulation tube and heat shrink wrap around sleeve are covered by hot melt adhesive, covering the whole inner side length, for guaranteeing excellent sealed connection properties.

Tubes and sleeves are manufactured from cross-linked PE (properties displayed in the Tab. 1).

The Tab. 2 and Tab. 3 provide dimensions of joints and their assignment to straight-through cable joints

Joints of type ZR and ZM are manufactured and supplied in compliance with VUKI corporate standards 22 006.



Tab. 1 Material properties (cross-linked PE)

		ZR	ZM
<b>Tensile strength</b>	[MPa]	min. 13	min. 15
<b>Elongation at break</b>	[%]	min. 350	min. 450
<b>Shrink temperature</b>	[°C]	150 - 200	150 - 200
<b>Operating temperature</b>	[°C]	100	100
- long-term		150	150
- short-term			
<b>Volume resistivity</b>	[Ω.m]	10 <sup>13</sup>	10 <sup>14</sup>
<b>Dielectric strength</b>	[kV/mm]	12	15

Tab. 2 Dimensions of ZR and ZM joints

Type and size	Dimensions [mm]			
	Inner diameters		Lengths	
	before shrinkage	after shrinkage	total	effective*
05ZR	30	8	420	170
1ZR	37	14	420	170
2ZR	47	19	480	240
3ZR	47	19	520	280
4ZR	70	27	480	240
5ZR	70	27	520	280
6ZR	89	37	520	280
7ZR	98	37	650	360
8ZR	113	46	650	360
9ZR	125	46	650	360
10ZR	125	46	850	550
1ZM	42	8	500	170
2ZM	62	22	500	240
3ZM	92	30	500	280

\* effective length defines edge distance of unsheathed cable parts in a joint



Tab. 3 Heat shrink joints ZR and ZM assignment to straight-through cable joints of 0,4 mm, 0,6 mm and 0,8 mm core diameter

No XN	Ø 0,4 mm		Ø 0,6 mm		Ø 0,8 mm	
	ZR	ZM	ZR	ZM	ZR	ZM
3	05	1	05	1	05	1
5	05	1	05	1	1	1
10	1	1	1	1	1	1
15	2	1	2	1	2	1
20	2	1	2	1	2	2
25	2	1	2	1	3	2
35	3	1	4	2	4	2
50	4	1	4	2	4	3
75	4	2	4	3	6	3
100	5	2	6	3	6	3
150	6	3	6	3	7	-
200	7	-	7	-	8	-
250	-	-	8	-	-	-
300	8	-	9	-	-	-
400	9	-	-	-	-	-

XN is used as a symbol for 4-cores

