

2018/2019 General Catalog

**R** A A D

COMPONENT FOR  
ELECTRICAL CONNECTION  
TECHNOLOGY



*Confidence in Connection*



2018/2019 General Catalog

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ELECTRICAL CONNECTION  
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*Confidence in Connection*



## The Company

We make confidence;

Raad offers confidence to his clientele, and this is not treated as a single slogan but as our aim and belief.

Over 26 years of experience and endeavor has helped us to design, expand, produce, and vend a vast range of products, from terminal blocks to measurement equipment, and from wiring ducts and Din rails to other components for electrical connection technology, and thus meeting our customers' needs quite properly.

Product approvals create trust;

Raad's products' quality certificates are the proof of high quality of these products. Raad Products have attained certificates from institutions like TSE, VDE, and DEKRA (KEMA), guaranteeing the products compatibility with international standards, and are suitable for potentially explosive atmospheres (ATEX Directive).

RAAD global market;

Replying to clientele's needs as well as supporting them is one of our commitments. Raad as the pioneer and leading producer in the Iranian domestic market and Middle East, and thanks to his 40 representatives and sales agents, has had efficient exports to global markets as well.

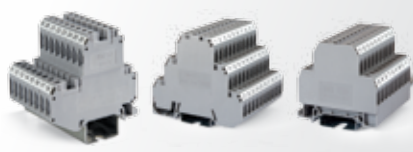
**Raad Manufacturing Co.** reserves the right to make changes to any information given in this catalog regarding technical progresses.










**Please contact us for update technical information and new prices.**

### Factory

20th Ave., Azadegan Rd.  
Isfahan - Iran  
P.O. Box 81395/111  
Tel.: +98 31 33802026  
Fax: +98 31 33802013  
info@raad-co.com  
sales@raad-co.com  
www.raad-co.com

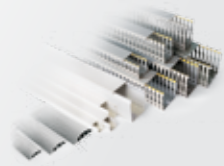

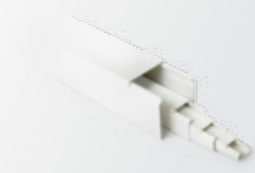
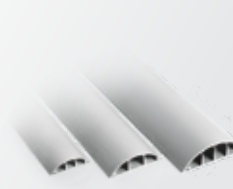


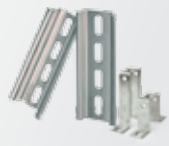
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# Product Overview

Single Level Terminal Blocks



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High Current Terminal Blocks



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Protective Conductor Terminal Blocks



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Double / Three Level Terminal Blocks



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Disconnect and Component Terminal Blocks



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Fuse Terminal Blocks



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**Push-In Connection Terminal Blocks**




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**Transformer Terminal Blocks**




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**RPET2.5 / Page 52**

**Multi Level Push-In Terminal Blocks**



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**Multi-Conductor Push-in Terminal Blocks**



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**Transformer Terminal Blocks**



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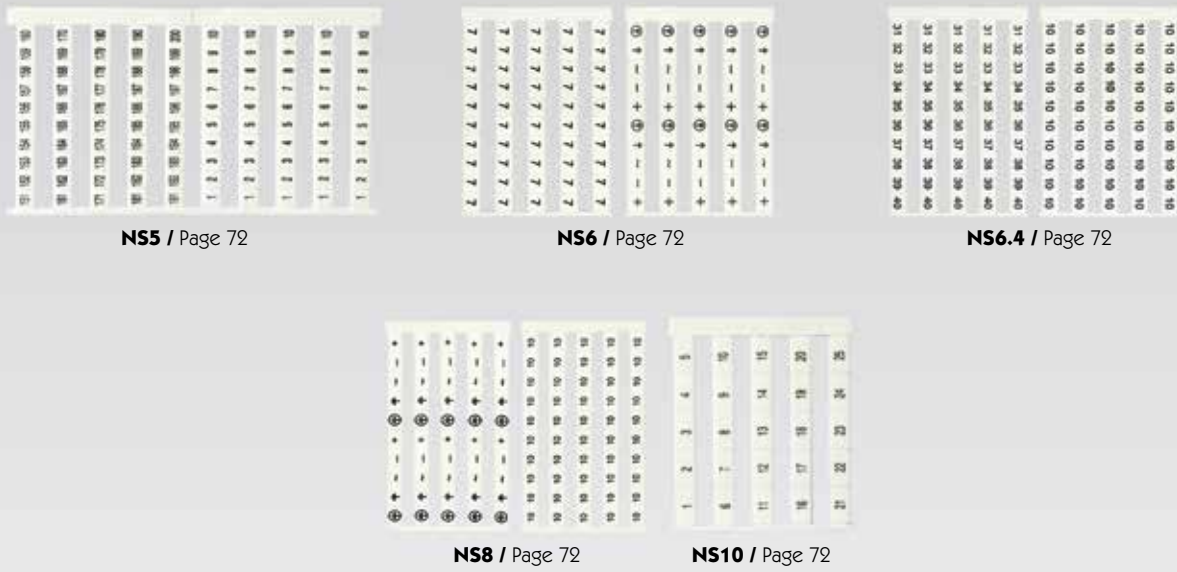
**Strip Series Terminal Blocks**



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# Terminal Block Accessories


**Marking Tags**



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**Group Marking Carriers**




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**End Brackets**



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## Fuse-Switch-Disconnecter



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## Wiring Duct Systems And Components



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Onfloor Wiring Duct / Page 98

## Din Rail Socket Outlet



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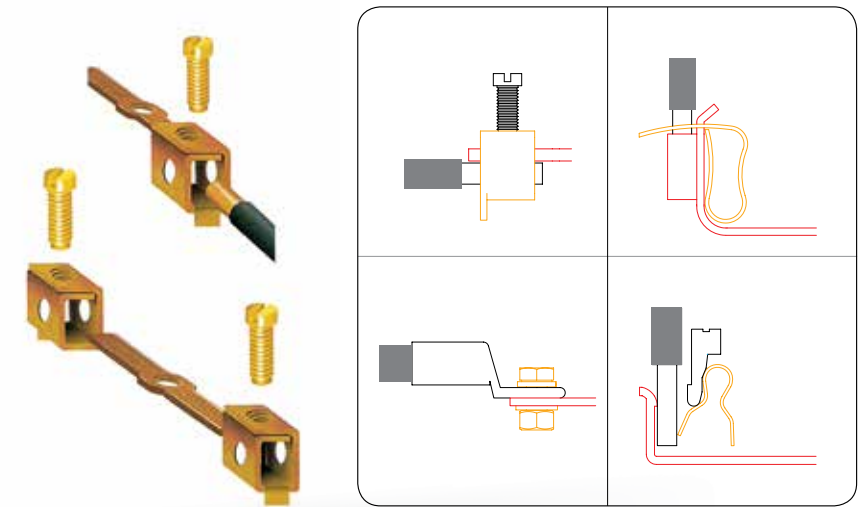
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## Signal Lamp

## Mounting Rails and Accessories



Mounting Rail and Accessories / Page 114

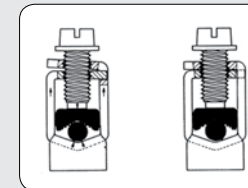


## Screw Connection

This is the most popular of all known methods of connection. No other connection method allows such high contact forces to be produced in such a small space as a screw. Raad terminal block screw connection is easy to operate with a standard screwdriver or allen wrench, suitable for all types of conductors without special preparation, absolutely gas tight and vibration proof.

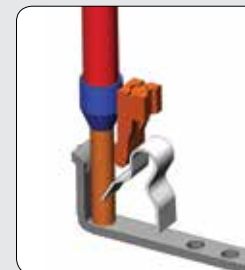
### Reliable Clamping

Most Raad products use a clamping unit system which has been proven millions of times, world-wide. The clamping units as well as clamping screws are produced from hardened steel. When the clamping screw is tightened, the resultant force causes the upper thread overlap to spring open, thus causing a locking action to be exerted on the screw and an excellent resistance against vibration is achieved.



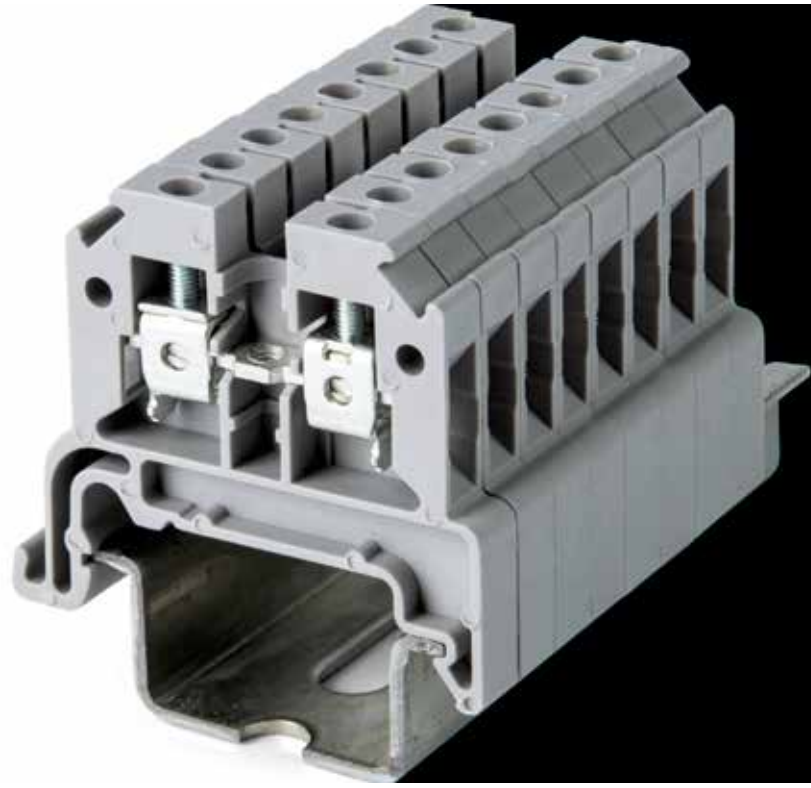
Clamp Connection

## Push-In Connection



Raad push-in clamps, characterized by the simple handling and tool-free connection method. This allows you to push in the solid conductors (no preparation needed) and flexible cables (with using ferrules) and ensures confident connection by opening the contact spring automatically after the cables are pushed into the clamp. This kind of connection is vibration proof.





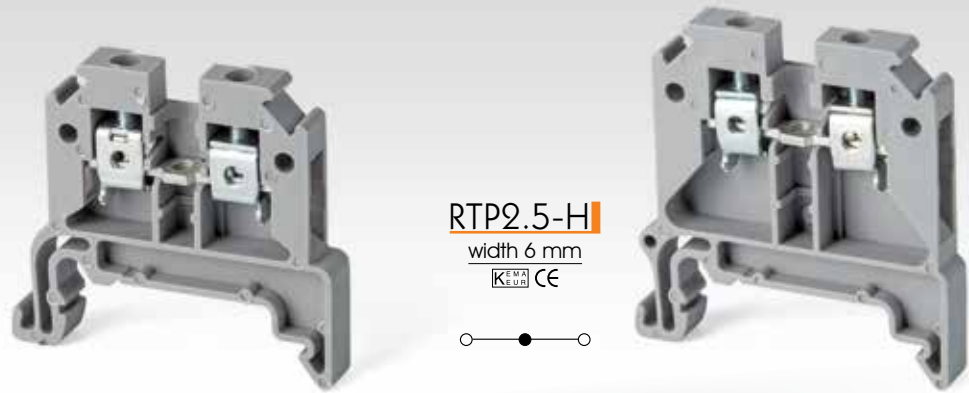
## Single Level Terminal Blocks

**Raad offers the RTP series with the following advantages:**

- Combination foot for TH35 mounting rails
- Terminal insulation body polyamide 6.6
- Easy to tighten by screwdriver
- Closed cable entry for preventing from wire splitting
- Best connection of the conductor, needing no special cable preparation
- Appropriate for different cross-sections of cables, rigid or flexible
- Similar end plates and partition for several types
- Pre-assembled and divisible cross-connection system and easy removable unwanted cross-connection
- Offering protective conductor terminals, suitable for various sizes of terminals
- Having 10 marker strips simultaneously mountable on some sizes of the terminal







**RTP2.5**

width 6 mm



**RTP2.5-H**

width 6 mm



Technical data	RTP2.5			RTP2.5-H		
	Voltage(V)	Current(A)		Voltage(V)	Current(A)	
IEC 60947-7-1	800	24		500	24	
IEC/EN 60079-7	500	24		-	-	
<b>IEC 60947-7-1 rated data</b>						
Impulse voltage (kV)	6			6		
Pollution degree/Voltage category/Material group	3/III/I			3/III/I		
Cross-section (mm²)	2.5			2.5		
Maximum Current (A) / Maximum Conductor Cross-section (mm²)	32/4			32/4		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.
Terminal block, for mounting on TH 35-7.5, 15	RTP2.5	6010402005	100	RTP2.5-H	6010401005	100
End plate	EP-RTP2.5	6020202005	100	EP-RTP4,6,10	6020202105	50
Width (mm)	1.5			1.5		
Partition	P-RTP2.5	6020301005	100	P-RTP4,6,10	6020301105	50
Width (mm)	1.5			1.5		
Small partition no loss of pitch	SP-2.5-10	6020304001	100	SP-2.5-10	6020304001	100
End bracket, for TH 35-7.5, 15	EB/3	6020101003	50	EB/3	6020101003	50
width (mm) Raad recommended	10			10		
End bracket, for TH 35-7.5, 15	EB/1	6020101001	50	EB/1	6020101001	50
width (mm) Raad recommended	9.5			9.5		
Cross-connection	CC10-2.5 10-pos. CC3-2.5 3-pos. CC2-2.5 2-pos.	6020502009 6020502002 6020502001	10 50 50	CC10-2.5 10-pos. CC3-2.5 3-pos. CC2-2.5 2-pos.	6020502009 6020502002 6020502001	10 50 50
max. current (A)	24			24		
Test socket	TS3/6/2.3	6020402001	50	TS3/6/2.3	6020402001	50
Screw driver	0.5x3.0	5010204002	-	0.5x3.0	5010204002	-
Marking Tags	NS6	For details see Accessories		NS6	For details see Accessories	
Colour						
Dimensions (mm)						
Width/Length	6 / 45.2			6 / 45.3		
Height, TH 35-7.5/TH 35-15	41.5 / 49			47.4 / 54.9		
Connection capacity						
Rigid Solid (mm²)	0.5-4			0.5-4		
Rigid stranded (mm²)	0.5-4			0.5-4		
Flexible (mm²)	0.5-2.5			0.5-2.5		
American Wire Gauge (AWG)	20-12			20-12		
IEC test gauge	A3			A3		
Stripping length (mm)	10			10		
Clamping screw	M2.5			M2.5		
Tightening torque (N.m)	0.6			0.4-0.6		
Insulation material	PA 6.6-V0 on request			PA 6.6-V0 on request		



**RTP4**

width 6.4 mm



**RTP6**

width 8 mm

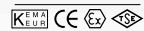


Technical data	RTP4			RTP6		
	Voltage(V)	Current(A)		Voltage(V)	Current(A)	
IEC 60947-7-1	800	32		800	41	
IEC/EN 60079-7	500	32		500	41	
<b>IEC 60947-7-1 rated data</b>						
Impulse voltage (kV)	6			8		
Pollution degree/Voltage category/Material group	3/III/I			3/III/I		
Cross-section (mm²)	4			6		
Maximum Current (A) / Maximum Conductor Cross-section (mm²)	41/6			57/10		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.
Terminal block, for mounting on TH 35-7.5, 15	RTP4	6010403005	100	RTP6	6010404005	50
End plate	EP-RTP4,6,10	6020202105	50	EP-RTP4,6,10	6020202105	50
width (mm)	1.5			1.5		
Partition	P-RTP4,6,10	6020301105	50	P-RTP4,6,10	6020301105	50
width (mm)	1.5			1.5		
Small partition no loss of pitch	SP-2.5-10	6020304001	100	SP-2.5-10	6020304001	100
End bracket, for TH 35-7.5, 15	EB/3	6020101003	50	EB/3	6020101003	50
width (mm) Raad recommended	10			10		
End bracket, for TH 35-7.5, 15	EB/1	6020101001	50	EB/1	6020101001	50
width (mm) Raad recommended	9.5			9.5		
Cross-connection	CC10-4 10-pos. CC3-4 3-pos. CC2-4 2-pos.	6020502109 6020502102 6020502101	10 50 50	CC10-6 10-pos. CC3-6 3-pos. CC2-6 2-pos.	6020502209 6020502202 6020502201	10 50 50
max. current (A)	32			41		
Bridge-comb	BC10-4 10-pos. BC3-4 3-pos. BC2-4 2-pos.	6020504109 6020504102 6020504101	10 50 50	JEB10-6 10-pos. JEB3-6 3-pos. JEB2-6 2-pos.	6020506009 6020506002 6020506001	10 50 50
max. current (A)	32			41		
Test socket	TS3/6/2.3	6020402001	50	-	-	-
Screw driver	0.5x3.0	5010204002	-	0.6x3.5	5010204003	-
Marking Tags	NS6.4	For details see Accessories		NS8	For details see Accessories	
Colour						
Dimensions (mm)						
Width/Length	6.4 / 45.3			8 / 45.3		
Height, TH 35-7.5/TH 35-15	47.4 / 54.9			47.4 / 54.9		
Connection capacity						
Rigid Solid (mm²)	0.5-6			0.5-10		
Rigid stranded (mm²)	0.5-6			0.5-10		
Flexible (mm²)	0.5-4			0.5-6		
American Wire Gauge (AWG)	20-10			20-8		
IEC test gauge	A4			A5		
Stripping length (mm)	12			12		
Clamping screw	M3			M3.5		
Tightening torque (N.m)	0.8			1.2		
Insulation material	PA 6.6-V0 on request			PA 6.6-V0 on request		



**RTP10**

width 10 mm

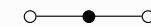


Technical data		RTP10	
		Voltage(V)	Current(A)
IEC 60947-7-1		800	57
IEC/EN 60079-7		500	57
<b>IEC 60947-7-1 rated data</b>			
Impulse voltage (kV)		8	
Pollution degree/Voltage category/Material group		3/III/I	
Cross-section (mm <sup>2</sup> )		10	
Maximum Current (A) / Maximum Conductor Cross-section (mm <sup>2</sup> )		76/16	
Description	Type	Ordering No.	Qty.
Terminal block, for mounting on TH 35-7.5, 15	RTP10	6010405005	50
End plate width (mm)	EP-RTP4,6,10 1.5	6020202105	50
Partition width (mm)	P-RTP4,6,10 1.5	6020301105	50
Small partition no loss of pitch	SP-2.5-10	6020304001	100
End bracket, for TH 35-7.5, 15 width (mm) Raad recommended	EB/3 10	6020101003	50
End bracket, for TH 35-7.5, 15 width (mm) Raad recommended	EB/1 9.5	6020101001	50
Cross-connection	CC10-10 10-pos. CC3-10 3-pos. CC2-10 2-pos.	6020502309 6020502302 6020502301	10 50 50
max. current (A)			57
Test socket	TS3/8/4 TSS 3/26/4	6020402002 6020401005	50 50
Marking Tags	NS10 Raad recommended	For details see Accessories	
Colour			
Dimensions (mm)			
Width/Length	10 / 45.3		
Height, TH 35-7.5/TH 35-15	47.4 / 54.9		
Connection capacity			
Rigid Solid (mm <sup>2</sup> )	0.5-16		
Rigid stranded (mm <sup>2</sup> )	0.5-16		
Flexible (mm <sup>2</sup> )	0.5-10		
American Wire Gauge (AWG)	20-6		
IEC test gauge	B6		
Stripping length (mm)	12		
Clamping screw	M4		
Tightening torque (N.m)	1.5		
Insulation material	PA 6.6-V0 on request		



**RTP16**

width 12.5 mm



Technical data		RTP16			RTP25		
		Voltage(V)	Current(A)		Voltage(V)	Current(A)	
IEC 60947-7-1		1000	76		1000	101	
IEC/EN 60079-7		630	76		630	96	
<b>IEC 60947-7-1 rated data</b>							
Impulse voltage (kV)		8			8		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Cross-section (mm <sup>2</sup> )		16			25		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.	
Terminal block, for mounting on TH 35-7.5, 15	RTP16	6010406005	50	RTP25	6010407005	50	
Partition width (mm)	GP 3	6020305005	20	GP 3	6020305005	20	
End bracket, for G 32 TH 35-7.5, 15 width (mm) Raad recommended	EB/2 10	6020101002	50	EB/2 10	6020101002	50	
Cross-connection	CC10-16 10-pos. CC3-16 3-pos. CC2-16 2-pos.	6020502409 6020502402 6020502401	10 20 20	CC10-25 10-pos. CC3-25 3-pos. CC2-25 2-pos.	6020502419 6020502412 6020502411	10 20 20	
max. current (A)			76			96	
Test socket	TS3.5/8/4	6020402003	50	TS4/8/4	6020402004	50	
Screw driver	1.0x5.5	5010204004	-	1.0x5.5	5010204004	-	
Marking Tags	NS10 Raad recommended	For details see Accessories			NS10 Raad recommended	For details see Accessories	
Colour							
Dimensions (mm)							
Width/Length	12.5 / 49.5			13.6 / 49.5			
Height, TH 35-7.5/TH 35-15	61 / 68.5			61 / 68.5			
Connection capacity							
Rigid Solid (mm <sup>2</sup> )	0.5-16			0.5-16			
Rigid stranded (mm <sup>2</sup> )	0.5-16			0.5-25			
Flexible (mm <sup>2</sup> )	0.5-16			0.5-25			
American Wire Gauge (AWG)	20-6			20-4			
IEC test gauge	B7			B8			
Stripping length (mm)	12.3			12.3			
Clamping screw	M5			M5			
Tightening torque (N.m)	2.5			2.5			
Insulation material	PA 6.6-V0 on request			PA 6.6-V0 on request			



**RTP35**  
width 16.5 mm  
KEMA CE Ex



**RTP50**  
width 20.1 mm  
KEMA CE Ex



**RTP70**  
width 22 mm  
CE



**RTP95**  
width 25.3 mm  
KEMA CE Ex



Technical data	RTP35			RTP50		
	Voltage(V)	Current(A)		Voltage(V)	Current(A)	
IEC 60947-7-1	1000	125		1000	150	
IEC/EN 60079-7	630	124		800	140	
<b>IEC 60947-7-1 rated data</b>						
Impulse voltage (kV)	8			8		
Pollution degree/Voltage category/Material group	3/III/I			3/III/I		
Cross-section (mm <sup>2</sup> )	35			50		
<b>Description</b>	<b>Type</b>	<b>Ordering No.</b>	<b>Qty.</b>	<b>Type</b>	<b>Ordering No.</b>	<b>Qty.</b>
Terminal block, for mounting on TH 35-7.5, 15	RTP35	6010408005	20	RTP50	6010409005	20
Partition width (mm)	GP 3	6020305005	20	GP 3	6020305005	20
End bracket, for G 32 TH 35-7.5, 15 width (mm) Raad recommended	EB/2 10	6020101002	50	EB/2 10	6020101002	50
Cross-connection	CC10-35 10-pos.	6020502439	10	CC3-50 3-pos.	6020502452	10
	CC3-35 3-pos.	6020502432	20	CC2-50 2-pos.	6020502451	10
	CC2-35 2-pos.	6020502431	20			
max. current (A)	114			132		
Test socket	TS4/8/4	6020402004	50	-	-	-
Screw driver	1.2x6.5	5010204005	-	-	-	-
Allen wrench	-	-	-	4	-	-
Marking Tags	NS10 Raad recommended	For details see Accessories		NS10 Raad recommended	For details see Accessories	
Colour	● ● ● ●			● ● ● ●		

Dimensions (mm)	
Width/Length	16.5 / 51.4
Height, TH 35-7.5/TH 35-15	63.5 / 71
<b>Connection capacity</b>	
Rigid Solid (mm <sup>2</sup> )	1.5-16
Rigid stranded (mm <sup>2</sup> )	1.5-35
Flexible (mm <sup>2</sup> )	1.5-35
American Wire Gauge (AWG)	16-2
<b>IEC test gauge</b>	B9
Stripping length (mm)	14.9
<b>Clamping screw</b>	M6
Tightening torque (N.m)	3.5
<b>Insulation material</b>	PA 6.6-V0 on request

Technical data	RTP70			RTP95		
	Voltage(V)	Current(A)		Voltage(V)	Current(A)	
IEC 60947-7-1	1000	192		1000	232	
IEC/EN 60079-7	-	-		750	210	
<b>IEC 60947-7-1 rated data</b>						
Impulse voltage (kV)	8			8		
Pollution degree/Voltage category/Material group	3/III/I			3/III/I		
Cross-section (mm <sup>2</sup> )	70			95		
<b>Description</b>	<b>Type</b>	<b>Ordering No.</b>	<b>Qty.</b>	<b>Type</b>	<b>Ordering No.</b>	<b>Qty.</b>
Terminal block, for mounting on TH 35-7.5, 15	RTP70	6010410005	10	-	-	-
Terminal block, for mounting on G 32 TH 35-15	-	-	-	RTP95	6010411005	5
End bracket, for G 32 TH 35-15 width (mm) Raad recommended	EB/2 10	6020101002	50	EB/2 10	6020101002	50
Cross-connection	CC2-70	6020502472	10	CC3-95 3-pos.	6020502492	10
	CC3-70	6020502471	10	CC2-95 2-pos.	6020502491	10
max. current (A)				210		
Allen wrench	6	-	-	6	-	-
Marking Tags	NS10 Raad recommended	For details see Accessories		NS10 Raad recommended	For details see Accessories	
Colour	● ● ● ●			● ● ● ●		

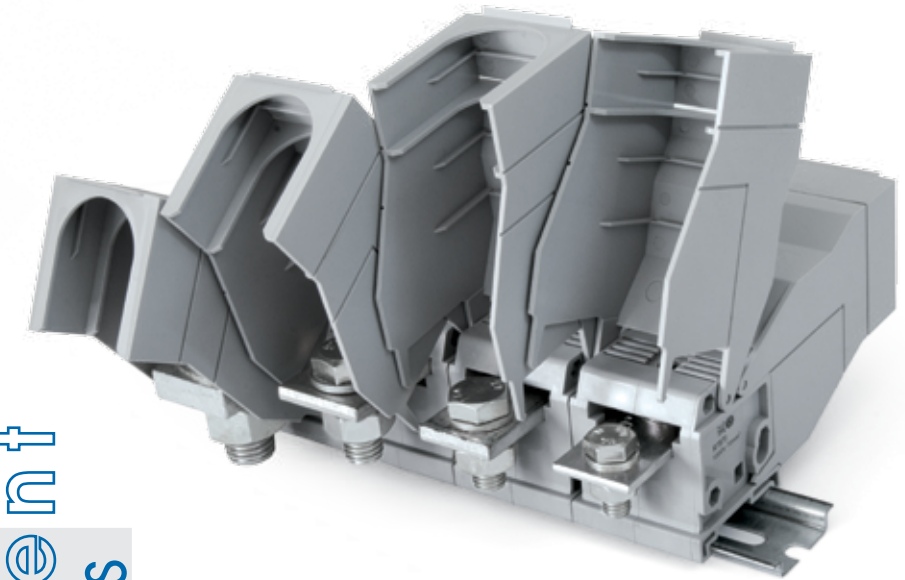
Dimensions (mm)	
Width/Length	22 / 67
Height, G32/TH 35-7.5/TH 35-15	- / 85 / 92
<b>Connection capacity</b>	
Rigid Solid (mm <sup>2</sup> )	6-16
Rigid stranded (mm <sup>2</sup> )	6-70
Flexible (mm <sup>2</sup> )	10-70
American Wire Gauge (AWG)	8-00
<b>IEC test gauge</b>	B11
Stripping length (mm)	19
<b>Clamping screw</b>	M8
Tightening torque (N.m)	10
<b>Insulation material</b>	PA 6.6-V0 on request

**RTP150**  
width 31 mm  
KEMA CE



Technical data		RTP150	
IEC 60947-7-1	Voltage(V)	1000	Current(A)
IEC/EN 60079-7		-	-
<b>IEC 60947-7-1 rated data</b>			
Impulse voltage (kV)		8	
Pollution degree/Voltage category/Material group		3/III/I	
Cross-section (mm <sup>2</sup> )		150	
<b>Description</b>	<b>Type</b>	<b>Ordering No.</b>	<b>Qty.</b>
Terminal block, for mounting on G 32 TH 35-15	RTP150	6010412005	5
End bracket, for G 32 TH 35-7.5, 15 width(mm) Raad recommended	EB/2 10	6020101002	50
Cross-connection	CC2-150 2-pos. 250	6020502511	10
max. current (A)			
Allen wrench	8	-	-
Marking Tags	NS10 Raad recommended	For details see Accessories	
Colour		● ●	

Dimensions (mm)	
Width/Length	31 / 106.4
Height, G32/TH 35-7.5/TH 35-15	115.9 / - / 119.3
Connection capacity	
Rigid Solid (mm <sup>2</sup> )	6-16
Rigid stranded (mm <sup>2</sup> )	6-150
Flexible (mm <sup>2</sup> )	10-150
American Wire Gauge (AWG)	10-300 (Kcmil)
<b>IEC test gauge</b>	<b>B14</b>
Stripping length (mm)	27
<b>Clamping screw</b>	<b>M10</b>
Tightening torque (N.m)	18-22
<b>Insulation material</b>	<b>PA 6.6-V0 on request</b>



## High current Terminal Blocks

- The RTB series are developed to have safe connection of high current carrying conductors in 70, 95, 150, 240 (mm<sup>2</sup>) sizes.
- Mountable on TH35-7.5, 15 Rail profile in accordance with IEC60715.
- The insulating material is PA6.6, high grade fire resistant. (UI 94)
- Safety from finger touch of live parts by using its supplied special covers.
- Isolation cover can be managed to fit different cable lugs.



**RTB70**  
width 43.5 mm



**RTB95**  
width 43.5 mm



**RTB150**  
width 43.5 mm



**RTB240**  
width 46 mm



IEC 60947-7-1 rated data		RTB70			RTB95		
Voltage(V)/Impulse voltage (kV)		1000/8			1000 / 8		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		192			232		
Cross - section (mm <sup>2</sup> )		70			95		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.	
Terminal block, for mounting on TH 35-7.5, 15	RTB70	6010501001	5	RTB95	6010502001	5	
End bracket, for TH 35- 7.5, 15  width (mm) Raad recommended	EB/3 10	6020101003	50	EB/3 10	6020101003	50	
End bracket, for G 32 , TH 35-7.5, 15  width (mm) Raad recommended	EB/2 10	6020101002	50	EB/2 10	6020101002	50	
Marking Tags	NS10	For details see Accessories		NS10	For details see Accessories		

Dimensions (mm)		
Width/Length	43.5/202	43.5/202
Height, TH 35-7.5/TH 35-15	72/79	72/79
Connection capacity		
Cable lugs DIN 46234 (mm <sup>2</sup> )	2.5-70	6-95
Cable lugs DIN 46235 (mm <sup>2</sup> )	16-70	16-95
American Wire Gauge DIN 46234 (AWG)	14-2/0	10-3/0
American Wire Gauge DIN 46235 (AWG)	6-2/0	6-3/0
Clamping screw		
Hole diameter/Power rail	9/25 x 3	11/25 x 5
Tightening torque (N.m)	15-20	25-30
Insulation material		
	PA 6.6	PA 6.6

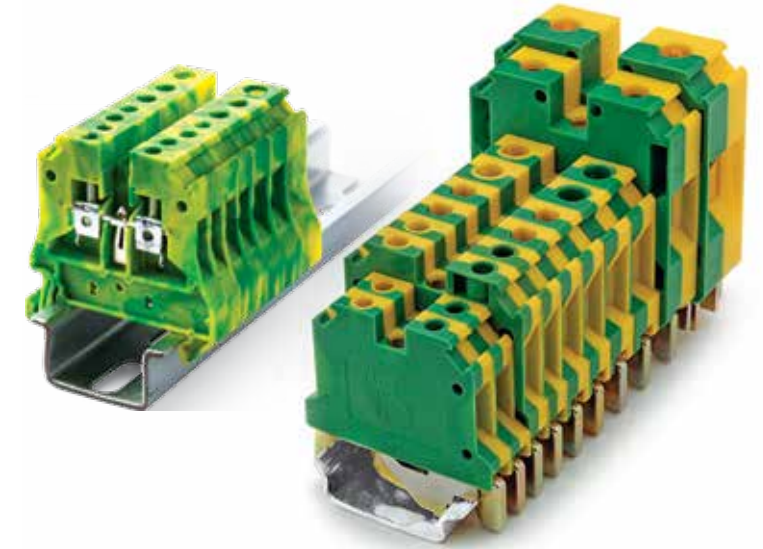
IEC 60947-7-1 rated data		RTB150			RTB240		
Voltage(V)/Impulse voltage (kV)		1000/8			1000 / 8		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		309			415		
Cross - section (mm <sup>2</sup> )		150			240		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.	
Terminal block, for mounting on TH 35-7.5, 15	RTB150	6010503001	5	RTB240	6010504001	4	
End bracket, for TH 35- 7.5, 15  width (mm) Raad recommended	EB/3 10	6020101003	50	EB/3 10	6020101003	50	
End bracket, for G 32 , TH 35-7.5, 15  width (mm) Raad recommended	EB/2 10	6020101002	50	EB/2 10	6020101002	50	
Marking Tags	NS10	For details see Accessories		NS10	For details see Accessories		

Dimensions (mm)		
Width/Length	43.5/202	46/251
Height, G32/TH 35-7.5/TH 35-15	-/72/79	-/74/81
Connection capacity		
Cable lugs DIN 46234 (mm <sup>2</sup> )	10-150	25-240 *
Cable lugs DIN 46235 (mm <sup>2</sup> )	25-150	50-185 *
American Wire Gauge DIN 46234 (AWG)	8-300 Kcmil	4-500 Kcmil
American Wire Gauge DIN 46235 (AWG)	4-300 Kcmil	0-350 Kcmil
Clamping screw		
Hole diameter/Power rail	13/30 x 5	17/29.7 x 9.7
Tightening torque (N.m)	25-30	30-35
Insulation material		
	PA 6.6	PA 6.6

\*Cable Lugs for RTB 240 should be installed under the current bar.



## Protective Conductor Terminal Blocks



- Mountable on both TH35 and G32 mounting rails, beside other types of terminals
- Having green - yellow, partially insulated, cases made of polyamide 6.6
- Designed to provides proper electrical and mechanical connection with its mounting rail, so that it can be used as a protective conductor busbar
- Protective conductor terminal blocks share the same space-saving characteristics and design specifications as the RTP series
- Used for connecting PE and PEN conductors, regarding the rated cross - section to be more than 10 mm<sup>2</sup> for PEN function, as specified in the table below
- easy assembling on rail in new series RETN

Table A.1 - Maximum short - time withstand currents allocated to the rail profile and thermal rated current of a PEN busbar

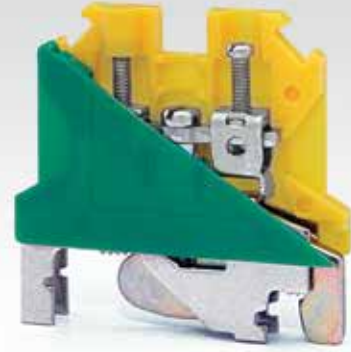
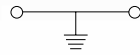
IEC 60947-7-2				
Rail profile	Material	Equivalent E-Cu cross-section mm <sup>2</sup>	Short-time withstand current 1 s kA	Thermal rated current of a PEN busbar A
"Top hat" rail IEC 607 15/TH 15-5.5	Steel **	10	1.2	-
	Copper *	25	3	101
	Aluminium *	16	1.92	76
G-type rail IEC 607 15/G32	Steel **	35	4.2	-
	Copper *	120	14.4	269
	Aluminium *	70	8.4	192
"Top hat" rail IEC 607 15/TH 35-7.5	Steel **	16	1.92	-
	Copper *	50	6	150
	Aluminium *	35	4.2	125
"Top hat" rail IEC 607 15/TH 35-15	Steel **	50	6	-
	Copper *	150	18	309
	Aluminium *	95	11.4	232

\* Copper or aluminium alloys selected by the manufacturer of terminal block assembly to achieve the values in the table.

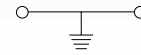
\*\* Steel protective conductor busbars are not allowed to be used as a PEN conductor.



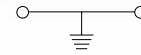
**RET2.5**  
width 6 mm  
KEMA CE



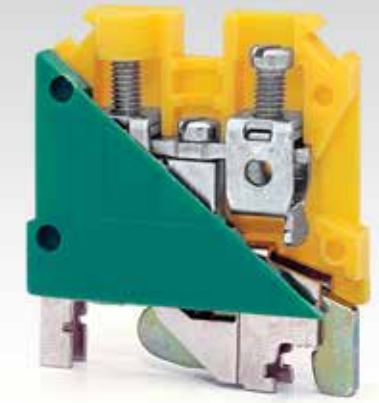
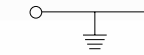
**RET4**  
width 6.5 mm  
KEMA CE



**RET6**  
width 8 mm  
KEMA CE



**RET10**  
width 10 mm  
KEMA CE

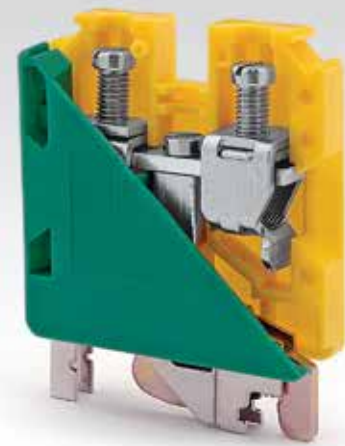


IEC 60947-7-2 rated data	RET2.5			RET4		
Impulse voltage (kV)	6			6		
Pollution degree/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	-			-		
Cross - section (mm <sup>2</sup> )	2.5			4		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.
Terminal block, for mounting on G 32 TH 35-7.5, 15	RET2.5	6010601001	50	RET4	6010601002	50
Marking Tags	NS6	For details see Accessories		NS6.4	For details see Accessories	
Screw driver	0.5x3.0	5010204002	-	0.5x3.0	5010204002	-

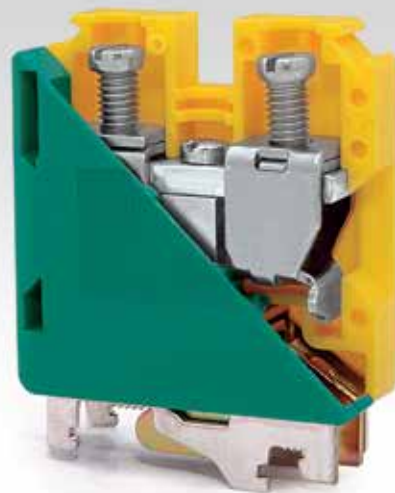
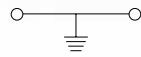
IEC 60947-7-2 rated data	RET6			RET10		
Impulse voltage (kV)	8			8		
Pollution degree/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	-			57		
Cross - section (mm <sup>2</sup> )	6			10		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.
Terminal block, for mounting on G 32 TH 35-7.5, 15	RET6	6010601003	25	RET10	6010601004	25
Marking Tags	NS8	For details see Accessories		NS10 Raad recommended	For details see Accessories	
Screw driver	0.6x3.5	5010204003	-	-	-	-

Dimensions (mm)	RET2.5	RET4
Width/Length	6 / 42.4	6.5 / 42.4
Height, G32/TH 35-7.5/TH 35-15	46 / 41.5 / 49	51.7 / 47.4 / 54.9
Connection capacity		
Rigid Solid (mm <sup>2</sup> )	0.5-4	0.5-4
Rigid stranded (mm <sup>2</sup> )	0.5-4	0.5-4
Flexible (mm <sup>2</sup> )	0.5-2.5	0.5-4
American Wire Gauge (AWG)	20-12	20-12
IEC test gauge	A3	A4
Stripping length (mm)	10	12
Clamping screw/Tightening torque (N.m)	M2.5 / 0.4	M3 / 0.5
Center screw/Tightening torque (N.m)	M3 / 0.5	M3 / 0.5
Insulation material	PA 6.6	PA 6.6

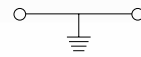
Dimensions (mm)	RET6	RET10
Width/Length	8 / 42.5	10 / 42.5
Height, G32/TH 35-7.5/TH 35-15	51.3 / 47.4 / 54.9	51.3 / 47.4 / 54.9
Connection capacity		
Rigid Solid (mm <sup>2</sup> )	0.5-10	0.5-16
Rigid stranded (mm <sup>2</sup> )	0.5-10	0.5-16
Flexible (mm <sup>2</sup> )	0.5-6	0.5-10
American Wire Gauge (AWG)	20-8	20-6
IEC test gauge	A5	B6
Stripping length (mm)	12	12
Clamping screw/Tightening torque (N.m)	M3.5 / 1.2	M4 / 1.5
Center screw/Tightening torque (N.m)	M4 / 1.2	M4 / 1.2
Insulation material	PA 6.6	PA 6.6



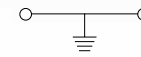
**RET16**  
width 12.5 mm  
K<sub>16</sub> CE



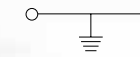
**RET35**  
width 16.5 mm  
K<sub>16</sub> CE



**RET2.5**  
width 6 mm  
CE



**RET4**  
width 6.5 mm  
CE



IEC 60947-7-2 rated data		RET16			RET35		
Impulse voltage (kV)		8			8		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		76			125		
Cross - section (mm <sup>2</sup> )		16			35		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.	
Terminal block, for mounting on G 32 TH 35-7.5, 15	RET16	6010601005	20	RET35	6010601006	20	
Marking Tags	NS10 <sup>Raad recommended</sup>	For details see Accessories		NS10 <sup>Raad recommended</sup>	For details see Accessories		
Screw driver	1.0x5.5	5010204004	-	1.2x6.5	5010204005	-	

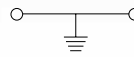
IEC 60947-7-2 rated data		RET2.5			RET4		
Impulse voltage (kV)		6			6		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		-			-		
Cross - section (mm <sup>2</sup> )		2.5			4		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.	
Terminal block, for mounting on TH 35-7.5, 15	RET2.5	6010602001	50	RET4	6010602002	50	
End plate width (mm)	EP-RTP4,6,10 1.5	6020206001	50	EP-RTP4,6,10 1.5	6020206001	50	
Partition width (mm)	P-RTP4,6,10 1.5	6020306001	50	P-RTP4,6,10 1.5	6020306001	50	
Marking Tags	NS6	For details see Accessories		NS6.4	For details see Accessories		
Screw driver	0.5x3.0	5010204002	-	0.5x3.0	5010204002	-	

Dimensions (mm)		
Width/Length	12.5 / 46.5	16.5 / 49.7
Height, G32/TH 35-7.5/TH 35-15	65 / 61 / 68.5	67.6 / 63.5 / 71
Connection capacity		
Rigid Solid (mm <sup>2</sup> )	0.5-16	1.5-16
Rigid stranded (mm <sup>2</sup> )	0.5-16	1.5-35
Flexible (mm <sup>2</sup> )	0.5-16	1.5-35
American Wire Gauge (AWG)	20-6	16-2
IEC test gauge	B7	B9
Stripping length (mm)	12.3	14.9
Clamping screw/Tightening torque (N.m)	M5 / 2.5	M6 / 3.5
Center screw/Tightening torque (N.m)	M4 / 1.2	M5 / 2
Insulation material	PA 6.6	PA 6.6

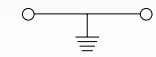
Dimensions (mm)		
Width/Length	6/48.3	6.5/48.3
TH 35-7.5/TH 35-15	47.4 / 54.9	47.4 / 54.9
Connection capacity		
Rigid Solid (mm <sup>2</sup> )	0.5-4	0.5-4
Rigid stranded (mm <sup>2</sup> )	0.5-4	0.5-4
Flexible (mm <sup>2</sup> )	0.5-2.5	0.5-4
American Wire Gauge (AWG)	20-12	20-12
IEC test gauge	A3	A4
Stripping length (mm)	10	12
Clamping screw/Tightening torque (N.m)	M2.5 / 0.4-0.6	M3 / 0.5
Insulation material	PA 6.6	PA 6.6



**RETN6**  
width 8 mm  
CE



**RETN10**  
width 10 mm  
CE



IEC 60947-7-2 rated data		RETN6			RETN10		
Impulse voltage (kV)		8			8		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		-			57		
Cross - section (mm <sup>2</sup> )		6			10		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.	
Terminal block, for mounting on TH 35-7.5, 15	RETN6	6010602003	25	RETN10	6010602004	25	
End plate width (mm)	EP-RTP4,6,10 1.5	6020206001	50	EP-RTP4,6,10 1.5	6020206001	50	
Partition width (mm)	P-RTP4,6,10 1.5	6020306001	50	P-RTP4,6,10 1.5	6020306001	50	
Marking Tags	NS8	For details see Accessories		NS10 Raad recommended	For details see Accessories		
Screw driver	0.6x3.5	5010204003	-	-	-	-	

Dimensions (mm)		
Width/Length	8/48.3	10/48.3
Height, G32/TH 35-7.5/TH 35-15	47.4 / 54.9	47.4 / 54.9
Connection capacity		
Rigid Solid (mm <sup>2</sup> )	0.5-10	0.5-16
Rigid stranded (mm <sup>2</sup> )	0.5-10	0.5-16
Flexible (mm <sup>2</sup> )	0.5-6	0.5-10
American Wire Gauge (AWG)	20-8	20-6
IEC test gauge		
Stripping length (mm)	12	12
Clamping screw/Tightening torque (N.m)	M3.5 / 1.2	M4 / 1.5
Insulation material		
	PA 6.6	PA 6.6

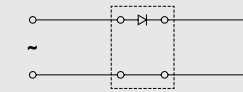
## Double / Three Level Terminal Blocks



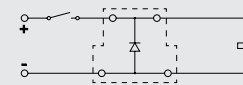
This section consists of double-level (DRTP2.5/4, DRTP4-Series) and three-level (TRTP4) terminal blocks.

Raad double level terminal blocks enjoy the space-saving advantage. It is remarkable in DRTP4 that due to its double wiring density, the upper level is offset laterally by half of the terminal block width and the following advantages are met:

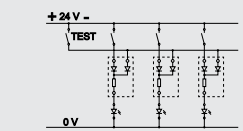
- Accessibility of the lower level screw is more effective with a screw driver and,
  - Lower labels and entry points can be viewed better
- The end plates, EP1, EP2, EP3 compensates the level offset at the beginning and the end of the terminal strips, therefore standard terminal blocks can be directly aligned.
- As for foot connection, they can be mounted on TH 35 mounting rail.
- Terminal block type DRTP4-L, DRTP2.5/4-L has four accessible input/output connecting ports by an internally link between two upper and lower levels. These terminals can be used as distribute terminals same as one to three or one to two branches, in the equipotential circuits, They can also be connected to adjacent terminals, through cross-connection in the lower level.



Example for rectifying purposes



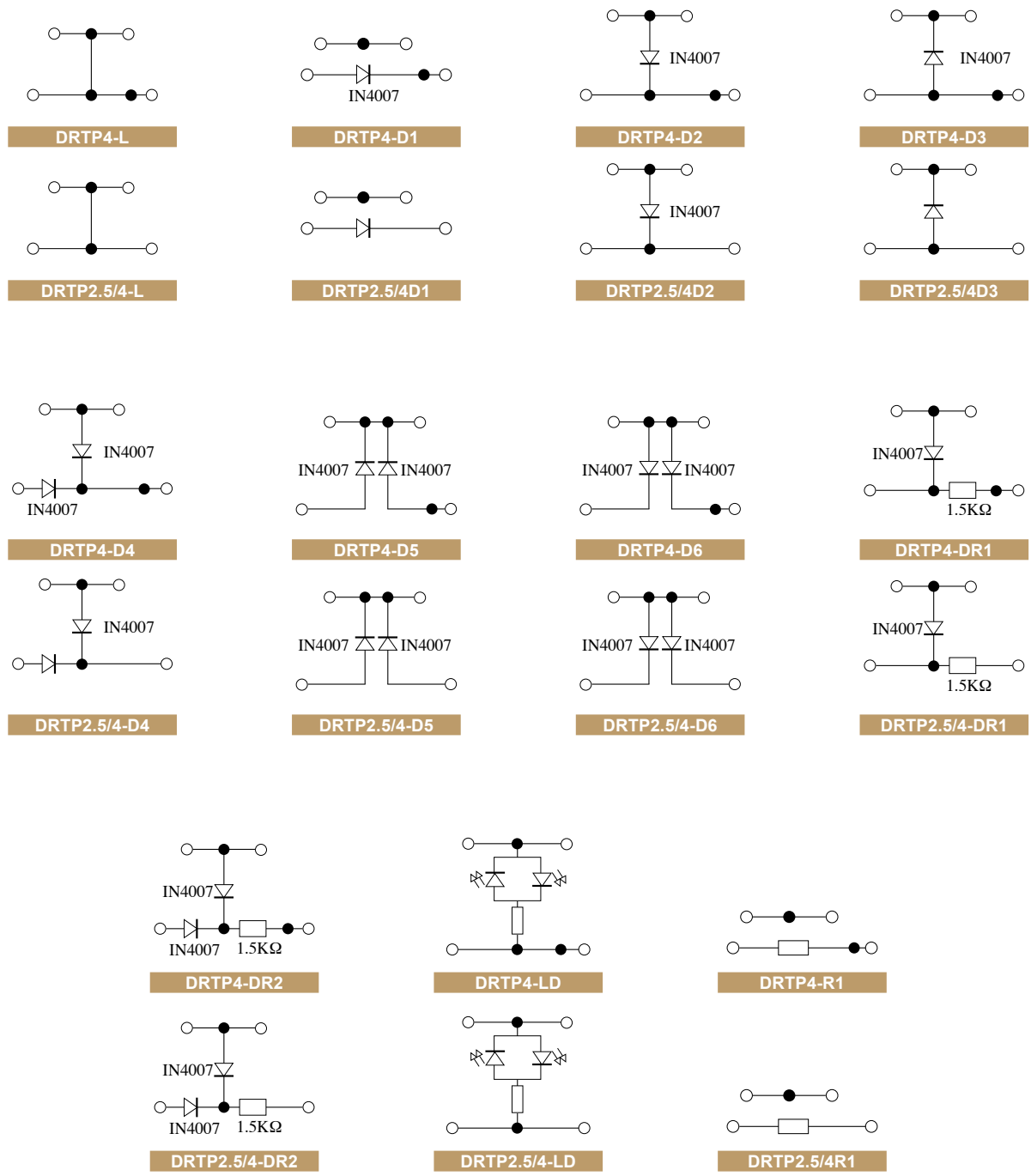
Example for fine switching a DC load



Example for lamp test circuit

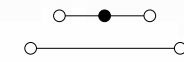
• In designing DRTP2.5/4, DRTP4, special capabilities are offered for installing electronic elements. Raad double level terminal blocks are used for voltage rectifying, monitoring, electronic elements, fine switching, and test circuits. Furthermore, a number of circuits, in which the terminals are applied, are offered (for details see diagrams as follows). Any other type of circuit is offered on request.

• The coloured options can be requested. Raad three-level terminal block was specially developed for space-saving wiring in 3 wired elements such as motors and sensors, e.g. phase-neutral-earth connection or positive-negative-earth / shield connection. Some of the circuits designed by using small components in the Raad double level terminal blocks (DRTP2.5/4, DRTP4) given as below:



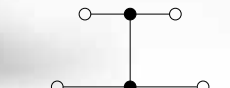
**DRTP2.5/4**

width 6 mm



**DRTP2.5/4-L**

width 6 mm

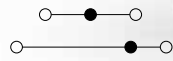


IEC 60947-7-1 rated data	DRTP2.5/4			DRTP2.5/4-L		
Voltage(V)/Impulse voltage (kV)	500 / 6			500 / 6		
Pollution degree/Voltage category/Material group	3/III/1			3/III/1		
Current (A)	32			32		
Cross - section (mm <sup>2</sup> )	4			4		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.
Terminal block, for mounting on TH 35-7.5, 15	DRTP2.5/4	6010728005	50	DRTP2.5/4-L	6010729005	50
End plate width (mm)	EP-DRTP2.5/4 1.2	6020203001	20	EP-DRTP2.5/4 1.2	6020203001	20
End bracket, for TH 35- 7.5, 15 width (mm) Raad recommended	EB/3 10	6020101003	50	EB/3 10	6020101003	50
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended	EB/2 10	6020101002	50	EB/2 10	6020101002	50
Partition width (mm)	GP 3	6020305005	20	-	-	-
Cross-connection	CC10-2.5 10-pos CC3-2.5 3-pos CC2-2.5 2-pos	6020502009 6020502002 6020502001	10 50 50	-	-	-
Test socket	TS3/6/2.3	6020402001	50	-	6020402001	-
Marking Tags	NS6	For details see Accessories	-	NS6	For details see Accessories	-
Screw driver	0.5x3	5010204002	-	0.5x3	5010204002	-
Colour						

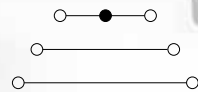
Dimensions (mm)	DRTP2.5/4	DRTP2.5/4-L
Width/Length	6/57.4	6/57.4
Height, G32/TH 35-7.5/TH 35-15	-/56.9/64.4	-/56.9/64.4
Connection capacity		
Rigid Solid (mm <sup>2</sup> )	0.5-4	0.5-4
Rigid stranded (mm <sup>2</sup> )	0.5-4	0.5-4
Flexible (mm <sup>2</sup> )	0.5-4	0.5-4
American Wire Gauge (AWG)	20-12	20-12
IEC test gauge	A4	A4
Stripping length (mm)	9	9
Clamping screw	M2.5	M2.5
Tightening torque (N.m)	0.4	0.4
Insulation material	PA 6.6	PA 6.6



**DRTP4**  
width 6.4 mm  
KEMA CE



**TRTP4**  
width 6.4 mm  
KEMA CE

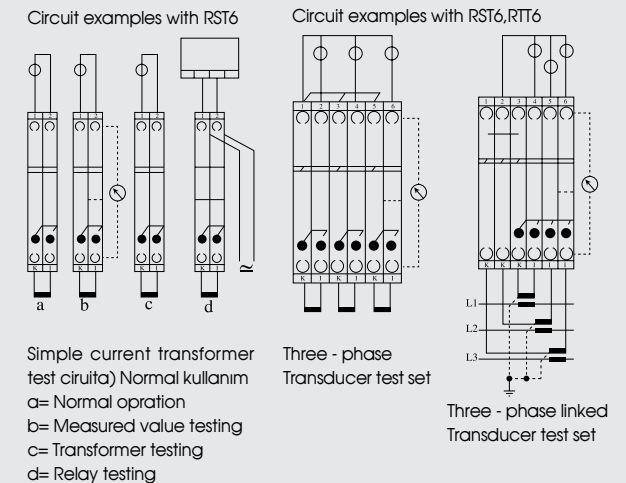


IEC 60947-7-1 rated data		DRTP4			TRTP4		
Voltage(V)/Impulse voltage (kV)		500 / 6			400 / 6		
Pollution degree/Voltage category/Material group		3/III/1			3/III/1		
Current (A)		32			32		
Cross - section (mm²)		4			4		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.	
Terminal block, for mounting on TH-35-7.5,15	DRTP4	6010701005	50	TRTP4	6010750005	50	
End plate 1 width (mm)	EP1-DRTP4 1.5	6020203002	20	-	-	-	
End plate 2 width (mm)	EP2-DRTP4 1.5	6020203003	20	-	-	-	
End plate 3 width (mm)	EP3-DRTP4 2.5	6020203004	20	-	-	-	
Partition width (mm)	P-DRTP4 2.5	6020302001	20	-	-	-	
Partition width (mm)	-	-	-	GP 3	6020305005	20	
Small partition no loss of pitch	SP-D4 0.9	6020304004	100	-	-	-	
End bracket, for G 32 TH 35- 7.5, 15 width (mm) Raad recommended	EB/2 10	6020101002	50	EB/2 10	6020101002	50	
Cross-connection	CC10-D4 10-pos. CC3-D4 3-pos. CC2-D4 2-pos.	6020503009 6020503002 6020503001	10 50 50	CC10-D4 10-pos. CC3-D4 3-pos. CC2-D4 2-pos.	6020503009 6020503002 6020503001	10 50 50	
max. current (A)		32		32			
Bridge-comb	BC10-D4 10-pos. BC3-D4 3-pos. BC2-D4 2-pos.	6020504209 6020504202 6020504201	10 50 50	BC10-D4 10-pos. BC3-D4 3-pos. BC2-D4 2-pos.	6020504209 6020504202 6020504201	10 50 50	
max. current (A)		32		32			
Test socket	TS3/6/2.3	6020402001	50	TS3/6/2.3	6020402001	50	
Marking Tags	NS6.4	For details see Accessories		NS6.4	For details see Accessories		
Screw driver	0.5x3	5010204002	-	0.5x3	5010204002	-	

Dimensions (mm)	
Width/Length	6.4 / 68.4
Height, G32/TH 35-7.5/TH 35-15	71.5 / 67.5 / 75
Connection capacity	
Rigid Solid (mm²)	0.5-4
Rigid stranded (mm²)	0.5-4
Flexible (mm²)	0.5-4
American Wire Gauge (AWG)	20-12
IEC test gauge	
Stripping length (mm)	9
Clamping screw	
Tightening torque (N.m)	0.4
Insulation material	PA 6.6

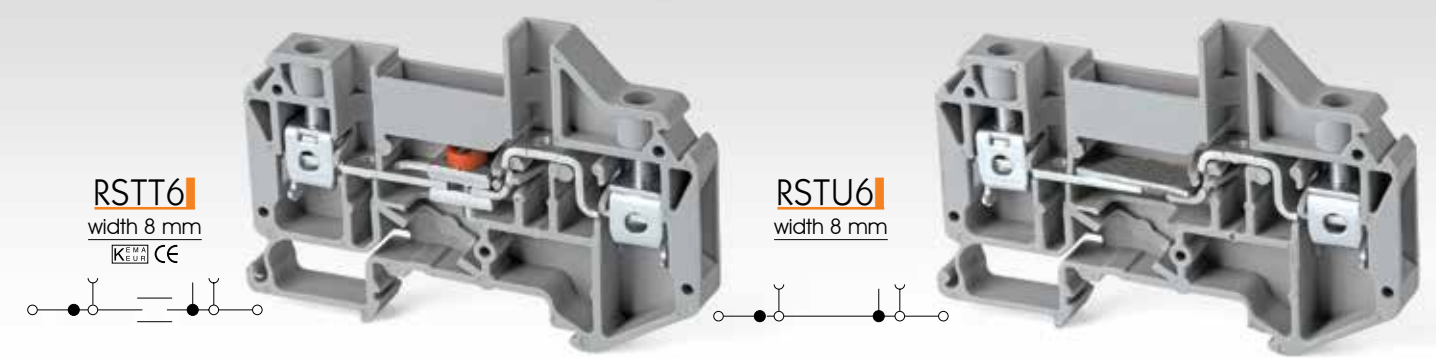
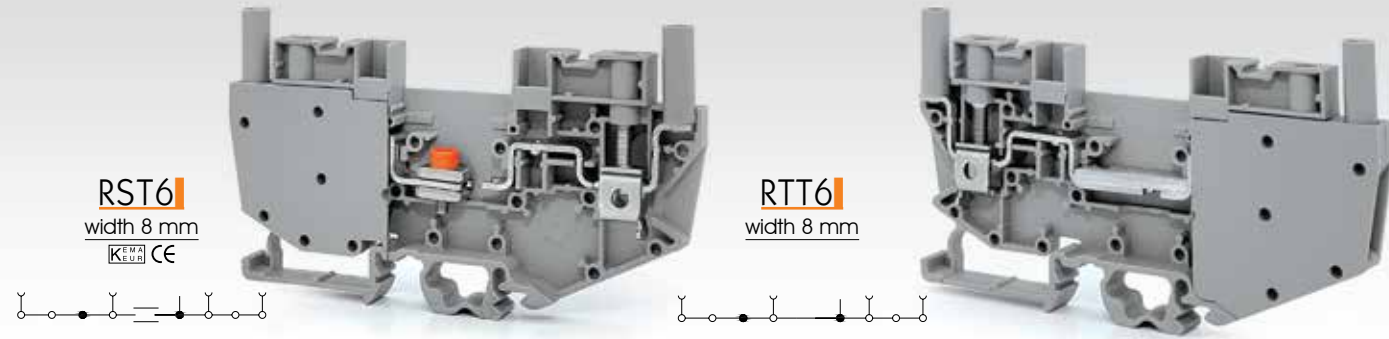


## Test Disconnect Terminal Blocks



In measuring, control and remote - controlled systems, test disconnect terminals are often installed.

A typical circuit can be considered for each of the above mentioned items. RST6, RSTU6, RSTP6, RSTN6, RST6, RTT6, accompanied by their relating accessories, can be mounted in all types of circuits specified in this field, including secondary circuits for current transformers.



IEC 60947-7-1 rated data		RST6			RTT6		
Voltage (V) / Impulse voltage (kV)		400 / 6			400 / 6		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		41			41		
Cross - section (mm²)		6			6		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.	
Test disconnect terminal, for mounting on G 32 TH 35-7.5, 15	RST6	6010301001	20	RTT6	6010302001	20	
Moveable cross-connection, for 2 terminal blocks, with 2 screws max. current (A)	ML2N 32	6020602001	50	ML2N 32	6020602001	50	
Moveable cross-connection, for 3 terminal blocks, with 3 screws max. current (A)	ML3N 32	6020602002	50	ML3N 32	6020602002	50	
Moveable cross-connection, for 4 terminal blocks, with 4 screws max. current (A)	ML4N 32	6020602003	50	ML4N 32	6020602003	50	
Cross-connection	CC10-6 10-pos. CC3-6 3-pos. CC2-6 2-pos.	6020502209 6020502202 6020502201	10 50 50	CC10-6 10-pos. CC3-6 3-pos. CC2-6 2-pos.	6020502209 6020502202 6020502201	10 50 50	
max. current (A)	41			41			
Bridge-comb	JEB10-6 10-pos. JEB3-6 3-pos. JEB2-6 2-pos.	6020506009 6020506002 6020506001	10 50 50	JEB10-6 10-pos. JEB3-6 3-pos. JEB2-6 2-pos.	6020506009 6020506002 6020506001	10 50 50	
max. current (A)	41			41			
End bracket, for TH 35-7.5, 15 width (mm) Raad recommended	EB/3 10	6020101003	50	EB/3 10	6020101003	50	
End bracket, for TH 35- 7.5, 15 width (mm) Raad recommended	EB/1 9.5	6020101001	50	EB/1 9.5	6020101001	50	
Marking Tags	NS8	For details see Accessories		NS8	For details see Accessories		
Test Socket	TSS 3/26/4	6020401101	50	TSS 3/26/4	6020401101	50	
Screw driver	0.6x3.5 0.5x3	5010204003 5010204002	- -	0.6x3.5 0.5x3	5010204003 5010204002	- -	

Dimensions (mm)	
Width/Length	8 / 107
Height, G32/TH 35-7.5/TH 35-15	65/61.5 / 69
Connection capacity	
Rigid Solid (mm²)	0.5-10
Rigid stranded (mm²)	0.5-10
Flexible (mm²)	0.5-6
American Wire Gauge (AWG)	20-8
IEC test gauge	
Stripping length (mm)	12
Clamping screw/Tightening torque (N.m)	
Center screw/Tightening torque (N.m)	M3 / 0.5
Insulation material	PA 6.6

IEC 60947-7-1 Rated data		RSTT6			RSTU6		
Voltage (V) / Impulse voltage (kV)		400 / 6			400 / 6		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		41			41		
Cross - section (mm²)		6			6		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.	
Test disconnect terminal, for mounting on TH 35-7.5, 15	RSTT6	6010303001	25	RSTU6	6010305001	25	
End Plate width (mm)	EP-RSTT6 1.5	6020201003	50	EP-RSTT6 1.5	6020201003	50	
Moveable cross-connection, for 2 terminal blocks, with 2 screws max. current (A)	ML2N 32	6020602001	50	ML2N 32	6020602001	50	
Moveable cross-connection, for 3 terminal blocks, with 3 screws max. current (A)	ML3N 32	6020602002	50	ML3N 32	6020602002	50	
Moveable cross-connection, for 4 terminal blocks, with 4 screws max. current (A)	ML4N 32	6020602003	50	ML4N 32	6020602003	50	
Cross-connection	CC10-6 10-pos. CC3-6 3-pos. CC2-6 2-pos.	6020502209 6020502202 6020502201	10 50 50	CC10-6 10-pos. CC3-6 3-pos. CC2-6 2-pos.	6020502209 6020502202 6020502201	10 50 50	
max. current (A)	41			41			
Bridge-comb	JEB10-6 10-pos. JEB3-6 3-pos. JEB2-6 2-pos.	6020506009 6020506002 6020506001	10 50 50	JEB10-6 10-pos. JEB3-6 3-pos. JEB2-6 2-pos.	6020506009 6020506002 6020506001	10 50 50	
max. current (A)	41			41			
End bracket, for TH 35-7.5, 15 width (mm) Raad recommended	EB/3 10	6020101003	50	EB/3 10	6020101003	50	
End bracket, for TH 35- 7.5, 15 width (mm) Raad recommended	EB/1 9.5	6020101001	50	EB/1 9.5	6020101001	50	
Marking Tags	NS8	For details see Accessories		NS8	For details see Accessories		
Test Socket	TSS 3/26/4	6020401101	50	TSS 3/26/4	6020401101	50	
Screw driver	0.6x3.5 0.5x3	5010204003 5010204002	- -	0.6x3.5 0.5x3	5010204003 5010204002	- -	

Dimensions (mm)	
Width/Length	8 / 78
Height, TH 35-7.5/TH 35-15	55.5/63
Connection capacity	
Rigid Solid (mm²)	0.5-10
Rigid stranded (mm²)	0.5-10
Flexible (mm²)	0.5-6
American Wire Gauge (AWG)	20-8
IEC test gauge	
Stripping length (mm)	12
Clamping screw/Tightening torque (N.m)	
Center screw/Tightening torque (N.m)	M3 / 0.5
Insulation material	PA 6.6





IEC 60947-7-1 rated data		RSTP6		RSTN6		
Voltage (V) / Impulse voltage (kV)		500 / 6		400 / 6		
Pollution degree/Voltage category/Material group		3/III/I		3/III/I		
Current (A)		41		41		
Cross - section (mm²)		6		6		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.
Test disconnect terminal, for mounting on G 32 TH 35-7.5, 15	RSTP6	6010304001	25	-	-	-
Terminal block, for mounting on TH 35-7.5, 15	-	-	-	RSTN6	6010306001	25
End Plate width (mm)	EP-RSTP6 1.5	6020201004	50	-	-	-
End Plate width (mm)	-	-	-	EP-RSTN6 1.5	6020201006	50
Moveable cross-connection, for 2 terminal blocks	-	-	-	L2	6020501001	50
Moveable cross-connection, for 3 terminal blocks	-	-	-	L3	6020501002	50
Moveable cross-connection, for 4 terminal blocks	-	-	-	L4	6020501003	50
Cross-connection*	-	-	-	CC10-6 10-pos CC3-6 3-pos CC2-6 2-pos	6020502209 6020502202 6020502201	10 50 50
Bridge-comb	JEB10-6 10-pos. JEB3-6 3-pos. JEB2-6 2-pos.	6020506009 6020506002 6020506001	10 50 50	JEB10-6 10-pos JEB3-6 3-pos JEB2-6 2-pos	6020506009 6020506002 6020506001	10 50 50
max. current (A)	41					
End bracket, for TH 35-7.5, 15 width (mm) Raad recommended	EB/3 10	6020101003	50	EB/3 10	6020101003	50
End bracket, for TH 35-7.5, 15 width (mm) Raad recommended	EB/1 9.5	6020101001	50	EB/1 9.5	6020101001	50
Screw driver	1.0 x 5.5	5010204004	-	0.6 x 3.5 0.5 x 3	5010204003 5010204002	- -
Marking Tags	NS8	For details see Accessories		NS8	For details see Accessories	
<b>Dimensions (mm)</b>						
Width/Length		8 / 63		8 / 70.2		
Height, G32/TH 35-7.5/TH 35-15		58.5/54.8/63.2		- / 50 / 57.6		
<b>Connection capacity</b>						
Rigid Solid (mm²)		0.5-10		0.5-10		
Rigid stranded (mm²)		0.5-10		0.5-10		
Flexible (mm²)		0.5-6		0.5-6		
American Wire Gauge (AWG)		20-8		20-8		
<b>IEC test gauge</b>		A5		A5		
Stripping length (mm)		12		12		
Clamping screw/Tightening torque (N.m)		M3.5		M3.5/1.2		
Center screw/Tightening torque (N.m)		1.2		M3/0.5		
<b>Insulation material</b>		PA 6.6		PA 6.6		

\*After releasing the test socket, you can use the Cross-connection by inserting (CC) instead of mentioned test socket.

# Disconnect and Component Terminal Blocks



Disconnect and component terminal blocks can be used, in measurement and control systems.

With disconnect terminals the current can quickly and safely be cut to carry out essential maintenance.

The function of RDT4, in order to rapidly switching circuits has distinguished this type of terminal.

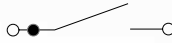
Furthermore RDT4-TS is characterized by test socket for measuring and monitoring circuits.

In addition to switching the circuits, RDT2.5-C accompanied by its relating accessories, can be used as diode terminal block in RDT2.5-CDC or fuse terminal block in RDT2.5-CFC (with or without LED indicator).

On customer requirements, the capability of mounting any other components such as resistor, capacitor, etc... on terminal blocks RDT2.5-C and RDT4 would be considered.

**RDT2.5-C**

width 6 mm  
 CE



**RDT2.5-CTS**

width 6 mm  
 CE



**RDT2.5-CDC**






width 6 mm







**RDT2.5-CRC**

width 6 mm



IEC 60947-7-1 rated data	RDT2.5-C			RDT2.5-CTS		
Voltage (V) / Impulse voltage (kV)	500 / 6			500 / 6		
Pollution degree/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	17.5			17.5		
Cross section (mm <sup>2</sup> )	1.5			1.5		
Max current (A) / Max conductor cross section (mm <sup>2</sup> )	20/2.5			20/2.5		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.
Disconnect and component terminal, for mounting on TH 35-7.5, 15 	RDT2.5-C	6010801001	50	RDT2.5-CTS With socket screw	6010801006	50
End bracket, for TH 35-7.5, 15 width (mm) Raad recommended 	EB/3 10	6020101003	50	EB/3 10	6020101003	50
End bracket, for TH 35-7.5, 15 width (mm) Raad recommended 	EB/1 9.5	6020101001	50	EB/1 9.5	6020101001	50
Screw driver 	0.5x3	5010204002	-	0.5x3	5010204002	-
Marking Tags 	NS6	For details see Accessories		NS6	For details see Accessories	

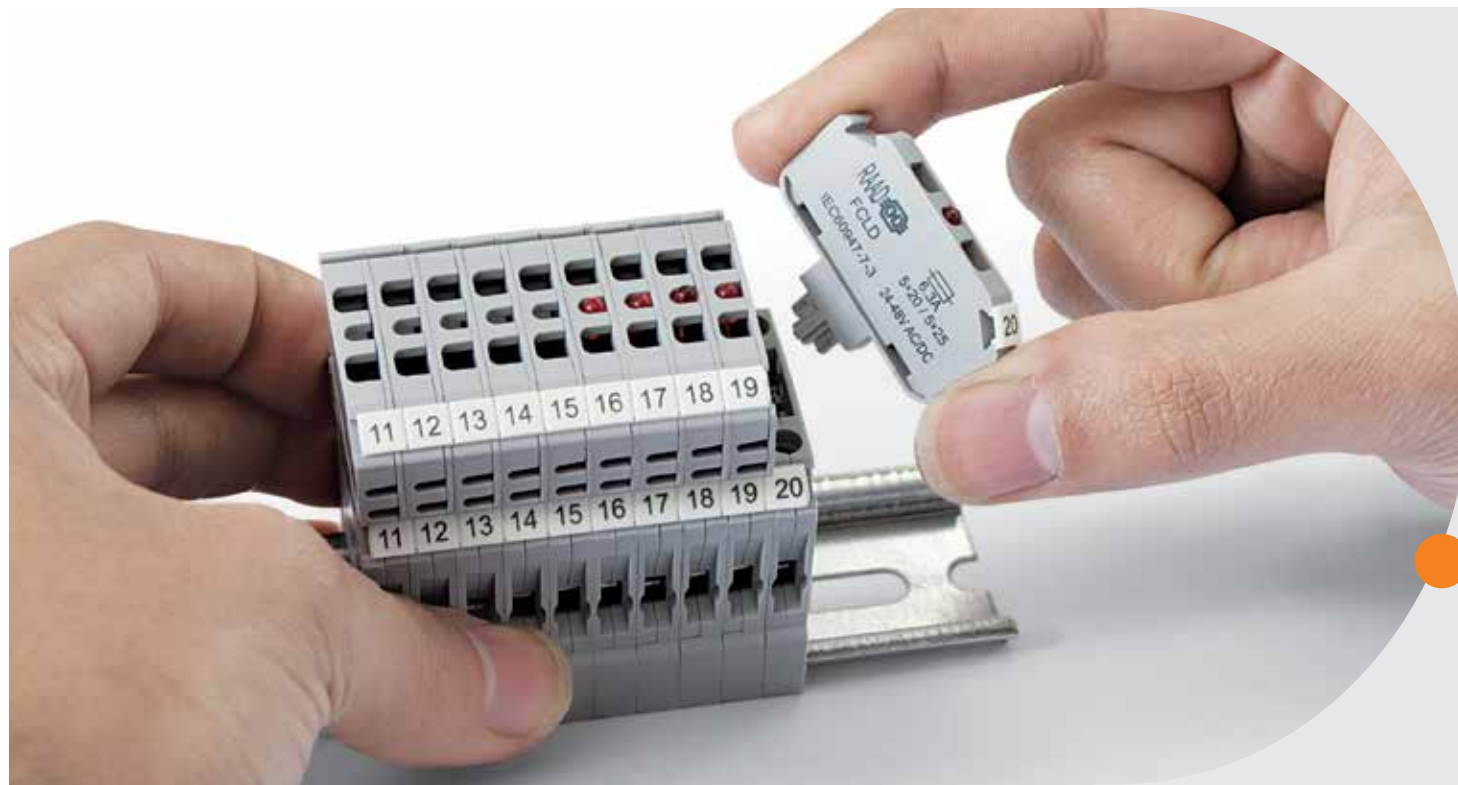
Dimensions (mm)	RDT2.5-C	RDT2.5-CTS
Width/Length	6 / 45.3	6 / 45.3
Height, TH 35-7.5/TH 35-15	47.6 / 55.1	47.6 / 55.1
Connection capacity		
Rigid Solid (mm <sup>2</sup> )	0.5-4	0.5-4
Rigid stranded (mm <sup>2</sup> )	0.5-4	0.5-4
Flexible (mm <sup>2</sup> )	0.5-4	0.5-4
American Wire Gauge (AWG)	20-12	20-12
IEC test gauge	A4	A4
Stripping length (mm)	12	12
Clamping screw	M2.5	M2.5
Tightening torque (N.m)	0.4-0.6	0.4-0.6
Insulation material	PA 6.6	PA 6.6

IEC 60947-7-1 Rated data	RDT2.5-CDC			RDT2.5-CRC		
Voltage/Impulse voltage (kV)	500 / 6			500 / 6		
Diode reverse voltage (V)	1000			-		
Current (A)	17.5 *			17.5		
Diode Current (A)	1			-		
Diode	1N4007			-		
Cross - section (mm <sup>2</sup> )	1.5			1.5		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.
Disconnect and component terminal, for mounting on TH 35-7.5, 15 	RDT2.5-CDC	6010801002	25	RDT2.5-CRC	6010801007	25
End bracket, for G 32 TH 35-7.5, 15 width (mm) Raad recommended 	EB/2 10	6020101002	50	EB/2 10	6020101002	50
Screw driver 	0.5x3	5010204002	-	0.5x3	5010204002	-
Marking Tags 	NS6	For details see Accessories		NS6	For details see Accessories	

Dimensions (mm)	RDT2.5-CDC	RDT2.5-CRC
Width/Length	6 / 45.3	6 / 45.3
Height, TH 35-7.5/TH 35-15	66.4 / 73.9	66.4 / 73.9
Connection capacity		
Rigid Solid (mm <sup>2</sup> )	0.5-4	0.5-4
Rigid stranded (mm <sup>2</sup> )	0.5-4	0.5-4
Flexible (mm <sup>2</sup> )	0.5-4	0.5-4
American Wire Gauge (AWG)	20-12	20-12
IEC test gauge	A4	A4
Stripping length (mm)	12	12
Clamping screw	M2.5	M2.5
Tightening torque (N.m)	0.4-0.6	0.4-0.6
Insulation material	PA 6.6	PA 6.6

\*The maximum operating current up to 1A, when using diode.





## FUSE Terminal Blocks

In accordance with the electrical standards, all electrical equipment control systems and machines must be protected with fuse cartridges, thus fuse terminal blocks have been developed to meet requirements of these standards.

The technical data of the fuse terminal blocks, for the protection of electrical devices, is bounded to the application and the use of products.

The RFT5 type holds different segments: The base terminal block and the upper hinged-type fuse carrier.

The RFT5 type is equipped with a light indicator which signals when the fuse blows. Meanwhile the RFT5 terminal block can carry a spare fuse cartridge inside the terminal.

The terminal type RDT2.5-CFC (and RDT2.5-CFCLD) has the advantages of easy removing and replacing of the cap (and the fuse) as well as isolation of the fuse signal circuit from the terminal block base, when detaching the cap.

- Maximum power dissipation of fuse terminal blocks at 23°C (based on IEC 60947-7-3):

Type	Overload & short circuit protection		Exclusive short circuit protection	
	Separate	Compound	Separate	Compound
RFT5	1.6 watt	1.6 watt	4 watt	1.6 watt
RDT2.5-CFC	2.5 watt	1.6 watt	4 watt	2.5 watt

### Some of the cartridge fuse inserts suppliers are as follows:

- **Wickmann- Werke GmbH**  
P.O.Box 2520  
D-S8415 Witten, Germany  
Phone: +49/2302/6620  
Fax: +49/2302/662219

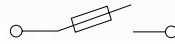
- **SIBA**  
P.O.Box 1940  
D-44509 Lunen, Germany  
Phone: +49/2306/7001-0  
Fax: +49/2306/7001-10

- **ELU**  
P.O.Box 101054  
D-44010 Dortmund, Germany  
Phone: +49/231/55 70 300  
Fax: +49/231/55 70 309

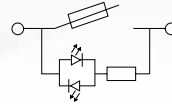
- **Ferraz Shawmut SA**  
Charles DEBUT-Directeur  
Commercial France  
Phone: +33 (0)4 7222 66 29  
Fax: +33 (0)4 72 22 67 01



**RFT5**  
width 8 mm  
K4+V4 CE



**RFT5-LD**  
width 8 mm



IEC 60947-7-3 rated data		RFT5			RFT5-LD		
Voltage (V) / Impulse voltage (kV)		800 / 8			-		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		6.3			6.3		
Cross - section (mm²)		4			4		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.	
Fuse terminal block, without indicator, for mounting on TH 35- 7.5, 15  for fuse cartridge 5x20 and 5x25mm	RFT5	6010201001	25	-	-	-	
Fuse terminal block, with LED for mounting on TH 35- 7.5, 15  for fuse cartridge 5x20 and 5x25 mm	-	-	-	RFT5-LD 24,48 VDC/AC*	6010202001	25	
				RFT5-LD 110,220 VDC/AC*	6010202002	25	
End bracket, for TH 35-7.5, 15  width (mm) Raad recommended	EB/3 10	6020101003	50	EB/3 10	6020101003	50	
End bracket, for TH 35- 7.5, 15  width (mm) Raad recommended	EB/1 9.5	6020101001	50	EB/1 9.5	6020101001	50	
Bridge-comb	JEB10-6 10-pos. JEB3-6 3-pos. JEB2-6 2-pos.	6020506009 6020506002 6020506001	10 50 50	JEB10-6 10-pos. JEB3-6 3-pos. JEB2-6 2-pos.	6020506009 6020506002 6020506001	10 50 50	
max. current (A)	41			41			
Screw driver	0.5x3.0	5010204002	-	0.5x3.0	5010204002	-	
Marking Tags	NS8	For details see Accessories		NS8	For details see Accessories		
Colour							

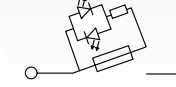
Dimensions (mm)			
Width/Length		8 / 72.5	8 / 72.5
Height, TH 35-7.5/TH 35-15		55.6 / 63.1	55.6 / 63.1
Connection capacity			
Rigid Solid (mm²)		0.5-4	0.5-4
Rigid stranded (mm²)		0.5-4	0.5-4
Flexible (mm²)		0.5-4	0.5-4
American Wire Gauge (AWG)		20-12	20-12
IEC test gauge		A4	A4
Stripping length (mm)		12	12
Clamping screw		M3	M3
Tightening torque (N.m)		0.5	0.5
Insulation material		PA 6.6	PA 6.6

\* Other voltages available upon request

**RDT2.5-CFC**  
width 6 mm  
K4+V4 CE



**RDT2.5-CFCLD**  
width 6 mm



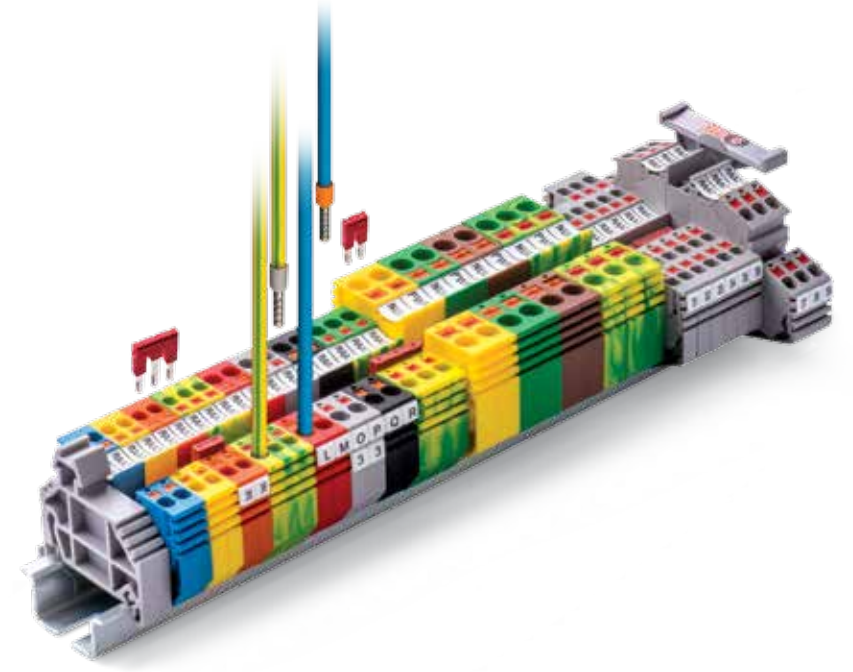
IEC 60947-7-3 rated data		RDT2.5-CFC			RDT2.5-CFCLD		
Voltage (V) / Impulse voltage (kV)		500 / 6			-		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		6.3			6.3		
Cross - section (mm²)		1.5			1.5		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.	
Fuse terminal block, without indicator, for mounting on TH 35- 7.5, 15  for fuse cartridge 5x20 and 5x25mm	RDT2.5-CFC	6010801003	25	-	-	-	
Fuse terminal block, with LED for mounting on TH 35- 7.5, 15  for fuse cartridge 5x20 and 5x25mm	-	-	-	RDT2.5-CFCLD 24,48 VDC/AC*	6010801004	25	
				RDT2.5-CFCLD 110,220 VDC/AC*	6010801005	25	
End bracket, for G 32  TH 35- 7.5, 15  width (mm) Raad recommended	EB/2 10	6020101002	50	EB/2 10	6020101002	50	
Screw driver	0.5x3.0	5010204002	-	0.5x3.0	5010204002	-	
Marking Tags	NS6	For details see Accessories		NS6	For details see Accessories		
Colour							

Dimensions (mm)			
Width/Length		6 / 45.3	6 / 45.3
Height, TH 35-7.5/TH 35-15		66.4 / 73.9	66.8 / 74.4
Connection capacity			
Rigid Solid (mm²)		0.5-4	0.5-4
Rigid stranded (mm²)		0.5-4	0.5-4
Flexible (mm²)		0.5-4	0.5-4
American Wire Gauge (AWG)		20-12	20-12
IEC test gauge		A4	A4
Stripping length (mm)		12	12
Clamping screw		M2.5	M2.5
Tightening torque (N.m)		0.4-0.6	0.4-0.6
Insulation material		PA 6.6	PA 6.6

\* Other Voltages available Upon request



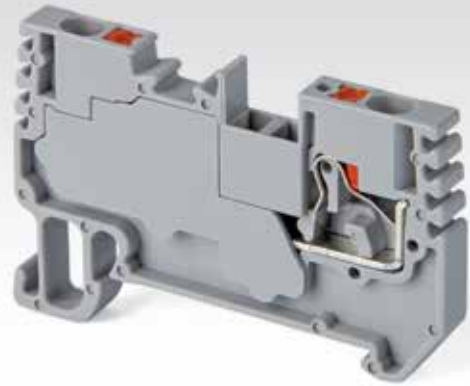
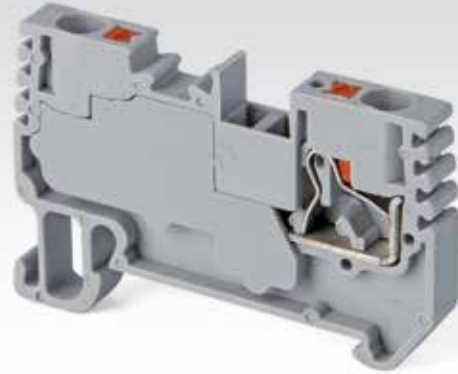
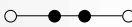
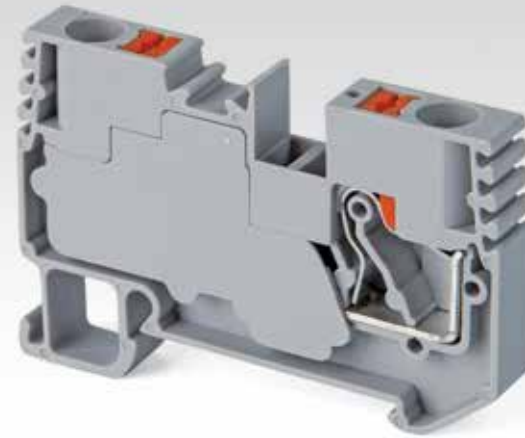
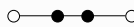
## Push-In Connection Terminal Blocks



Tool-free cable placing technology in Raad push-in terminal blocks, characterizing this type of terminals by the following advantages:

- Direct inserting of solid conductors or any prepared cables with ferrules (no tools needed).
- Easy release of conductors by the plastic actuation lever with using any type of tools without connecting live parts.
- Space-saving design, optimized handling and easy assembling.
- Easy insertion of conductors by a little pushing force.



**RPIT2.5**width 5 mm  
KEMA CE**RPIT4**width 6 mm  
KEMA CE**RPIT6**width 8 mm  
KEMA CE

IEC 60947-7-1 rated data		RPIT2.5			RPIT4		
Voltage (V) / Impulse voltage (kV)		800 / 8			800/8		
Pollution degree/Voltage category/Material group		3/III/I			3/III/I		
Current (A)		24			32		
Cross - section (mm²)		2.5			4		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.	
Push-in connection terminal for mounting on TH 35 - 7.5, 15	RPIT2.5	6011001005	100	RPIT4	6011002005	100	
Bridge screwless	BS 10-2.5 10-pos	6020505009	10	BS 3-4 3-pos	6020505102	50	
	BS 3-2.5 3-pos	6020505002	50	BS 2-4 2-pos	6020505101	50	
	BS 2-2.5 2-pos	6020505001	50				
End bracket, for TH 35 - 7.5, 15 width (mm) Raad recommended	EB/3 10	6020101003	50	EB/3 10	6020101003	50	
End bracket, for TH 35 - 7.5, 15 width (mm) Raad recommended	EB/1 9.5	6020101001	50	EB/1 9.5	6020101001	50	
Marking Tags	NS5	For details see Accessories		NS6	For details see Accessories		
Colour							

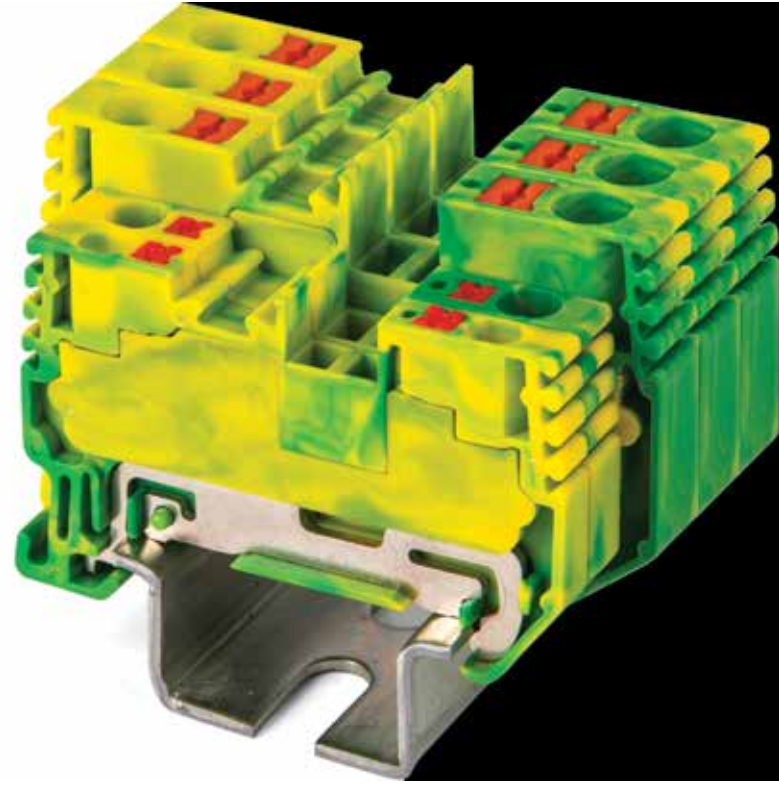
Dimensions (mm)		RPIT2.5	RPIT4
Width/Length		5/54	6/54
Height, TH 35-7.5/TH 35-15		35.7/43.2	35.7/43.2
Connection capacity			
Rigid Solid (mm²)		0.5-2.5	0.5-4
Rigid stranded (mm²)*		0.5-2.5	0.5-4
Flexible (mm²)*		0.5-2.5	1.5-4
American Wire Gauge (AWG)		20-12	20-10
IEC test gauge		A3	A4
Stripping length (mm)		12	12
Insulation material		PA 6.6	PA 6.6

\* Prepare this kind of cable with ferrule.

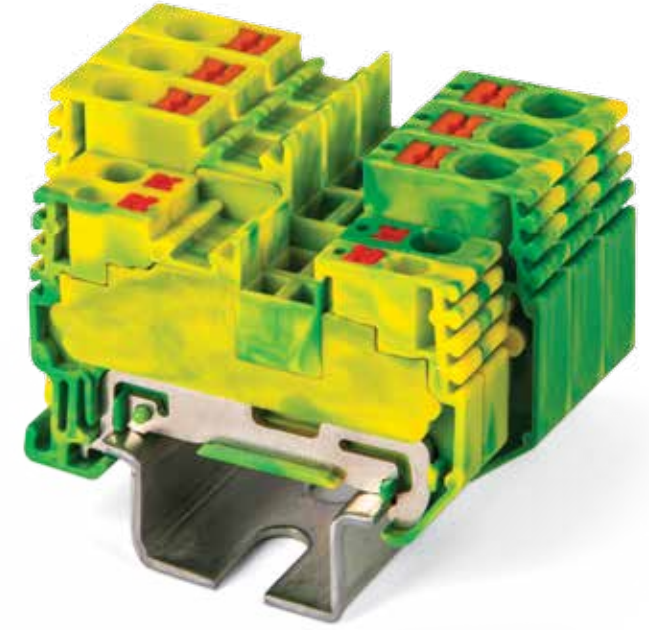
IEC 60947-7-1 rated data		RPIT6		
Voltage (V) / Impulse voltage (kV)		1000 / 8		
Pollution degree/Voltage category/Material group		3/III/I		
Current (A)		41		
Cross - section (mm²)		6		
Description	Type	Ordering No.	Qty.	
Push-in connection terminal for mounting on TH 35 - 7.5, 15	RPIT6	6011003005	50	
Bridge screwless	BS 3-6 3-pos	6020505203	50	
	BS 2-6 2-pos	6020505201	50	
End bracket, for TH 35 - 7.5, 15 width (mm) Raad recommended	EB/3 10	6020101003	50	
End bracket, for TH 35 - 7.5, 15 width (mm) Raad recommended	EB/1 9.5	6020101001	50	
Marking Tags	NS8	For details see Accessories		
Colour				

Dimensions (mm)		RPIT6
Width/Length		8/61.8
Height, G32/TH 35-7.5/TH 35-15		-/41.9/49.4
Connection capacity		
Rigid Solid (mm²)		0.5-6
Rigid stranded (mm²)*		0.5-6
Flexible (mm²)*		1.5-6
American Wire Gauge (AWG)		20-8
IEC test gauge		A5
Stripping length (mm)		12
Insulation material		PA6.6

\* Prepare this kind of cable with ferrule.



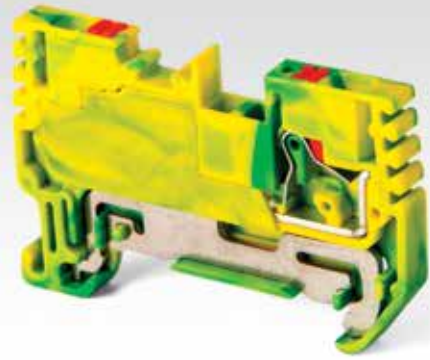
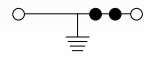
## Earth Push-In Protective Terminal Blocks



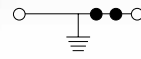
Some of the most practical advantages of using RAAD push-in protective earth terminal blocks have been listed below:

- Significant time and cost savings
- Stainless steel spring continuously providing the necessary contact force between conductor and current carrying part
- Compact construction and high-performance contact technology
- Insulation housing made of high grade fire resistant PA6.6
- Safe and tool-less connecting
- Mountable on TH35 mounting rail
- Easy release of conductor by using any type of tools

**RPET2.5**  
width 5 mm



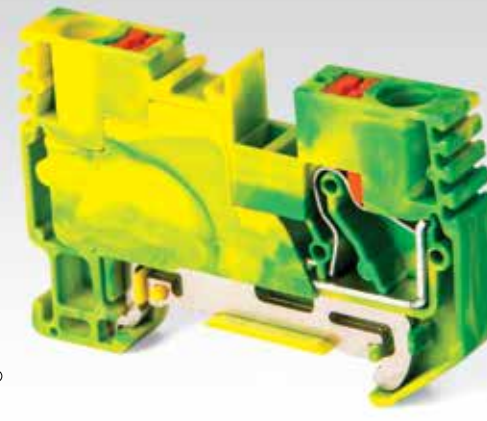
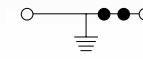
**RPET4**  
width 6 mm



**IEC 60947-7-2 rated data**

	RPET2.5	RPET4
Impulse voltage (kV)	8	8
Pollution degree/Voltage category/Material group	3/III/I	3/III/I
Current (A)	-	-
Cross-section (mm <sup>2</sup> )	2.5	4

**RPET6**  
width 8 mm



**IEC 60947-7-2 rated data**

	RPET6
Impulse voltage (kV)	8
Pollution degree/Voltage category/Material group	3/III/I
Current (A)	-
Cross-section (mm <sup>2</sup> )	6

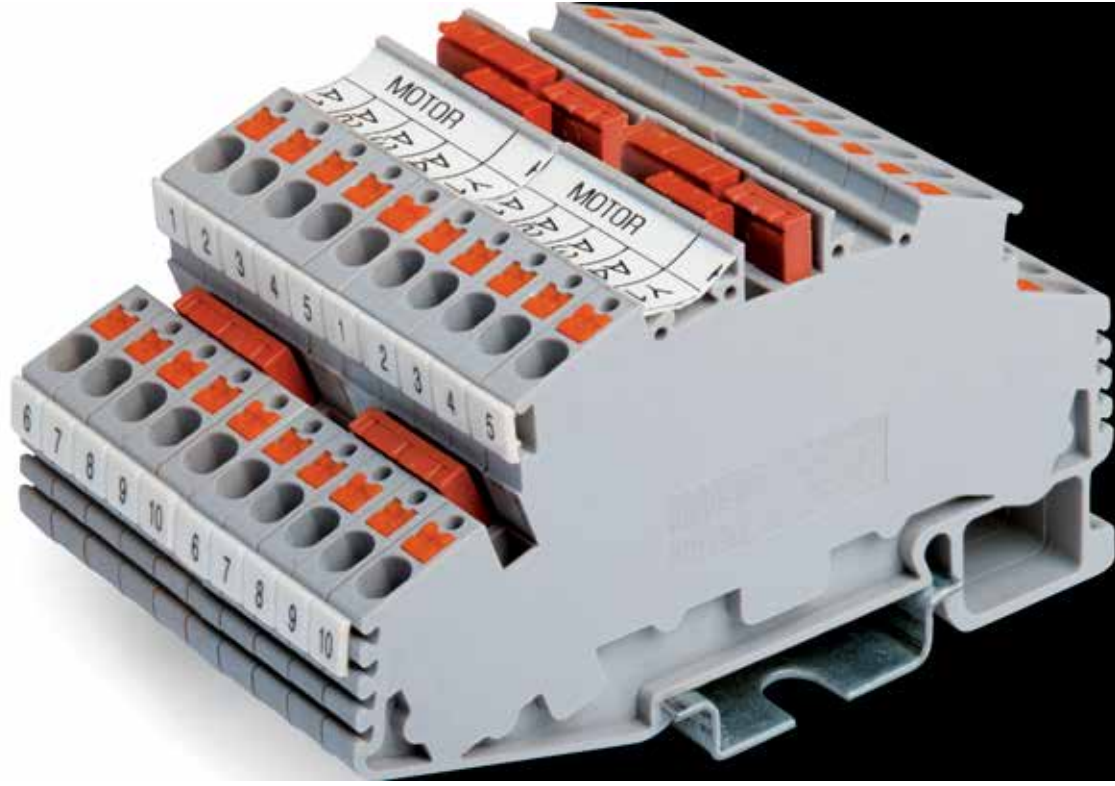
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.
Push-in connection terminal for mounting on TH 35-7.5, 15	RPET2.5	6011201001	50	RPET4	6011201002	50
Bridge screwless	BS 10-2.5 10-pos	6020505009	10	BS 3-4 3-pos	6020505102	50
	BS 3-2.5 3-pos	6020505002	50	BS 2-4 2-pos	6020505101	50
	BS 2-2.5 2-pos	6020505001	50			
End bracket, for TH 35-7.5, 15  width (mm) Raad recommended	EB/3 9.9	6020101003	100	EB/3 9.9	6020101003	100
End bracket, for TH 35-7.5, 15  width (mm) Raad recommended	EB/1 9.5	6020101001	50	EB/1 9.5	6020101001	50
Marking Tags	NS5	For details see Accessories		NS6	For details see Accessories	
<b>Dimensions (mm)</b>						
Width/Length	5/54				6/54	
Height, G32/TH 35-7.5/TH 35-15	-/35.7/43.2				-/35.7/43.2	
<b>Connection capacity</b>						
Rigid Solid (mm <sup>2</sup> )	0.5-2.5				0.5-4	
Rigid stranded (mm <sup>2</sup> )*	0.5-2.5				0.5-4	
Flexible (mm <sup>2</sup> )*	0.5-2.5				1.5-4	
American Wire Gauge (AWG)	20-12				20-10	
IEC test gauge	A3				A4	
Stripping length (mm)	12				12	
Insulation material	PA 6.6				PA 6.6	

\* Prepare this kind of cable with ferrule.

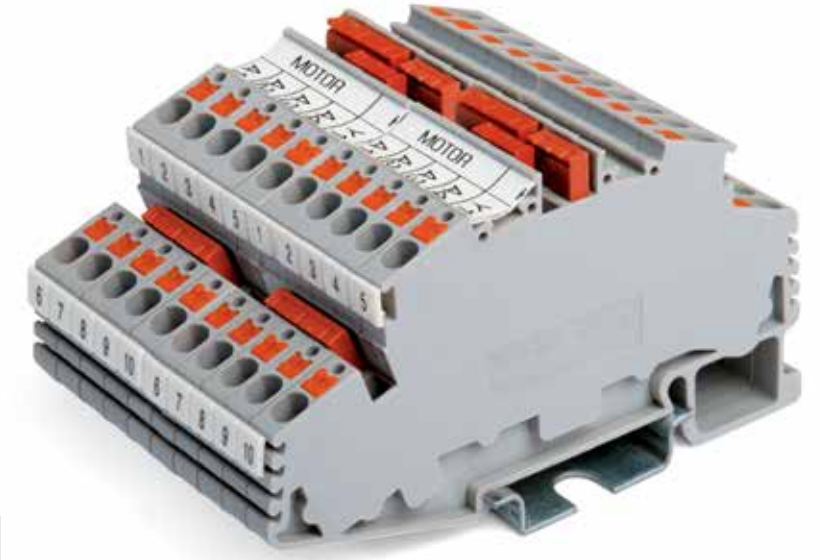
Description	Type	Ordering No.	Qty.
Push-in connection terminal for mounting on TH 35-7.5, 15	RPET6	6011201003	25
Bridge screwless	BS 3-6 3-pos	6020505203	50
	BS 2-6 2-pos	6020505201	50
End bracket, for TH 35-7.5, 15  width (mm) Raad recommended	EB/3 9.9	6020101003	100
End bracket, for TH 35-7.5, 15  width (mm) Raad recommended	EB/1 9.5	6020101001	50
Marking Tags	NS8	For details see Accessories	
<b>Dimensions (mm)</b>			
Width/Length	8/61.8		
Height, G32/TH 35-7.5/TH 35-15	-/41.9/49.4		
<b>Connection capacity</b>			
Rigid Solid (mm <sup>2</sup> )	0.5-6		
Rigid stranded (mm <sup>2</sup> )*	0.5-6		
Flexible (mm <sup>2</sup> )*	1.5-6		
American Wire Gauge (AWG)	20-8		
IEC test gauge	A5		
Stripping length (mm)	12		
Insulation material	PA 6.6		

\* Prepare this kind of cable with ferrule.





## Multi-Level Push-In Terminal Blocks

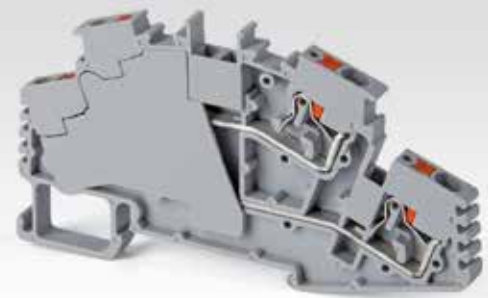
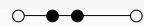


RAAD Multi-Level Push-in Terminal Blocks are manufactured to:

- Have a neat design, which saves you space.
- Be suited, exclusively, for 1 or 3-phase load connection.
- Be easy access and independent levels.
- Resist fire due to material, PA6.6.
- Have a high standard locking mechanism in its clamps.
- Be compatible with small accessories.
- Comply with IEC 60947-7-1.
- Be safe and less consuming due to its tool-less connection.
- Be mounted on TH 35 rails.

**DPIT2.5**

width 5 mm



**IEC 60947-7-1 Rated Data**

	<b>DPIT2.5</b>
Voltage(V)/Impulse voltage (kV)	500/6
Pollution degree/Voltage category/Material group	3/III/1
Current (A)	24
Cross-section (mm <sup>2</sup> )	2.5

Description	Type	Ordering No.	Qty.
Push-in connection terminal for mounting on TH 35-7.5, 15	DPIT2.5	6011101001	50
Bridge screwless	BS 10-2.5 10-pos	6020505009	10
	BS 3-2.5 3-pos	6020505002	50
	BS 2-2.5 2-pos	6020505001	50
End bracket, for TH 35-7.5, 15  width (mm) Raad recommended	EB/3 9.9	6020101003	100
End bracket, for TH 35-7.5, 15  width (mm) Raad recommended	EB/1 9.5	6020101001	50
Partition  Width (mm)	GP 3	6020305005	20
Marking Tags	NS5	For details see Accessories	

Dimensions (mm)	
Width/Length	5.2/88
Height, TH 35-7.5/TH 35-15	50.2/58.1
Connection capacity	
Rigid Solid (mm <sup>2</sup> )	0.5-2.5
Rigid stranded (mm <sup>2</sup> )*	0.5-2.5
Flexible (mm <sup>2</sup> )*	0.5-2.5
American Wire Gauge (AWG)	20-12
IEC test gauge	A3
Stripping length (mm)	12
Insulation material	PA 6.6

\* Prepare this kind of cable with ferrule.

**Multi-Conductor Push-in Terminal Blocks**

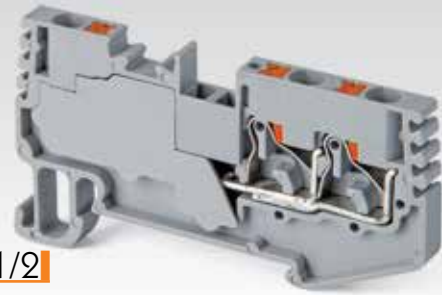


RAAD Multi-Conductor Push-in Terminal Blocks are manufactured to:

- Resist corrosion, due to its high grade material.
- Contain reliable solution for multiple wire connections.
- Meet the specifications and strict requirements of IEC 60947-7-1 standard.
- Offer space-saving alternative for high density wiring.
- Easily snap onto the DIN rail, TH 35, to make a reliable mechanical contact.
- Enable solid and stranded conductors to be connected without any tools.
- Resist fire due to material, PA6.6.
- Comply with a comprehensive range of accessories, marking and bridging.

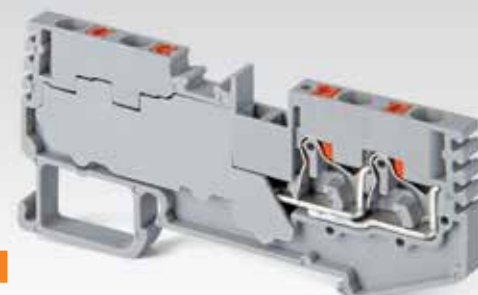
**RPIT2.5-1/2**

width 5 mm




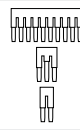



**RPIT2.5-2/2**

width 5 mm



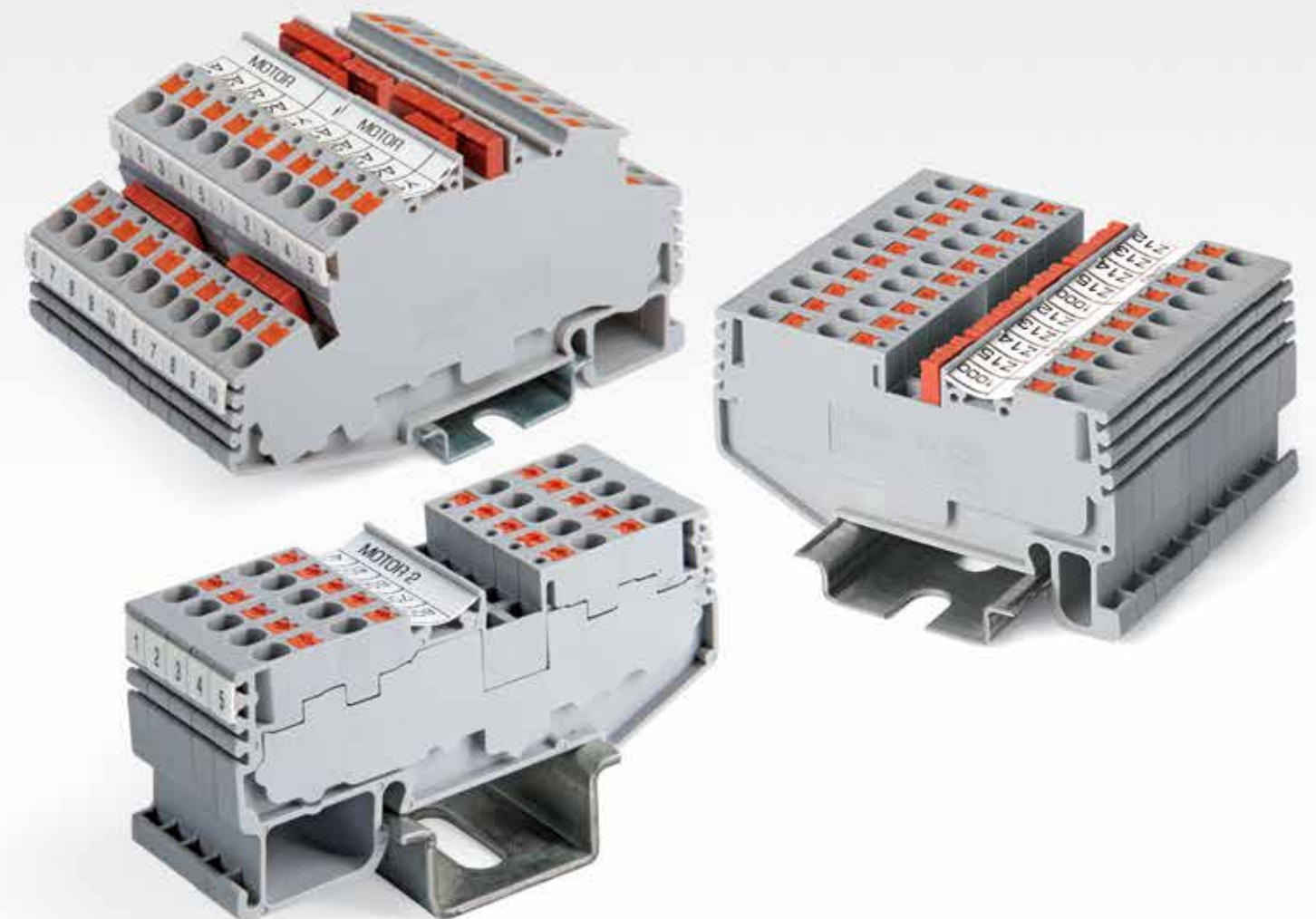
**IEC 60947-7-1 Rated Data**

	<b>RPIT2.5-1/2</b>	<b>RPIT2.5-2/2</b>
Voltage(V)/Impulse voltage (kV)	800/8	800/8
Pollution degree/Voltage category/Material group	3/III/I	3/III/I
Current (A)	24	24
Cross-section (mm²)	2.5	2.5

Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.
Push-in connection terminal for mounting on TH 35-7.5, 15 	PRIT2.5-1/2	6011005005	50	PRIT2.5-2/2	6011006001	50
Bridge screwless 	BS 10-2.5 10-pos	6020505009	10	BS 10-2.5 10-pos	6020505009	10
	BS 3-2.5 3-pos	6020505002	50	BS 3-2.5 3-pos	6020505002	50
	BS 2-2.5 2-pos	6020505001	50	BS 2-2.5 2-pos	6020505001	50
End bracket, for TH 35-7.5, 15  width (mm) Raad recommended	EB/3 9.9	6020101003	100	EB/3 9.9	6020101003	100
End bracket, for TH 35-7.5, 15  width (mm) Raad recommended	EB/1 9.5	6020101001	50	EB/1 9.5	6020101001	50
Marking Tags 	NS5	For details see Accessories		NS5	For details see Accessories	

Dimensions (mm)		
Width/Length	5.2/65	5.2/76.5
Height, TH 35-7.5/TH 35-15	35.4/43.2	35.4/43.2
Connection capacity		
Rigid Solid (mm²)	0.5-2.5	0.5-2.5
Rigid stranded (mm²)*	0.5-2.5	0.5-2.5
Flexible (mm²)*	0.5-2.5	0.5-2.5
American Wire Gauge (AWG)	20-12	20-12
<b>IEC test gauge</b>	<b>A3</b>	<b>A3</b>
Stripping length (mm)	12	12
<b>Insulation material</b>	<b>PA 6.6</b>	<b>PA 6.6</b>

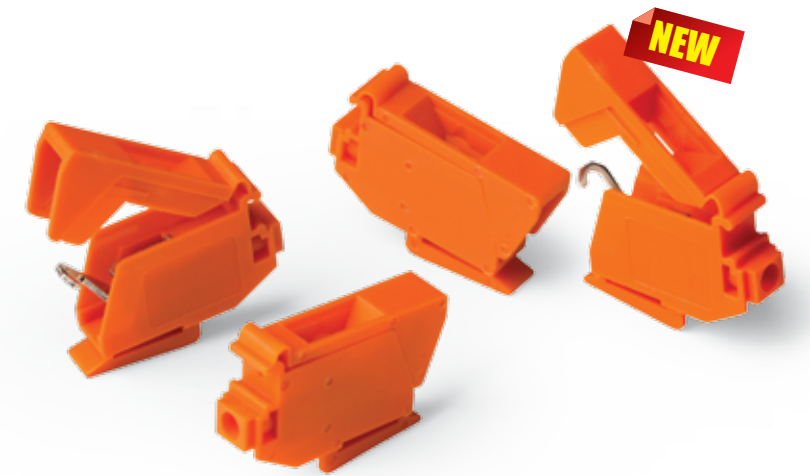
\* Prepare this kind of cable with ferrule.





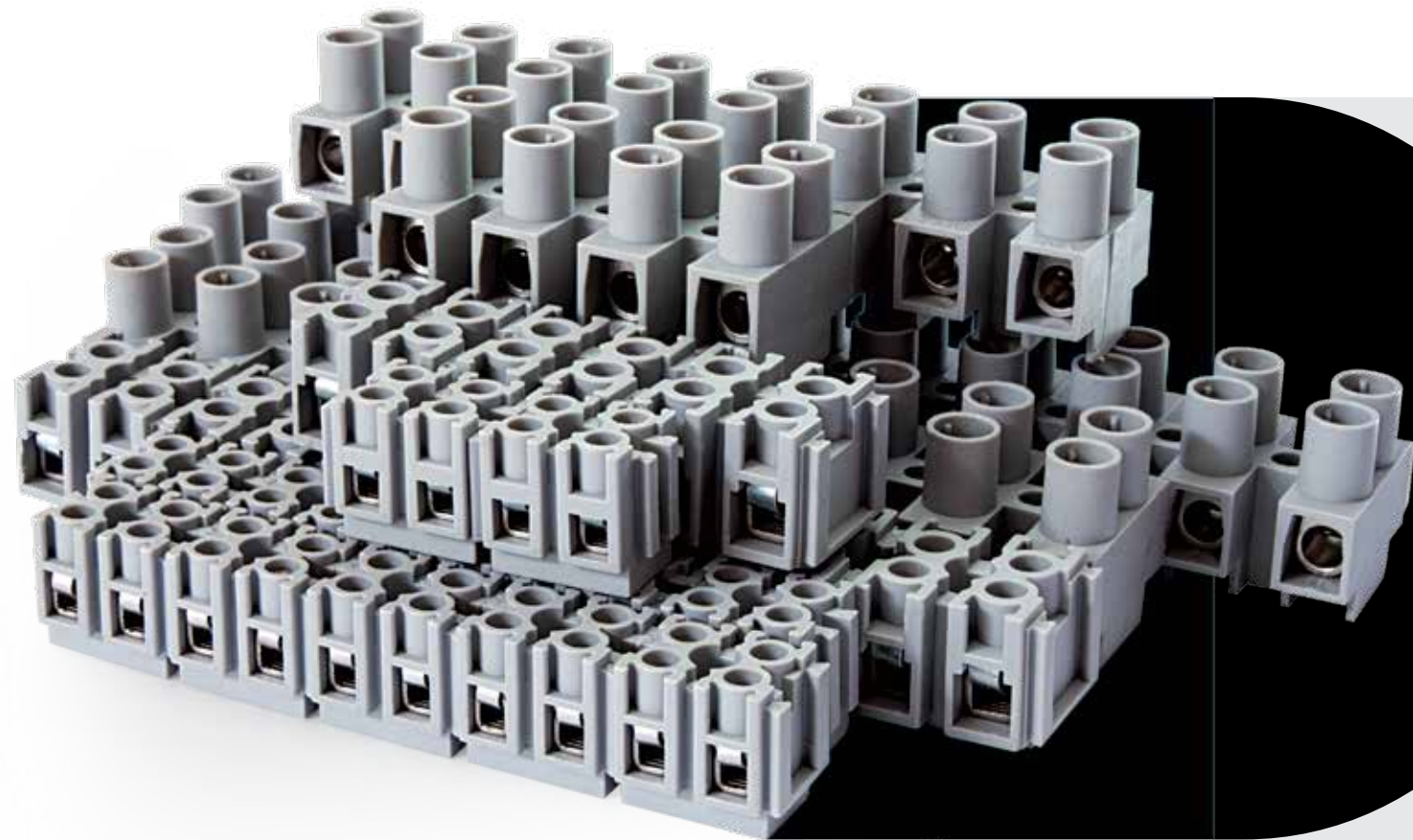


# Transformer Terminal Blocks



- RAAD transformer terminal blocks with nominal cross section 4mm<sup>2</sup> and operating voltage 800V are made in accordance with IEC 60947-7-1.
- Flame proof material PA6.6, flammability class V2.
- Can be fit insulating cover.
- No need for special preparations.
- Easy to mark.

IEC 60947-7-1 rated data		RT4	
Voltage(V)/Impulse voltage (KV)		800 / 6	
Pollution degree/ Voltage category/ Material group		3/III/1	
Current (A)		32	
Cross - section (mm <sup>2</sup> )		4	
Description	Type	Ordering No.	Qty.
Transformer terminal block	RT4	6010499002	50
Marking Tags color	NS6.4	For details see Accessories ●	
Dimensions (mm)			
Width/Length	7.55/21.7		
Connection capacity			
Rigid solid (mm <sup>2</sup> )	0.5-4		
Rigid stranded (mm <sup>2</sup> )	0.5-4		
Flexible (mm <sup>2</sup> )	0.5-4		
American wire gauge (AWG)	20-12		
IEC test gauge			
Striping length (mm)	9		
Clamping screw	M2.5		
Tightening torque (N.m)	0.6		
Insulation material	PA 6.6		



## Strip Series Terminal Blocks



**The Strip terminals can be used for household and similar purposes, with direct mounting.**

- The types RMT2.5 and RMT6 strip terminals have the benefit of double modules, “which can be mounted with any required strips by sliding fitting.”



RMT2.5



RMT6

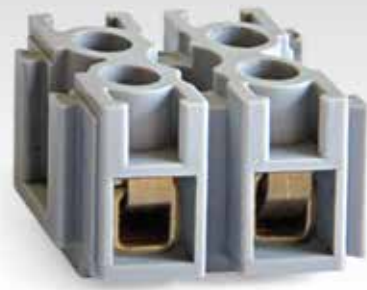
- The similar height for RMT2.5 and RMT6 has distinguished these types of terminals, due to make adjacent terminal blocks in different sizes with unit height, by tightening their bodies together.



RMT2.5







RMT6



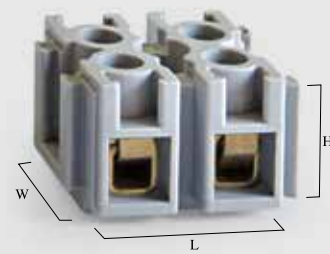
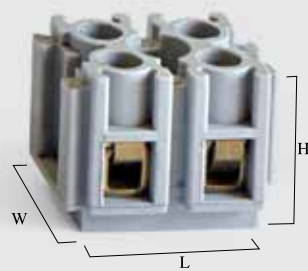
B16



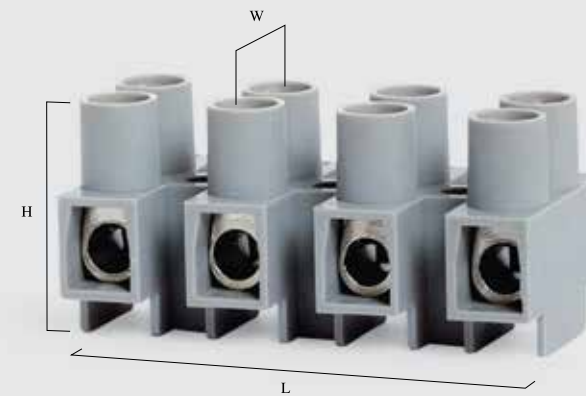
IEC 60947-7-1	RMT2.5			RMT6		
Voltage (V) / Impulse voltage (kV)	500 / 6			800 / 8		
Pollution degree/Voltage category/Material group	3/III/I			3/III/I		
Current (A)	24			41		
Cross - section (mm <sup>2</sup> )	2.5			6		
Description	Type	Ordering No.	Qty.	Type	Ordering No.	Qty.
Terminal block	RMT2.5	6010103001	100	RMT6	6010103002	60
Screw driver 	0.5x3.0	5010204002	-	0.6x3.5	5010204003	-
Marking Tags 	NS6	For details see Accessories		NS6	For details see Accessories	

IEC 60998-2-1	B16		
Voltage (V) / Impulse voltage (kV)	400 / 6		
Pollution degree/Voltage category/Material group	3/III/I		
Current (A)	76		
Cross - section (mm <sup>2</sup> )	16		
Description	Type	Ordering No.	Qty.
Terminal block	B16/12	6010102008	8
	B16/10	6010102007	16
	B16/8	6010102006	24
	B16/6	6010102005	30
	B16/5	6010102004	32
	B16/4	6010102003	48
	B16/3	6010102002	32
B16/2	6010102001	96	
Screw driver 	1.0x5.5	5010204004	-
Marking Tags 	-	-	-

Connection capacity	RMT2.5	RMT6
Rigid Solid (mm <sup>2</sup> )	0.5-4	0.5-10
Rigid stranded (mm <sup>2</sup> )	0.5-4	0.5-10
Flexible (mm <sup>2</sup> )	0.5-2.5	0.5-6
American Wire Gauge (AWG)	20-12	20-8
IEC test gauge	A3	A5
Stripping length (mm)	10	12
Clamping screw/Tightening torque (N.m)	M2.5 / 0.4-0.6	M3.5 / 0.8-1.2
Insulation material	PA 6.6	PA 6.6
Dimensions (W/H/L) (mm)	14.7/17.8/21.4	21/17.8/25.5



Connection capacity	B16
Rigid Solid (mm <sup>2</sup> )	0.5-16
Rigid stranded (mm <sup>2</sup> )	0.5-16
Flexible (mm <sup>2</sup> )	0.5-10
American Wire Gauge (AWG)	6-20
IEC test gauge	A5
Stripping length (mm)	8.5
Clamping screw/Tightening torque (N.m)	M5/2
Insulation material	PA6.6
Dimensions (W/H/L) (mm)	15/26.4/26.4







## EX Series Terminal Blocks

### Terminal blocks for Potentially Explosive Atmosphere and Hazardous Location (ATEX-Directive 94/9/EC).

Now, Raad Terminal Blocks can be used in potentially explosive environments.

To assure such capability, various tests, namely as corrosion test, mechanical test and vibration test as well as ordinary tests are conducted on the terminal blocks.

All in all, IEC 60947-7-1, IEC 60947-7-2 and IEC 60947-7-3 standards pinpoint various mechanical, electrical and thermal requirements. Compliance with the mentioned standards is certified by an authorized certification body, granting product certificate.

Further to these standards, requirements of EN 60079-0, EN 60079-7, EN50281-1-1 or IEC 61241-1 standards as well as ATEX-Directive 94/9/EC are taken into consideration by an EU ATEX Notified Body in order to assure products capability to be used in potentially explosive environments.

These terminal blocks, were subjected to shock and vibration tests in accordance with the standards IEC/EN 60068-2-6 and IEC/EN 60068-2-27 respectively, carried out by TUV product service.

Consequently, the obtained certificates are "EC-TYPE Examination Certificate" on Products and "Production Quality Assurance Notification" on quality management system, proving the fact that the products can be applied in potentially explosive environments.

In ATEX-Directive 94/9/EC certificate, terminal block belongs to components category, meaning that they must be applied in approved connection boxes for type of protection "e", increased safety, having no need to be printed with CE.

# Ex Marking



## II2 GD Ex e IIC Gb

- II2 Equipment group (II) and category (2)
- GD Type of explosive atmosphere
  - G-Gas vapor or mist
  - D-Dust
- Ex Ex-Explosion protection
  - e Increased safety
- IIC Electrical equipment group/a typical gas is hydrogen
- Gb Equipment protection level
- 0344 Notified body identification number
- KEMA Notified body
- 04ATEX2265 U Certification number
- ATEX Conformity with 94/9/EC
- U Component
- 400V (Example) Nominal voltage
- 4mm<sup>2</sup> (Example) Nominal cross-section

### Instruction for safe installation and assembling

The Raad Ex-terminal blocks are mountable on EN 50022, EN 50035, IEC60715, G32, TH35-7.5 and TH35-15 mounting rails.

When using Ex terminal blocks and accessories, the attention should be drawn towards clearances and creepage that have to be met.

When cross-connections or bridges are used, a partition plate is necessary between connections as well as at the beginning and end of each connection.

On the other hand, equipotential zones that were made due to applying cross-connections must be separated by means of partition plates.

### Intended area of use and operation conditions

The ATEX Directive 94/9/EC ANNEX I defines levels of protection for various categories of equipment as follows:

Level of Protection	Category		Performance of Protection	Conditions of Operation
	Group I	Group II		
Very High	M1		Two independent means of protection or safe even when two faults occur independently of each other	Equipment remains energized and functioning when explosive atmosphere present
Very High		1	Two independent means of protection or safe even when two faults occur independently of each other	Equipment remains energized and functioning in Zones 0,1,2 (G) and /or 20,21,22 (D)
High	M2		Suitable for normal operation and severe operating conditions	Equipment de-energized when explosive atmosphere present
High		2	Suitable for normal operation and frequently occurring disturbances or equipment where faults are normally taken into account	Equipment remains energized and functioning in Zones 1,2 (G) and /or 21,22 (D)
Normal		3	Suitable for normal operation	Equipment remains energized and functioning in Zones 2(G) and/or 22(D)

Depending on the maximum surface temperature of the equipment, the electrical equipment of group II is limited in temperature classes T1 up to T6.

#### Classification of maximum surface temperatures for group II electrical apparatus.

Temperature Class	Maximum Surface Temperature(°C)
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85



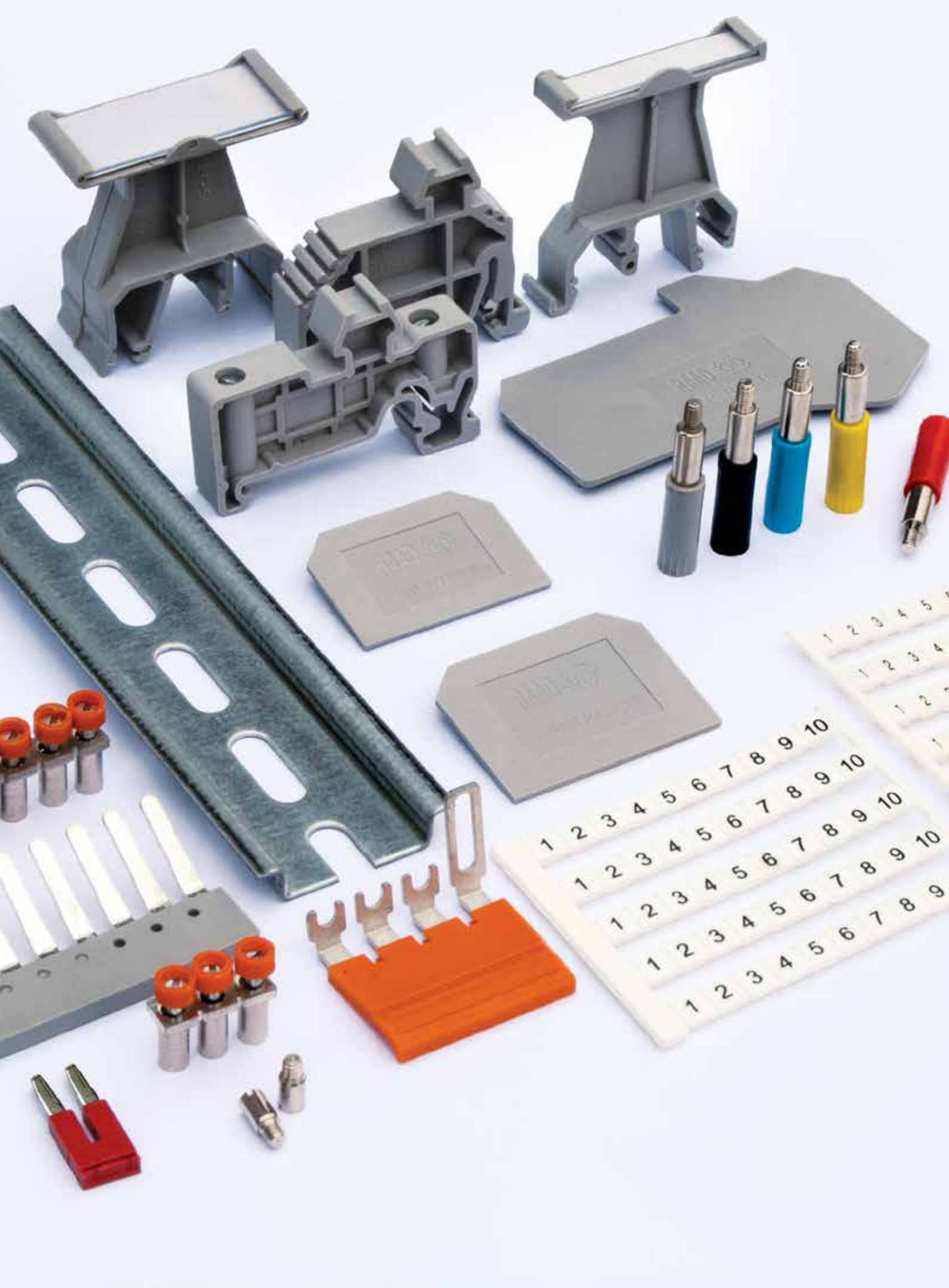
Electrical equipment shall normally be designed for use in the operating temperature range between -40°C and +80°C. If the real ambient temperature is higher, the permitted operating current must be reduced accordingly.

Raad terminal blocks for the type of protection-increased safety "e" are generally chased in T6. When using RAAD terminal blocks in electrical apparatus of temperature classes T1 up to T5 the highest temperature of the insulating parts shall not exceed 85°C.

### Characteristics of tools which may be used with the equipment

All Raad Ex-screw terminal blocks should be used with a proper universal screw driver or allen wrench. No special tool is required.





## Terminal Block Accessories

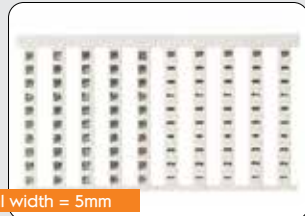
- **Marking System**
- **End Plates and Partitions**
- **Cross-Connections**
- **Test Accessories**
- **End Brackets**



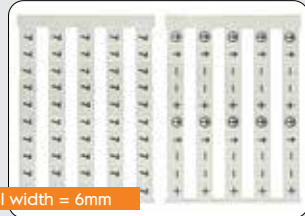


# Marking System

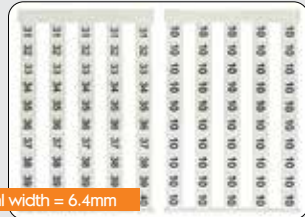
## Marking Tags



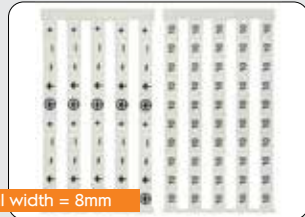
NS5 Terminal width = 5mm



NS6 Terminal width = 6mm



NS6.4 Terminal width = 6.4mm



NS8 Terminal width = 8mm



NS10 Terminal width = 10mm

### The NS type Marking tags

This type of labeling meets the advantage of easy and quick handling. The NS sheets consist of white polyamide with black printings. The sheets are labeled horizontally with maximum 3 characters, easy to read and high-contrast. The hot impressed black printings are absolutely wiping resistant. One NS sheet consists of 5 strips, includes 10 single tags that can be simply pushed into the label slots of the terminal blocks. The NS sheets can be divided at any point and can be manually labeled with ease.

### Size

The push-on tags of NS marking system can be requested in any of the following sizes with or without printed characters.

- 1) NS5, used for terminal block width 5 mm.
- 2) NS6, used for terminal block width 6 mm.
- 3) NS6.4, used for terminal block width 6.4 mm.
- 4) NS8, used for terminal block width 8 mm.
- 5) NS10, used for terminal blocks width 10mm or more.

NS5	NS6	NS6.4	NS8	NS10
RTS2.5	RTP2.5	RTP4	RTP6	RTP10
RPIT2.5	RTP2.5-H	RET4	RET6	RET10
RPET2.5	RET2.5	DRTP4	RST6	RTP16
DPIT2.5	DRTP2.5/4	TRTP4	RIT6	RET16
RPIT2.5-2/2	DRTP2.5/4-L	RDT4	RSTT6	RTP25
RPIT2.5-1/2	RDT2.5-C	RDT4-TS	RSTU6	RTP35
	RDT2.5-CTS	RDT4-DI	RSTP6	RET35
	RDT2.5-CDC	RDT4-RI	RSTN6	RTP50
	RDT2.5-CRC		RFT5	RTP70
	RDT2.5-CFC		RFT5-LD	RTP95
	RDT2.5-CFCLD		RTS	RTP150
	RTS4		RPIT6	RTB70
	RPIT4		RPET6	RTB95
	RPET4			RTB150
	RMT2.5			RTB240
	RMT6			

### Packing

The NS sheets are delivered in plastic bags of 10 sheets=50 strips=500 single tags.

NS Special printings  
Special printings can be offered on request.

### Group Marking Carriers

Description	Type	Ordering No.	Qty.	Material	Dimensions (W/H/L)(mm)
Group marking carrier, for mounting on TH 35- 7.5, 15 width (mm)	LB/1 19.5	6020102001	50	PA6.6	19.5 / 47 / 44.4
Group marking carrier, for mounting on TH 35- 7.5, 15 width (mm)	LB/2 9.5	6020102002	50	PA6.6	9.5 / 47.1 / 43.7
Group marking carrier, for mounting on EB/1 width (mm)	ELB/1 9.5	6020102003	50	PA6.6	9.5 / 22.6 / 43.7

Type	Size	Ordering No.	Qty.	Type	Size	Ordering No.	Qty.
(111...)	NS6	6030300002	10	(999...)	NS6	6030300025	10
	NS6.4	6030400002	10		NS6.4	6030400034	10
(922...)	NS8	6030500002	10	(1010...)	NS8	6030500022	10
	NS6.4	6030400006	10		NS6	6030300027	10
	NS8	6030500006	10		NS6.4	6030400038	10
(333...)	NS6	6030300010	10	(0...9)	NS8	6030500026	10
	NS6.4	6030400010	10		NS6	6030300026	10
	NS8	6030500010	10		NS6.4	6030400035	10
(444...)	NS6	6030300014	10	(1...10)	NS8	6030500023	10
	NS6.4	6030400014	10		NS5	6030200008	10
	NS8	6030500014	10		NS6	6030300031	10
(555...)	NS6	6030300018	10	(11...15)	NS6.4	6030400042	10
	NS6.4	6030400018	10		NS8	6030500042	10
	NS8	6030500017	10		NS6	6030300032	10
(666...)	NS6	6030300021	10	(11...15)	NS6.4	6030400043	10
	NS6.4	6030400022	10		NS8	6030500031	10
	NS8	6030500018	10		(11...20)	NS5	6030200009
NS6	6030300022	10	NS6	6030300052		10	
NS6.4	6030400026	10	NS6.4	6030400046		10	
(777...)	NS8	6030500019	10	(11...20)	NS8	6030500065	10
	NS6	6030300023	10				
	NS6.4	6030400030	10				
(888...)	NS8	6030500020	10				

Type	Size	Ordering No.	Qty.
(16...20)	NS6	6030300033	10
	NS6.4	6030400044	10
	NS8	6030500032	10
(21...25)	NS6	6030300035	10
	NS6.4	6030400048	10
(51...100)	NS8	6030500036	10
	NS5	6030200016	10
	NS6	6030300036	10
(96...30)	NS6.4	6030400109	10
	NS8	6030500038	10
	NS6	6030300037	10
(1...50)	NS6.4	6030400052	10
	NS8	6030500040	10
	NS5	6030200015	10
	NS6	6030300038	10
(101...150)	NS6.4	6030400054	10
	NS8	6030500030	10
	NS5	6030200017	10
	NS6	6030300039	10
(31...35)	NS6.4	6030400140	10
	NS8	6030500119	10
	NS6	6030300040	10
(10...500)	NS6.4	6030400158	10
	NS8	6030500048	10
	NS6	6030300048	10
(36...40)	NS6.4	6030400172	10
	NS8	6030500061	10
	NS6	6030300049	10
(41...45)	NS6.4	6030400172	10
	NS8	6030500063	10
	NS6	6030300051	10
(46...50)	NS6.4	6030400076	10
	NS8	6030500064	10
	NS6	6030300053	10
(51...55)	NS6.4	6030400079	10
	NS8	6030500066	10
(56...60)	NS6	6030300054	10
	NS6.4	6030400080	10
	NS8	6030500067	10
(61...65)	NS6	6030300055	10
	NS6.4	6030400081	10
	NS8	6030500068	10

Type	Size	Ordering No.	Qty.
(21...30)	NS5	6030200010	10
	NS6	6030300056	10
	NS6.4	6030400082	10
	NS8	6030500069	10
(66...70)	NS6	6030300057	10
	NS6.4	6030400083	10
	NS8	6030500070	10
(71...75)	NS6	6030300058	10
	NS6.4	6030400084	10
	NS8	6030500071	10
(76...80)	NS6	6030300059	10
	NS6.4	6030400085	10
	NS8	6030500072	10
(31...40)	NS5	6030200011	10
	NS6	6030300060	10
	NS6.4	6030400086	10
	NS8	6030500073	10
(81...85)	NS6	6030300061	10
	NS6.4	6030400087	10
	NS8	6030500074	10
(86...90)	NS6	6030300062	10
	NS6.4	6030400088	10
	NS8	6030500075	10
(91...95)	NS6	6030300063	10
	NS6.4	6030400089	10
	NS8	6030500076	10
(41...50)	NS5	6030200012	10
	NS6	6030300064	10
	NS6.4	6030400058	10
(96...100)	NS8	6030500077	10
	NS6	6030300065	10
	NS6.4	6030400091	10
(151...200)	NS8	6030500078	10
	NS5	6030200018	10
	NS6	6030300100	10
(51...55)	NS6.4	6030400111	10
	NS8	6030500120	10
	NS6	6030300053	10
(91...100)	NS6.4	6030400079	10
	NS8	6030500066	10
	NS6	6030300073	10
(131...140)	NS6.4	6030400060	10
	NS8	6030500139	10
	NS6	6030300069	10
(131...140)	NS6.4	6030400064	10
	NS8	6030500052	10

Type	Size	Ordering No.	Qty.
(141...150)	NS6	6030300077	10
	NS6.4	6030400065	10
	NS8	6030500053	10
(301...350)	NS6	6030300087	10
	NS6.4	6030400116	10
(351...400)	NS8	6030500016	10
	NS6	6030300080	10
	NS6.4	6030400117	10
(71...80)	NS8	6030500087	10
	NS6	6030300119	10
	NS6.4	6030400057	10
(51...60)	NS8	6030500131	10
	NS5	6030200013	10
	NS6	6030300117	10
	NS6.4	6030400055	10
(61...70)	NS8	6030500126	10
	NS5	6030200014	10
	NS6	6030300118	10
(251...300)	NS6.4	6030400056	10
	NS8	6030500130	10
	NS5	6030200020	10
	NS6	6030300086	10
(201...250)	NS6.4	6030400115	10
	NS8	6030500024	10
	NS5	6030200019	10
(111...120)	NS6	6030300085	10
	NS6.4	6030400114	10
	NS8	6030500121	10
(121...130)	NS6	60330300066	10
	NS6.4	6030400062	10
	NS8	6030500050	10
(101...110)	NS6	6030300067	10
	NS6.4	6030400063	10
	NS8	6030500051	10
(401...450)	NS6	6030300091	10
	NS6.4	6030400061	10
	NS8	6030500049	10
(451...500)	NS6	6030300081	10
	NS6.4	6030400118	10
	NS8	6030500088	10
(81...90)	NS6	6030300090	10
	NS6.4	6030400119	10
	NS8	6030500133	10
(81...90)	NS6	6030300121	10
	NS6.4	6030400059	10
	NS8	6030500135	10

Type	Size	Ordering No.	Qty.
(LPE...)	NS6	6030300092	10
	NS6.4	6030400121	10
	NS8	6030500099	10
(AB...Z)	NS6	6030300046	10
	NS6.4	6030400128	10
	NS8	6030500107	10
(UVWN...)	NS6	6030300047	10
	NS6.4	6030400070	10
	NS8	6030500058	10
UNPRINTED	NS6	6030300001	10
	NS6.4	6030400001	10
	NS8	6030500001	10
(UVW...)	NS6	6030300094	10
	NS6.4	6030400132	10
	NS8	6030500093	10
(RSTN...)	NS6	6030300034	10
	NS6.4	6030400113	10
	NS8	6030500092	10
(R...)	NS6	6030300131	10
	NS6.4	6030400188	10
	NS8	6030500117	10
(Blank)	NS6	6030300001	10
	NS6.4	6030400001	10
	NS8	6030500001	10
(N...)	NS6	6030300128	10
	NS6.4	6030400158	10
	NS8	6030500153	10
(Y...)	NS6	6030300130	10
	NS6.4	6030400187	10
	NS8	6030500155	10
(L...)	NS6	6030300127	10
	NS6.4	6030400184	10
	NS8	6030500152	10
(1V...)	NS6	6030300115	10
	NS6.4	6030400134	10
	NS8	6030500113	10
(2V...)	NS6	6030300125	10
	NS6.4	6030400182	10
	NS8	6030500150	10
(3V...)	NS6	6030300129	10
	NS6.4	6030400186	10
	NS8	6030500154	10
(BB...)	NS6	6030300107	10
	NS6.4	6030400358	10
	NS8	6030500114	10

Type	Size	Ordering No.	Qty.
(UVW...MP)	NS6	6030300070	10
	NS6.4	6030400017	10
	NS8	6030500094	10
(1W...)	NS6	6030300116	10
	NS6.4	6030400137	10
	NS8	6030500116	10
(2W...)	NS6	6030300120	10
	NS6.4	6030400138	10
	NS8	6030500141	10
(3W...)	NS6	6030300124	10
	NS6.4	6030400181	10
	NS8	6030500149	10
(.....)	NS5	6030200001	10
	NS6	6030300071	10
	NS6.4	6030400097	10
	NS8	6030500080	10
(+++...)	NS6	6030300068	10
	NS6.4	6030400074	10
	NS8	6030500079	10
(1U...)	NS6	6030300101	10
	NS6.4	6030400129	10
	NS8	6030500021	10
(2U...)	NS6	6030300112	10
	NS6.4	6030400130	10
	NS8	6030500109	10
(3U...)	NS6	6030300126	10
	NS6.4	6030400183	10
	NS8	6030500151	10
(AB...X)	NS6	6030300045	10
	NS6.4	6030400263	10
	NS8	6030500107	10
(...)	NS10	6030600001	10
(Earth)	NS10	6030600002	10
(MP...u)	NS10	6030600003	10
(R...)	NS10	6030600005	10
(V...WI)	NS10	6030600004	10
(1...25)	NS10	6030600006	10
(26...50)	NS10	6030600007	10
(1...5)	NS10	6030600008	10
(6...10)	NS10	6030600009	10
(11...15)	NS10	6030600010	10
(16...20)	NS10	6030600011	10
(21...25)	NS10	6030600012	10
(26...30)	NS10	6030600013	10
(31...35)	NS10	6030600014	10

Type	Size	Ordering No.	Qty.
(36...40)	NS10	6030600015	10
(41...45)	NS10	6030600016	10
(46...50)	NS10	6030600017	10
(51...75)	NS10	6030600018	10
(76...100)	NS10	6030600019	10
(111...)	NS10	6030600020	10
(222...)	NS10	6030600021	10
(333...)	NS10	6030600022	10
(444...)	NS10	6030600023	10
(555...)	NS10	6030600024	10
(666...)	NS10	6030600025	10
(777...)	NS10	6030600026	10
(888...)	NS10	6030600027	10
(999...)	NS10	6030600028	10
(101010...)	NS10	6030600029	10
(MP...ER)	NS10	6030600030	10
(RSTN)	NS10	6030600031	10
(NNN...)	NS10	6030600033	10
(R...U)	NS10	6030600034	10
(d1...d2)	NS10	6030600035	10
(1S1...1S6)	NS10	6030600036	10
(2S1...2S6)	NS10	6030600037	10
(3S1...3S6)	NS10	6030600038	10
(4S1...4S6)	NS10	6030600039	10
(5S1...5S6)	NS10	6030600040	10
(6S1...6S6)	NS10	6030600041	10
(7S1...7S6)	NS10	6030600042	10
(8S1...8S6)	NS10	6030600043	10
(Ha.Hn...)	NS10	6030600044	10
(1a...2n)	NS10	6030600046	10
(B1...B11)	NS10	6030600047	10
(a...n)	NS10	6030600048	10
(1a...3n)	NS10	6030600049	10
(a...dn)	NS10	6030600050	10
(A11...A23)	NS10	6030600051	10
(9S1...9S6)	NS10	6030600052	10
(A11-A12-A13...)	NS10	6030600053	10
(a.n.a.n...)	NS10	6030600054	10
(EARTH...B1)	NS10	6030600055	10
(EARTH...B2)	NS10	6030600056	10
(U.V...E)	NS10	6030600057	10
(1a1.1a2...2n)	NS10	6030600058	10
(1a.1n...dn)	NS10	6030600059	10
(A11.A12...A33)	NS10	6030600060	10
(as1...n)	NS10	6030600062	10

Type	Size	Ordering No.	Qty.
(R.....)	NS10	6030600064	10
(S.....)	NS10	6030600065	10
(T.....)	NS10	6030600066	10
(U.....)	NS10	6030600067	10
(V.....)	NS10	6030600068	10
(W.....)	NS10	6030600069	10
(R1.....)	NS10	6030600070	10
(R2.....)	NS10	6030600071	10
(L1.....)	NS10	6030600072	10
(L2.....)	NS10	6030600073	10
(L3.....)	NS10	6030600074	10
(O.....)	NS10	6030600075	10
(N.....)	NS10	6030600033	10
(E.....)	NS10	6030600076	10
(RL.....)	NS10	6030600077	10
(MP1...W)	NS10	6030600078	10
(RST...S)	NS10	6030600079	10
(12...C2)	NS5	6030200002	10
(MPD...11)	NS5	6030200003	10
(DC6...BT24)	NS5	6030200004	10
(RS1...DC5)	NS5	6030200005	10
(ALM...JU2)	NS5	6030200006	10
(WL...MP)	NS5	6030200007	10
(RS1...DC2)	NS5	6030200021	10
(DC3...ER)	NS5	6030200022	10
(ALM...72)	NS5	6030200023	10



# End Plates and Partitions



(P)

## End Plate (EP)

The last terminal in a row must, in most cases, be covered with an end plate. Within one terminal strip, composed of various terminal sizes, end plates should also be interposed. The end plate external dimensions correspond to the core dimensions of the attendant terminal. The end plates are held by an end bracket.



(SP)

## Partition (P)

Depending upon the operating voltage, a partition must be fitted next to cross-connection groups, so that the necessary clearance and creepage distance can be maintained.



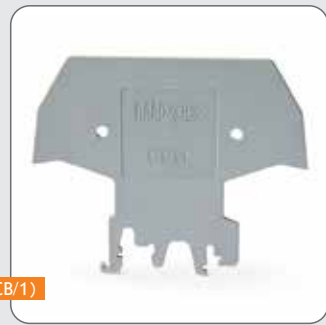
(GP)

## Small Partition (SP)

Space-saving partitions can be post-fitted between cross-connections for terminal blocks.

## General Partition (GP)

These types of partitions serve for RTP16-50.



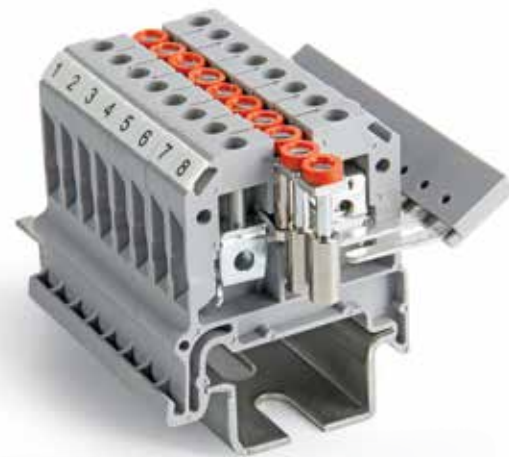
(CB/1)

## Cover Base (CB\1)

To safety from finger touch of live parts for electrical components, type of insulated covers can be used and mounted on CB\1.

Type	Ordering No.	Application	Material	Qty.
P-RTP2.5	6020301005	RTP2.5	PA6.6	100
P-RTP4, 6, 10	6020301105	RTP2.5-H, RTP4, 6, 10	PA6.6	50
SP-2.5-10	6020304001	RTP2.5-10	PA6.6	100
SP-D4	6020304004	DRTP4	PA6.6	100
GP	6020305005	RTP16-50	PA6.6	20
EP-RDT4	6020204101	RDT4-R1, RDT4-D1, RDT4-TS, RDT4	PA6.6	100
EP-RTP2.5	6020202005	RTP2.5	PA6.6	100
EP-RTP4, 6, 10	6020202105	RTP2.5-H, RTP4, 6, 10	PA6.6	50
EP1-DRTP4	6020203002	DRTP4	PA6.6	20
EP2-DRTP4	6020203003	DRTP4	PA6.6	20
EP3-DRTP4	6020203004	DRTP4	PA6.6	20
P-DRTP4	6020302001	DRTP4	PA6.6	20
EP-RSTT6	6020201003	RSTT6, RSTU6	PA6.6	50
EP-RSTP6	6020201004	RSTP6	PA6.6	50
CB\1	6020802001	*	PA6.6	10
P-RTS2.5, 4, 6	6020303001	RTS2.5, 4, 6 -RPIT 2.5, 4, 6	PA6.6	100
EP-RTS2.5	6020205001	RTS2.5	PA6.6	100
EP-RTS4	6020205101	RTS4	PA6.6	100
EP-RTS6	6020205201	RTS6	PA6.6	50
EP-RSTN6	6020201006	RSTN6	PA6.6	50
EP-DRTP2.5/4	6020203001	DRTP2.5/4, DRTP2.5/4-L	PA6.6	20

\* Applicable for all terminal blocks with exception RTP95,150, RST6, RTT6.



## Cross-Connections



For cross-connection bar, connection sleeves and screws are already captively mounted with the corresponding number of poles. The cross-connection then only requires inserting in the individual terminal row when fitting.

The cross-connection unit is supplied in 2, 3 and 10 poles.

Easy to cut the insulated body of terminal blocks by nose plier or cutting tools in order to use rapidly jumping systems, is distinguished Raad terminal blocks. This method can be used for types: RST6, RSTT6, TRTP4,...

### Cross-Connection Bar (CC)

To handle cross-connection of several terminal blocks, with the same potential, copper cross-connection bars are used. These cross-connection bars supplied in 2, 3 and 10 poles; and their length are equal to the individual terminal width. The cross-connection bar is electrically joined through a connection sleeve to the terminal block busbar.

### Connection Sleeve and Screw

The length of the brass connection sleeve is matched to the individual terminal. In order to be able to connect the cross-connection bar and the connection sleeve to a terminal block busbar, a brass screw is applied. The cross-connections are designed so that where a terminal does not need any cross-connection; it is possible to remove the screw and its sleeve, thus no cross-connection occurs in the terminal.

### Bridge Comb (BC)

This type of cross connection is consisted of plastic (PA6.6) and copper parts and meet the best connection between the same voltage level of various terminal blocks, needing no special tools. This type of cross-connection in 2, 3, 10 branches/poles are available based on request.

### Bridge Screwless (BS)

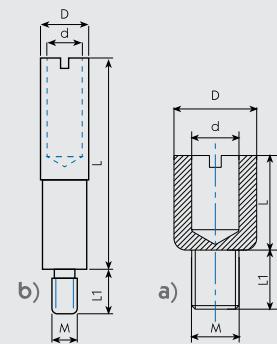
Confidence in connection attained by using copper for metal parts of BS. This type of jumpers can be used for Raad screwless terminal block types: RTS, RPIT.

Type	Max.Current (A)	Ordering No.	Application	Qty.
BC10-4	32	6020504109	RTP4, RDT4	10
BC3-4		6020504102		50
BC2-4		6020504101		50
BC10-D4	32	6020504209	DRTP4, TRTP4	10
BC3-D4		6020504202		50
BC2-D4		6020504201		50
BS 10-2.5	24	6020505009	RPIT2.5, RTS2.5	10
BS 3-2.5		6020505002		50
BS 2-2.5		6020505001		50
BS 3-4	32	6020505102	RPIT4, RTS4	50
BS 2-4		6020505101		50
BS 3-6	41	6020505203	RPIT6, RTS6	50
BS 2-6		6020505201		50
CC10-2.5	24	6020502009	DRTP2.5/4, RTP2.5 RTP2.5-H	10
CC3-2.5		6020502002		50
CC2-2.5		6020502001		50
CC10-4	32	6020502109	RTP4	10
CC3-4		6020502102		50
CC2-4		6020502101		50
CC10-D4	32	6020503009	DRTP4	10
CC3-D4		6020503002		50
CC2-D4		6020503001		50
CC10-6	41	6020502209	RTP6, RST6, RTT6 RSTT6 RSTU6, RSTN6	10
CC3-6		6020502202		50
CC2-6		6020502201		50
CC10-10	57	6020502309	RTP10	10
CC3-10		6020502302		50
CC2-10		6020502301		50
CC10-16	76	6020502409	RTP16	10
CC3-16		6020502402		20
CC2-16		6020502401		20
CC10-25	96	6020502419	RTP25	10
CC3-25		6020502412		20
CC2-25		6020502411		20
CC10-35	114	6020502439	RTP35	10
CC3-35		6020502432		20
CC2-35		6020502431		20
CC3-50	111	6020502452	RTP50	10
CC2-50		6020502451		10
CC3-95	200*	6020502492	RTP95	10
CC2-95		6020502491		10
CC2-150	250	6020502511	RTP 150	10
JEB10-6	41	6020506009	RTP6, RST6 RTT6, RSTT6 RSTU6, RSTP6 RSTN6	10
JEB3-6		6020506002		50
JEB2-6		6020506001		50

\* In accordance with IEC/EN 60947-7-1, 210 A is recommended and in accordance with IEC/EN 60079-7, 200A is recommended.



## Test Accessories



### Test Socket

This type of test accessory, made of brass, is tightened in the middle of terminal block busbar.

Type	Drawing	Ordering No.	L	L1	d	D	M	Application	Qty.
TS3/6/2.3	a	6020402001	6	3.5	2.3	4	3	RTP2.5,4,D RTP4, RTP2.5-H, TRTP4, D RTP2.5/4	50
TS3/8/4	a	6020402002	8	3.5	4	6	3	RTP10	50
TS3.5/8/4	a	6020402003	8	5	4	7	3.5	RTP16	50
TS4/8/4	a	6020402004	8	5	4	7	4	RTP25,35	50
TSS3/26/4	b	6020401005	26	4	4	5.5	3	RST6,RTT6,RSTT6, RSTU6,RTP6,10	50

### Moveable Cross Connection (Link)

Moveable link, which is half in plastic (PA 6.6) and half in brass, permits the current branching for the terminal block, functioning as a cross-connection, which makes a connection, and thus installed, can be also disconnected. It is also used in test disconnect terminal blocks.

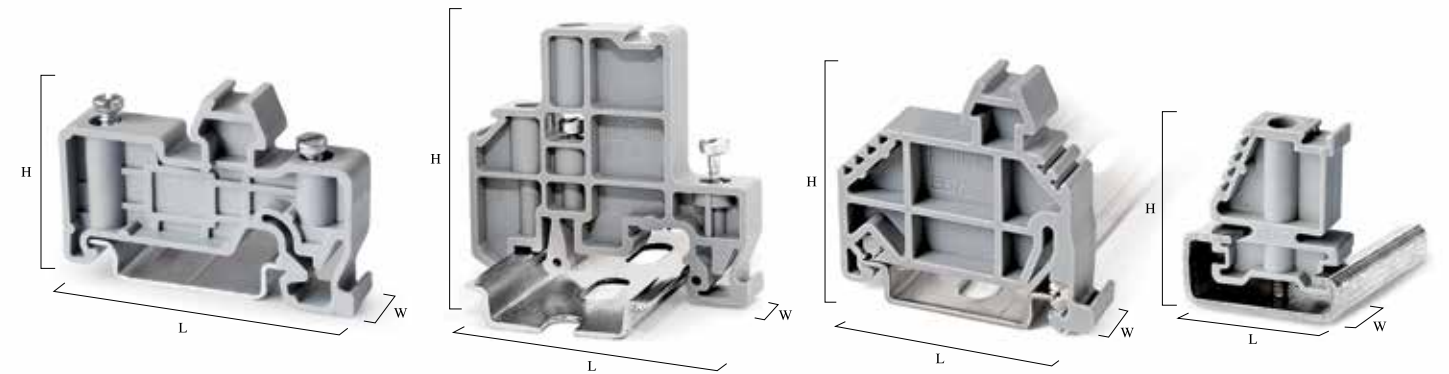


ML4N, ML3N, ML2N



L4, L3, L2

Type	Ordering No.	Application	Qty.
ML2N	6020602001	RST6,RTT6,RSTT6,RSTU6	50
ML3N	6020602002	RST6,RTT6,RSTT6,RSTU6	50
ML4N	6020602003	RST6,RTT6,RSTT6,RSTU6	50
L2	6020501001	RSTN6	50
L3	6020501002	RSTN6	50
L4	6020501003	RSTN6	50



EB/1

EB/2

EB/3

EB/32

## End Brackets

These type of accessories are provided to keep tightly installed terminal blocks on rail.

Description	Type	Ordering No.	Qty.	Dimensions (W/H/L) (mm)
End bracket For mounting on G32, adjustable with terminal NS marking Width (mm)	EB/32 8	6020101004	50	8 / 30.7 / 26.8
End bracket For mounting on TH35, adjustable with terminal NS marking Width (mm)	EB/1 9.5	6020101001	50	9.5 / 35 / 50.6
End bracket For mounting on G32 and TH35, adjustable with terminal NS marking Width (mm)	EB/2 10	6020101002	50	10 / 50 / 55.5
End bracket For mounting on TH35, adjustable with terminal NS marking Width (mm)	EB/3 10	6020101003	50	10 / 42.8 / 45.6
Material				Polyamide 6.6





## Fuse-Switch Disconnectors



Protecting devices used in electrical circuits, from overload and short circuit is inevitable.

To meet the needs of the most demanding customers, Raad manufacturing co., has recently produced new type of products suitable for disconnection and switching, in accordance with international standards.

Raad fuse switch-disconnector introduces a new level of safety, special for 10.3x38, AC fuses.

The design of Raad fuse- holders, in compliance with the IEC 60947-3 standard, has distinguished this type of product for switching under load, to ensure protection from any undesirable damaging currents.

RFH10, is mountable on TH 35-15, TH 35-7.5 DIN rails in accordance with IEC60715 and make high level of finger touch protection, while changing fuses.

Utilization of durable self-extinguish thermoplastic material with extra resistance to high current in body of RFH10 and on the other hand silver plated copper for its contact is strong proof to evidence the quality of this product.

Raad fuse holders are available in 1, 2, 3 or 4 poles; with or without LED-indicator. Multi-pole units can be also assembled by using of special accessory introduced as in next pages.



## Easy installing and high level of protection

The design of RFH10 is space-saving and allows you to easily insert or replace fuses by flipping the hinge of knob.



RFH10 has safety design for finger-touch protection and not accessible to live parts, in accordance with international protection standards.

Detecting the defective phase and blown fuses is simply achieved by indicator light LED.



## RFH10, securely protection of electrical circuits

Using Raad fuse holders, is a secure solution for circuit isolating from short circuit and overload.

Due to AC-22B utilization category, according to IEC60947-3 standard, RFH10 is designed for switching under load and protection.

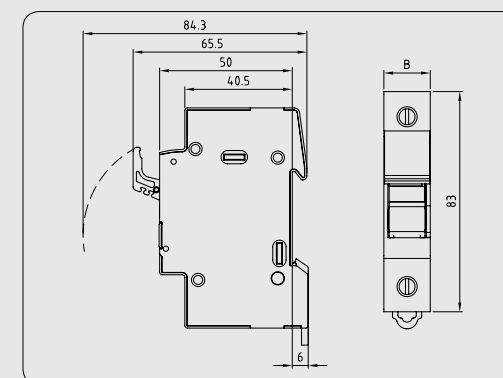
This product can be used in automation

switchboards for switching of mixed resistive and inductive loads; so protection of control circuits, primary and secondary of transformers, motors and other resistive or inductive loads is advantages of using RFH10.

Technical Data accordance with IEC 60947-3

### RFH10- modular fuse holder for 10.3x38 cylindrical fuse-link

Number of pole	1p, 1p+N, 2p, 3p, 3p+N, 4P
Type of current	AC
Utilization category	AC-22B
Rated current (A)	32
Rated voltage (V)	690
Rated conditional short circuit current (KA)	120
Max. power dissipation (w)	3
Connection capacity (mm <sup>2</sup> )	0.5-16
Tightening torque (N.m)	2.5
IEC test gauge	B7



### Fuse-Switch-Disconnecter RFH10

Type	Dimension B (mm)
RFH10	17.5
RFH10N	35
RFH102	35
RFH103	52.5
RFH103N	70
RFH104	70



1-pole					
Rated operational voltage (V)	Rated current (A)	Type	Ordering No.	Indicator	Qty.
690	32	RFH10	6050101001	-	12
		RFH10-LD	6050201001	LED	12

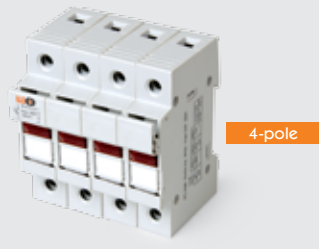
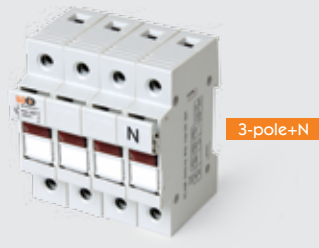
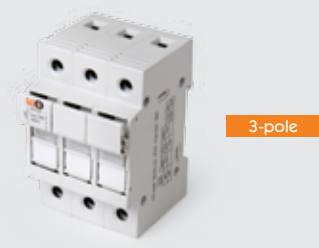
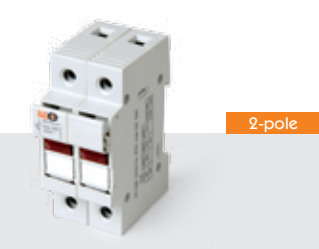
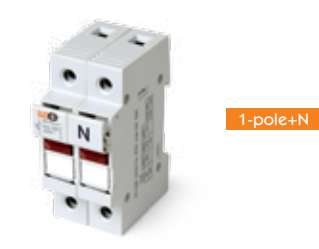
1-pole+N					
Rated operational voltage (V)	Rated current (A)	Type	Ordering No.	Indicator	Qty.
690	32	RFH10N	6050102001	-	6
		RFH10N-LD	6050202001	LED	6

2-pole					
Rated operational voltage (V)	Rated current (A)	Type	Ordering No.	Indicator	Qty.
690	32	RFH102	6050101002	-	6
		RFH102-LD	6050201002	LED	6

3-pole					
Rated operational voltage (V)	Rated current (A)	Type	Ordering No.	Indicator	Qty.
690	32	RFH103	6050101003	-	4
		RFH103-LD	6050201003	LED	4

3-pole+N					
Rated operational voltage (V)	Rated current (A)	Type	Ordering No.	Indicator	Qty.
690	32	RFH103N	6050102001	-	3
		RFH103N-LD	6050202003	LED	3

4-pole					
Rated operational voltage (V)	Rated current (A)	Type	Ordering No.	Indicator	Qty.
690	32	RFH104	6050101004	-	3
		RFH104-LD	6050201004	LED	3



## Definition and Characteristics

### Disconnector

Mechanical switching device which, in the open position, complies with the requirements specified for the isolating function.

Compliance to international standards, any maintenance operations on installation are prohibited unless circuits have been previously disconnected.

### Fuse-disconnector

Disconnector in which a fuse-link or fuse-carrier with fuse-link forms the moving contact. Refer to this definition not all of the fuse holders are disconnector, so they must meet the requirements of IEC60947-3 standard.

### Fuse-switch-disconnector

Switch-disconnector in which a fuse-link or fuse-carrier with fuse-link forms the moving contact. Refer to this standard definition, and utilization category of AC22-B identified in next clause, a fuse-switch-disconnector with these characteristics can be switched under load.



# Utilization Categories

IEC 60947-3 Utilization Categories (Table2)

Nature of current	Utilization categories		Typical applications
	Category A	Category B	
Alternating current	AC-20A <sup>a</sup>	AC-20B <sup>a</sup>	<ul style="list-style-type: none"> <li>Connecting and disconnecting under no-load conditions</li> <li>Switching of resistive loads including moderate overloads</li> <li>Switching of mixed resistive and inductive loads, including moderate overloads</li> <li>Switching of motor loads or other highly inductive loads</li> </ul>
	AC-21A	AC-21B	
	AC-22A	AC-22B	
	AC-23A	AC-23B	
Direct current	DC-20A <sup>a</sup>	DC-20B <sup>a</sup>	<ul style="list-style-type: none"> <li>Connecting and disconnecting under no-load conditions</li> <li>Switching of resistive loads including moderate overloads</li> <li>Switching of mixed resistive and inductive loads, including moderate overloads (e.g. shunt motors)</li> <li>Switching of highly inductive loads (e.g. series motors)</li> </ul>
	DC-21A	DC-21B	
	DC-22A	DC-22B	
	DC-23A	DC-23B	

<sup>a</sup> The use of these utilization categories is not permitted in the USA.

Refer to circumstance of situations, the AC22-B utilization category can be operated of mixed resistive and inductive loads with moderate overloads. Mixed load consist of: Transformers, corrected motors, capacitor batteris, discharge lamps, heating, etc.

In the following, we offer some of the safety standard fuse-link to use in RFH10:

## df-electric

Raad manufacturing co.  
P.O. Box 81395/111  
Isfahan - Iran  
Tel : +9831 33802026  
Fax: +9831 33802013

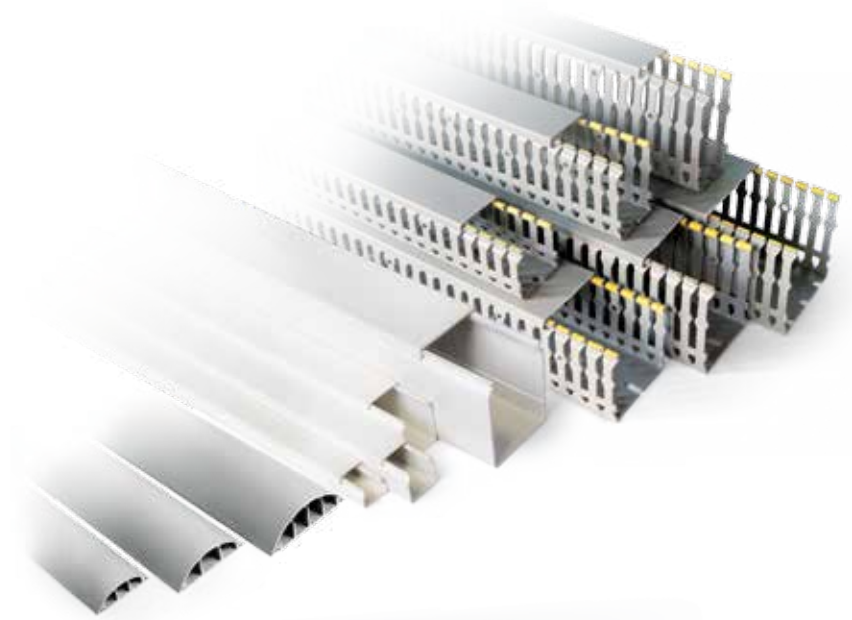
## ferraz Shawmut SA

Charles Shawmut DEBUT-Directeur  
Commercial France  
Tel: +33(0)472226629  
Fax: +33(0)472226701

## ETI Elektroelement d.d.

Obrezija 5  
1411 Izlake  
Slovenia  
Tel: 03/56-57-570

## Wiring Duct Systems And Components



As part of the business development efforts, Raad Manufacturing Co. is now in a position to offer high quality "WIRING DUCTS" to customers.

These series of wiring ducts, feature as an excellent assembly and are ideal for any type of power and control panels preferably for control panels where performance remains unaltered over time even under the heaviest operating conditions.

The reliability and durability of these products is guaranteed by a very severe selection of raw materials employed for their production and rigorous process controls.

Correct installation by qualified staff, as well as proper use and periodical maintenance contribute to the safety and safeguarding of people and property.

● Note:

The word "duct" utilized in this catalog, if any, is used as a popular expression in industries, and the word "trunking" shall be considered instead as a right word, in accordance with definitions in the related standards.

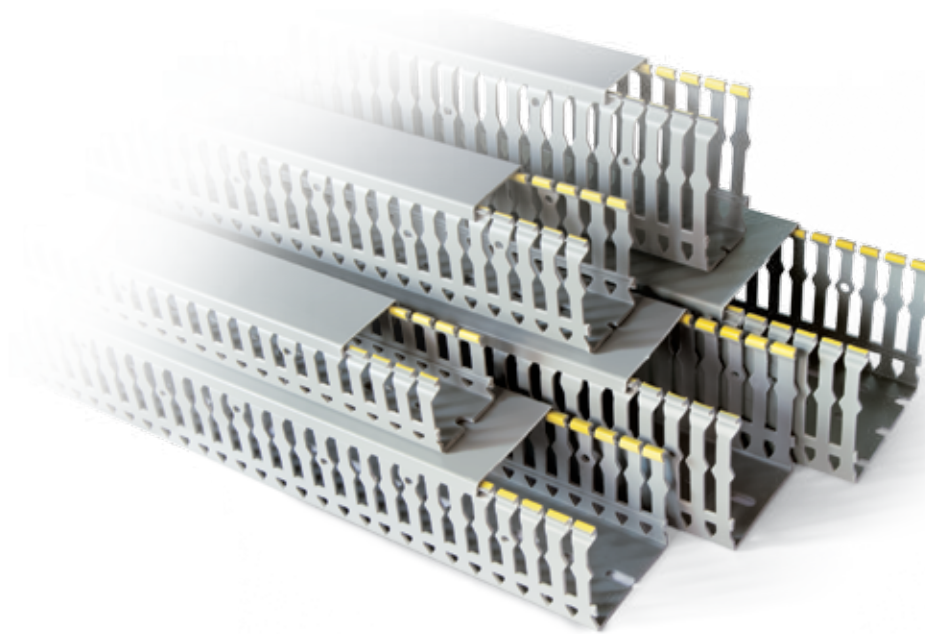
## Construction Specifications



- Slotted wiring duct for installation in cabinets based on standards EN 50085-1+A1 and EN-50085-2-3 (IEC 61084-1+A1).
- The base perforation of the wiring duct allows mounting on the panel or on Din mounting rails.
- Duct material as Rigid PVC, self-extinguishing (non-flame propagating) and resistant to abnormal heat and fire up to 960°C (glow-wire test) in conforming with IEC/EN 60695-2-11 standards.
- Product without Lead (Pb) in accordance with RoHS requirements.
- Technical characteristics of PVC duct as shown in Table 5.
- Complementary construction details as illustrated in Figures 1 to 5.
- Duct dimensional details, as shown in Figures 6 and 7.
- Nominal sizes and dimensions as shown in Table 1.
- The thickness of wall, bottom and cover as shown in Table 4.
- Standard length as 2 meters.

## OPERATING INSTRUCTIONS

- The maximum application (operating) temperature as +60°C in accordance with IEC/EN standards.
- The minimum storage/ transport temperature as -45°C.
- The minimum installation/ application temperature as -25°C.
- The number of conductors must not exceed the recommended values, considering 60% stuffing coefficient (Table 2).
- Suitable for small sized wires employed in electric and electronic control panels.
- The deformation of horizontal duct walls under recommended conductor loading has been subjected to limited investigation. The acceptability of deformation under more rigorous conditions such as load bearing cover or required mechanical spacing must be evaluated in the end-use investigation.



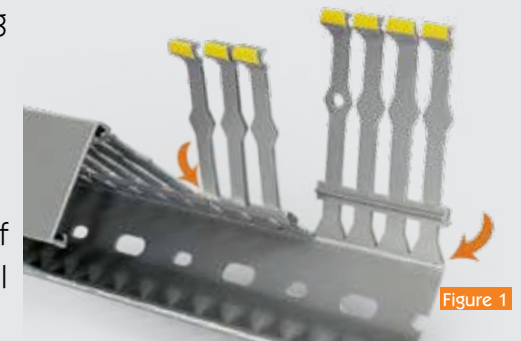
## Slotted Wiring Ducts

Type: RWD  

- High quality products conforming to international standards.
- Designed to meet the needs of panel builders regarding to advanced and time-saving panel assembling.
- Complying with international certificates KEMA, CE.

### Figure 1

- Two predetermined break lines for breaking off and removal of sidewall finger segments only as well as removal of sidewall finger and base segments.



### Figure 2

- The possibility of making different distinct levels, by using special pins inside the holes contrived in the duct fingers. It is mentionable that ducts with the height up to 40 (mm), have only one hole in the middle, while for duct height including 60 (mm) and more, two holes provide the above-mentioned possibility.



### Figure 3

- Provided with a soft yellow PVC strip for handling purposes to avoid hand-accidents during the cabling as well as making the cover very steady.



**Figure 4**

- Non-slip covers design of minimum encumbrance and maximum grip.



Figure 4

**Figure 5**

- Burr-free edges.



Figure 5

**Table 1-** Nominal Sizes and Dimensions

Duct Nominal size (WxH)mm	Dimensions (mm)						Qty. in Carton	Total Length in carton	Ordering No.
	W	H	E	F	G	φ			
25 x 40	25	40	6.5	5.9	12.8	4.5	30	60	6110105008
40 x 40	40	40	6.5	5.9	12.8	4.5	20	40	6110108008
60 x 40	60	40	6.5	5.9	12.8	4.5	16	32	6110112008
25 x 60	25	60	6.5	6	15.7	4.5	20	40	6110105012
40 x 60	40	60	6.5	6	15.7	4.5	18	36	6110108012
60 x 60	60	60	6.5	6	15.7	4.5	12	24	6110112012
80 x 60	80	60	6.5	6	15.7	4.5	10	20	6110116012
100 x 60	100	60	6.5	6	15.7	4.5	6	12	6110120012
40 x 80	40	80	6.5	6	19.8	4.5	14	28	6110108016
60 x 80	60	80	6.5	6	19.8	4.5	8	16	6110112016
80 x 80	80	80	6.5	6	19.8	4.5	8	16	6110116016
100 x 80	100	80	6.5	6	19.8	4.5	4	8	6110120016
100 x 100	100	100	6.5	6	19.8	4.5	4	8	6110120020

**Figure 6**

- Duct Base Dimensional Details

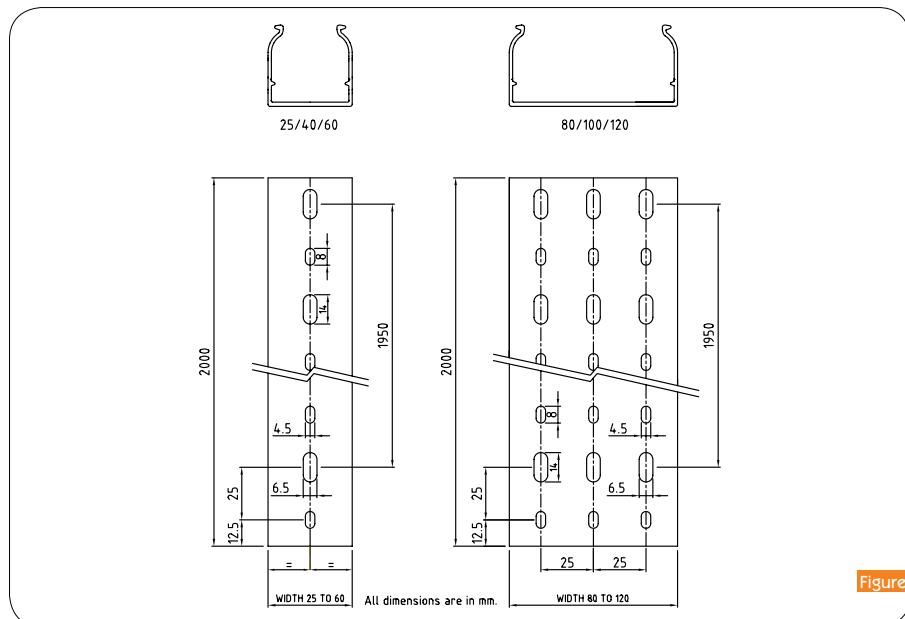


Figure 6

**Table 2**

Recommended maximum number of wires to be used per wiring duct based on 60 % fill capacity (Wire Fill Capacity)

Duct Nominal size (WxH)mm	Section mm <sup>2</sup>	Nominal Cross-Section of Conductors			
		2.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	1 mm <sup>2</sup>	
H 40	25 x 40	820	35	51	78
	40 x 40	1360	65	94	129
	60 x 40	1970	95	134	188
H 60	25 x 60	1190	57	83	112
	40 x 60	2040	98	141	192
	60 x 60	3080	148	214	291
	80 x 60	4150	200	288	391
H 80	100 x 60	5250	254	364	491
	40 x 80	2700	130	187	255
	60 x 80	4140	200	289	392
H 80	80 x 80	5660	272	393	534
	100 x 80	7606	255	418	702
H 100	100 x 100	8920	430	619	812

- WxH (Width x Height)
- Each standard length is 2 meters.
- For dimensional details see Figure 7.
- Standard unit as duct complete with cover.

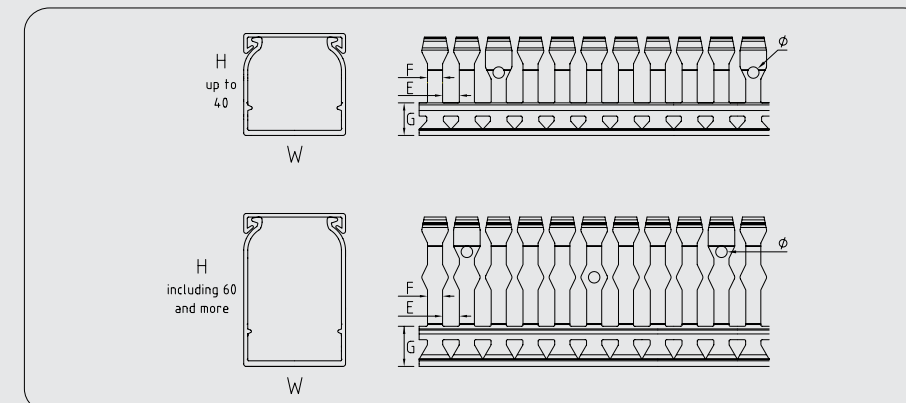
- For comparison of standard cross-sections between AWG and metric sizes, refer to Table 3 (see IEC 60947-7-1, Table 1)

**Table 3-** Standard cross-sections of round copper conductors

Metric size ISO mm <sup>2</sup>	Comparison between AWG and metric sizes	
	Size AWG	Equivalent metric area mm <sup>2</sup>
0.2	24	0.205
0.34	22	0.324
0.5	20	0.519
0.75	18	0.82
1	-	-
1.5	16	1.3
2.5	14	2.1
4	12	3.3
6	10	5.3

**Figure 7**

- Dimensional Details



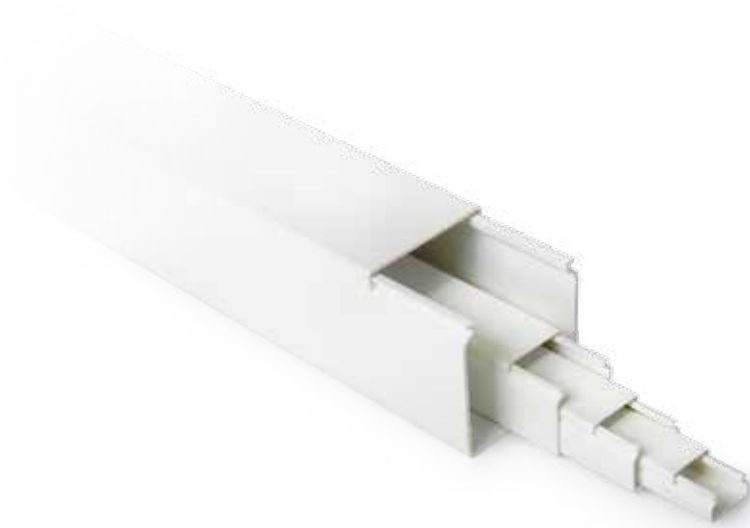


**Table 4 - Wall, Bottom and Cover Thickness (mm)**

	Duct Nominal Size (WxH) mm	Walls (Tolerance ±0.3 mm)	Bottom (Tolerance ±0.3 mm)	Cover (Tolerance ±0.2 mm)
H 40	25 x 40	1.6±0.1	2.0±0.1	1.35±0.05
	40 x 40	1.6±0.1	2.0±0.2	1.35±0.05
	60 x 40	1.6±0.1	1.8±0.2	1.35±0.05
H 60	25 x 60	1.6±0.1	2.0±0.1	1.35±0.05
	40 x 60	1.5±0.1	2.0±0.2	1.35±0.05
	60 x 60	1.85±0.1	2.0±0.1	1.35±0.05
	80 x 60	1.85±0.1	2.1±0.1	1.5±0.05
	100 x 60	1.6±0.2	2.0±0.2	1.5±0.05
H 80	40 x 80	1.9±0.1	2.0±0.1	1.35±0.05
	60 x 80	1.85±0.1	2.1±0.1	1.35±0.05
	80 x 80	1.9±0.1	2.1±0.1	1.5±0.05
	100 x 80	1.9±0.1	2.0±0.1	1.5±0.05
H 100	100 x 100	1.9±0.1	2.1±0.1	1.5±0.05

**Table 5 - Technical characteristics of material**

Properties	Standard	Unit	PVC
Density	UNE EN ISO 1183	gr/cm <sup>3</sup>	1.60
Tensile Strength	UNE EN ISO 527	MPa	>=40
Break Strain	UNE EN ISO 527	%	>=100
Hardness Shore D	UNE EN ISO 868	-	79
Temperature VICAT A 5kg	UNE EN ISO 306	°C	80



## Non-slotted Wiring Duct

### Type: HWD

Using RAAD Household Wiring Duct (HWD) makes your room look more appealing by hiding and safely storing the wires that go across walls, ceilings and floors. HWDs are widely used in buildings, offices, houses and residential properties, just to name a few. Using the HWDs will provide your wires with an appropriate casing, helping you to place your cables into pre-determined paths. This product comes with a cover to simplify the process of purchasing. The use of heat-resistant PVC avoids any damage caused by the heat-emitting equipments.

Nominal size	Dimension (mm)		Qty. in carton	Length (m)	Ordering No.
	W	H			
20 x 12	20	12	65	130	6110204003
20 x 20	20	20	42	84	6110204004
25 x 20	25	20	36	72	6110205004
30 x 30	30	30	20	40	6110206006
40 x 40	40	40	20	40	6110208008
60 x 40	60	40	16	32	6110212008
60 x 60	60	60	12	24	6110212012
100 x 60	100	60	6	12	6110220020



## CERTIFICATES





## Onfloor Wiring Duct

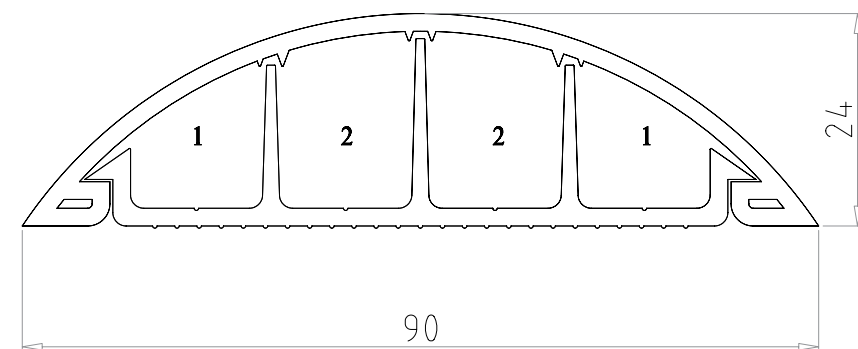
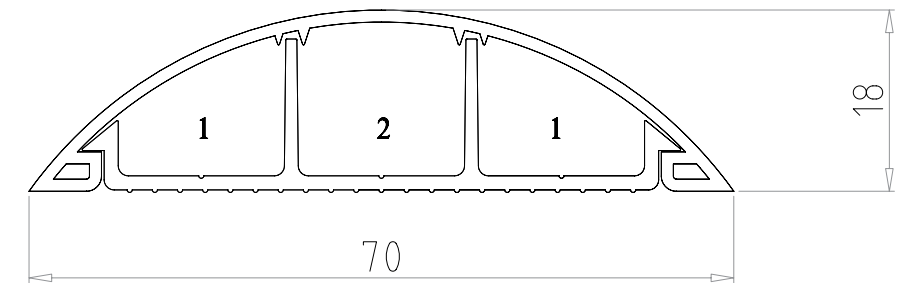
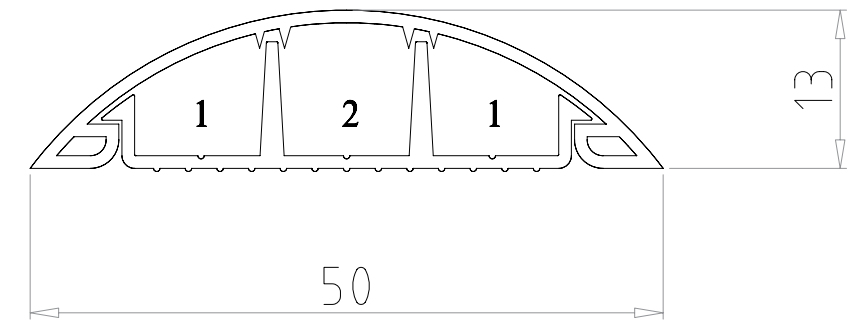
### Type: OWD

- Insulating, shock-proof, self-extinguishing material
- Standard 2-metre long base complete with cover
- Complying with the EN 50085-2-2 European Standard
- Residential and commercial application
- Special design giving high resistance to crushing
- Degree of protection IP40
- Various compartments suitable for house electric, telephone and data transmission cables separately
- Providing optimum reliability and safety through compliance with relevant standards
- Providing high cable retention

TYPE	Dimension (mm)		Qty. in carton	Length (m)	Ordering No.
	W	H			
50 x 13	50	13	30	60	6110310010
70 x 18	70	18	14	28	6110310014
90 x 24	90	24	8	16	6110310018



Technical Info.	50 x 13 compartment			70 x 18 compartment			90 x 24 compartment				
	1	2	1	1	2	1	1	2	2	1	
Useful cross section mm <sup>2</sup>	76	103	76	174	244	174	195.5	298	298	195.5	
Cable Ø Max. (mm)	9.1	11	9.1	11	16.2	11	12.9	16.2	16.2	12.9	
usable cross sectional area	1.5	6	8	6	11	15	11	13	19	19	13
	2.5	5	6	5	9	13	9	10	16	16	10
	4	3	4	3	6	10	6	7	11	11	7
	6	2	3	2	4	6	4	5	7	7	5











## Din Rail Socket Outlet



Using Socket in electrical cabinets and power distribution systems is unavoidable.

The capability of Raad Socket outlet in mounting on din rails as well its standard format, distinguished this type of product. The main connection terminals (L1, N, PE) are arranged on one side of the socket for easy connection.

The advantages of DSO are as follows:

- Mountable on TH35-15 and TH35-7.5 din rails in accordance with IEC/EN 60715.
- Having three connection terminals: phase-neutral-earth.
- With and without light indicator (LED)
- Applied UI 94 high grade fire- resistant plastic material.
- The sockets are supplied with marking tags.



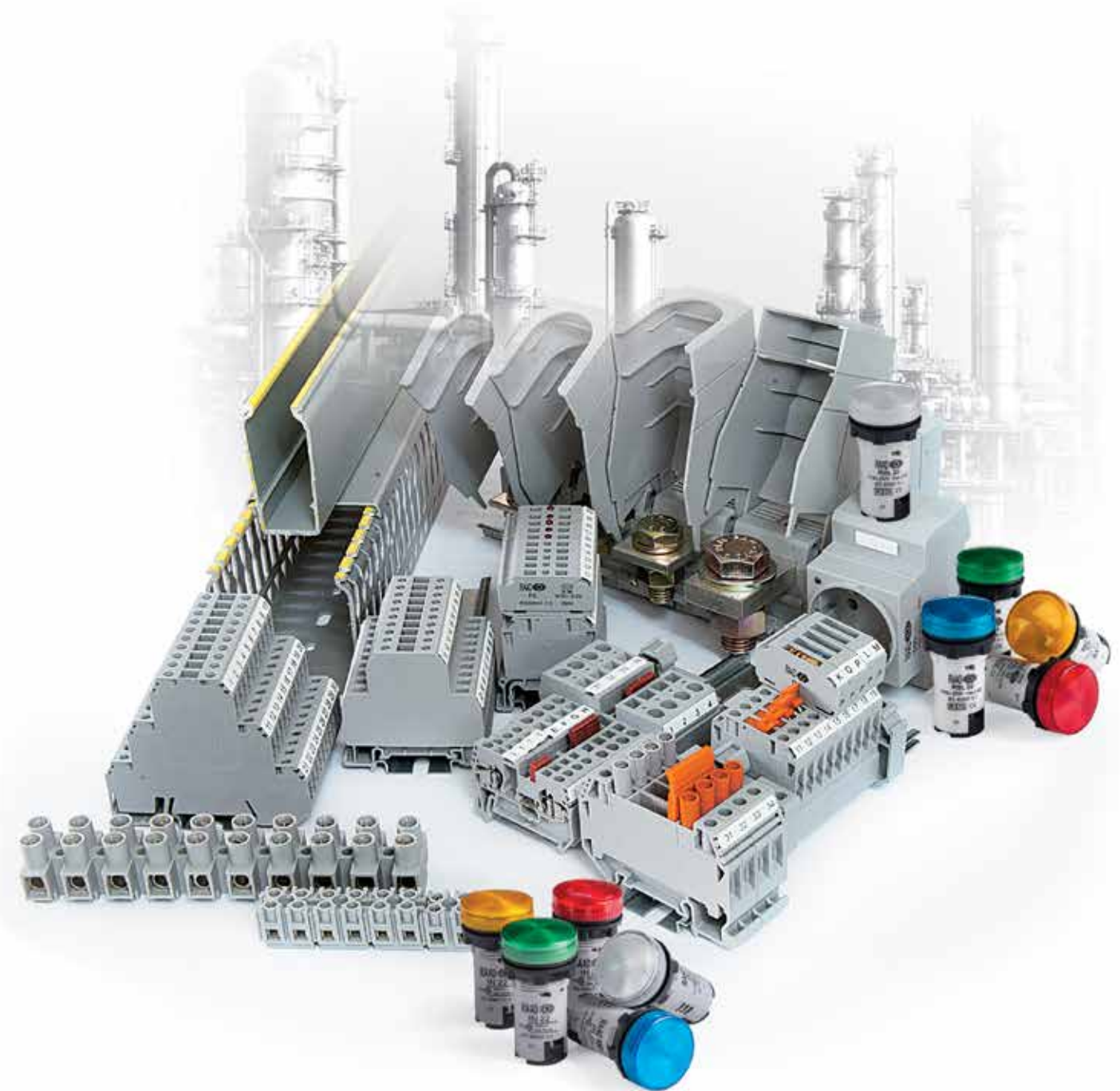
**DSO**  
width 44.8 mm



**DSO-LD**  
width 44.8 mm

IEC 60884-1 rated data	DSO			DSO-LD		
Voltage (V)	250			250		
Current (A)	16			16		
<b>Description</b>	<b>Type</b>	<b>Ordering No.</b>	<b>Qty.</b>	<b>Type</b>	<b>Ordering No.</b>	<b>Qty.</b>
Din rail socket outlet, for mounting on TH 35-7.5, 15	DSO	6080101001	5	DSO-LD	6080201001	5

Dimensions (mm)	DSO	DSO-LD
Width / Length / Height	44.8/78/63	44.8/78/63
<b>Connection capacity</b>		
Rigid Solid (mm <sup>2</sup> )	0.5-6	0.5-6
Rigid stranded (mm <sup>2</sup> )	0.5-6	0.5-6
Flexible (mm <sup>2</sup> )	0.5-6	0.5-6
Clamping screw	M3.5	M3.5
<b>Tightening torque (N.m)</b>	<b>1.2</b>	<b>1.2</b>
Insulation material	PA 6.6	PA 6.6
Degree of Protection	IP 20	IP 20





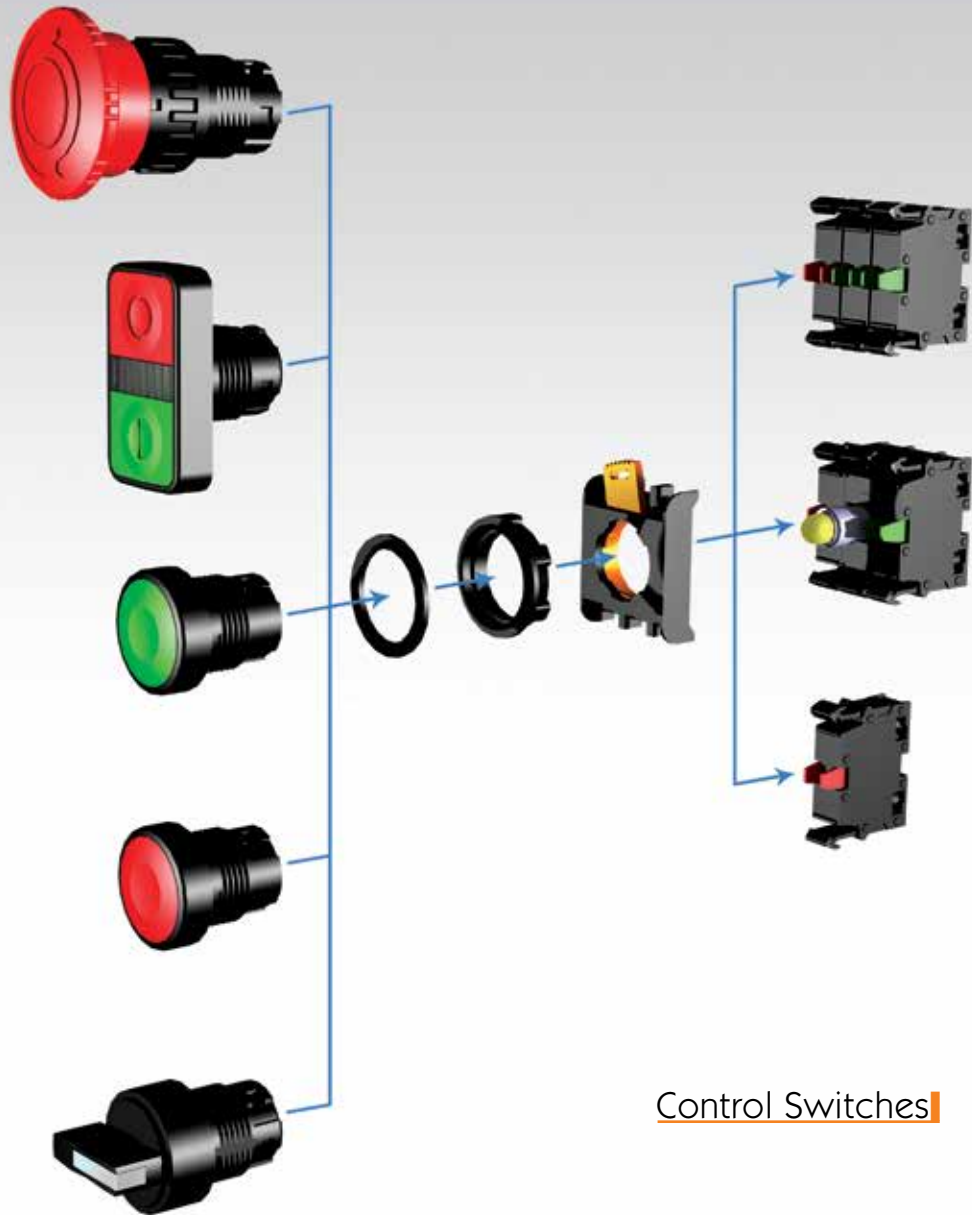
## Control switches



The range of 22mm diameter push buttons is designed in accordance to IEC 60947-5-1 and IEC 60947-5-5 to provide the following features:

- Easy and rapid installation
- Fixing method unaffected by excessive vibration
- Produced from flame resistant material
- Plastic bush construction resistant to corrosion and longer mechanical life
- Independent assembling of NC and NO contacts and freely combined for convenient replacement
- Outstanding appearance and ergonomics
- The BA9S lamp can be requested in each color





Control Switches

Working and mounting conditions:	
Conforming standard	IEC 60947-5-1
Ambient temperature	-5 ~ +40
Altitude	2000m
Pollution degree	3
Technical Data:	
Rated insulation voltage (V)	400
Rated impulse withstand voltage(kV)	4
Conventional thermal current(A)	10
Utilization Category	AC-15
push button color	● ● ● ● ●
Rated operational voltage(V)*	
380	1.9
240	3
120	6

\*: For illuminated push buttons the rated operational voltage of lamps are: 24, 48, 110, 220 V (AC/DC)

Type	Description			Ordering No.	Qty	Appearance Dimension
	Pushbutton, Spring-return FB-O	1	-	6070302001	15	
	Pushbutton, Spring-return FB-C	-	1	6070301001	15	
	Pushbutton, Spring-return, Illuminated FBL-O	1	-	6070302002	15	
	Pushbutton, Spring-return, Illuminated FBL-C	-	1	6070301003	15	
	Double Pushbutton Spring-return DPB	1	1	6070303001	10	
	Double Pushbutton Spring-return, Illuminated DPBL	1	1	6070303002	10	
	Emergency stop button, Turn to release ESTR	-	1	6070301002	10	

Type	Description	Type of Position	Ordering No.	Qty.	Appearance Dimension
	Selector Switch 2position, momentary SEI2		6070303010	10	
	Selector Switch 2position, stay-put SES2		6070303020	10	
	Selector Switch 3position, momentary SEI3		6070303011	10	
	Selector Switch 3position, stay-put SES3		6070303021	10	



NC Contact



NO Contact



RSC Contact




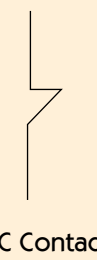
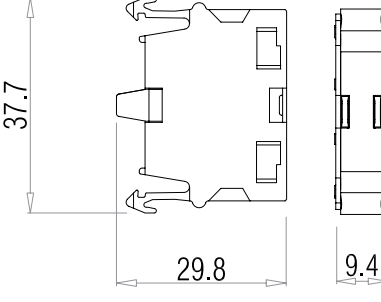

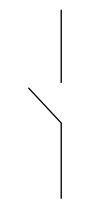

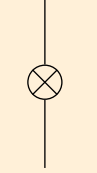
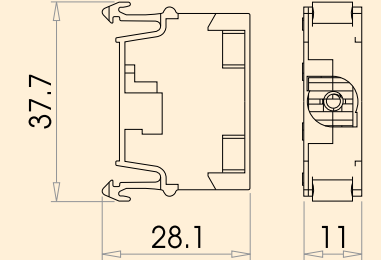
RSL22


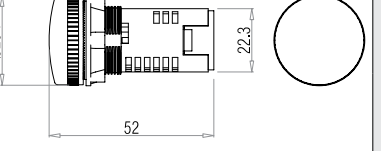



IN22



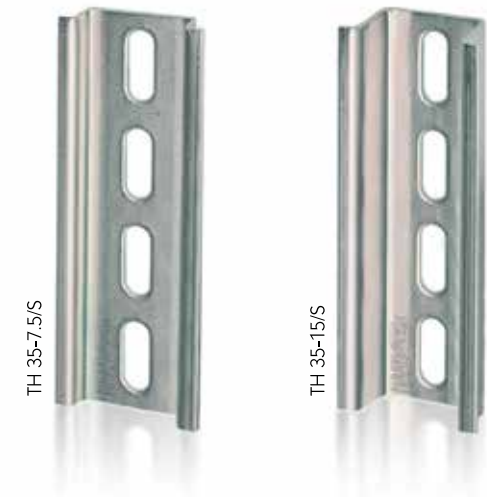
Lamp

Type	Diagram	Ordering No.	Qty.	Appearance Dimension
	 NC Contact	6070402001	50	
	 NO Contact	6070401001	50	
	 Signal Contact RSC	6070403001	50	

Type	Operating Voltage	Max. Power Dissipation (w)	Color	Ordering No.	Qty.	Appearance Dimension
 With BA9S Base Fitting	24,48,110,220	2.4	Green	6070101002	25	
Red			6070101005	25		
Yellow			6070101004	25		
Blue			6070101001	25		
White			6070101003	25		
 With Integral LED	230VAC 110VAC/DC 24VAC/DC	20mA	Green	6070102402 6070103002 6070105002	25	
Red			6070102405 6070103005 6070105005	25		
Yellow			6070102404 6070103004 6070105004	25		
Blue			6070102401 6070103004 6070105004	25		
White			6070102403 6070103003 6070105003	25		
White			6070204001	25		
Green			6070206001	25		
Red			6070205001	25		
White			6070204002	25		
Green			6070206002	25		
Red	6070205002	25				
White	6070204003	25				
Green	6070206003	25				
Red	6070205003	25				
White	6070204004	25				
Green	6070206004	25				
Red	6070205004	25				



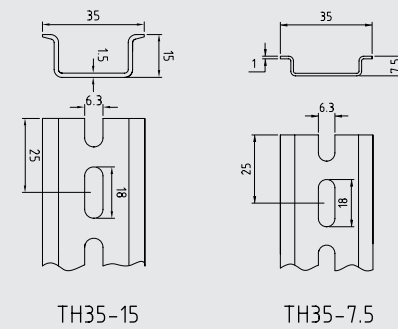
## Mounting Rails And Accessories



IEC 60715 mounting rails form the basis for the mounting of modular terminal blocks, as well as for rail mountable electro technical and electric components. Active and passive components are installed on mounting rails. In control cabinet design, the TH 35-15, TH 35-7.5 and G32 rails stand out with their high degree of dimensional accuracy and surface tempering. All steel versions are electroplated and additionally coated with a white chromate comply with the IEC 60715, EN50022, EN50035 standards. Raad supplies components which are totally co-ordinated in their functionality.

The mounting rails can also be used as a protective busbar. Raad protective conductor terminals meet the requirements specified in IEC 60947-7-2.

The rails are both produced in slotted and non-slotted form for easier application by the users.



Description	Type	Ordering No.	Qty.
Mounting Rail In according to IEC 60715, EN50022, EN50035, White chromated, length 2m, Slotted	TH 35-7.5/S	6090101002	20
Mounting Rail In according to IEC 60715, EN50022, EN50035, White chromated, length 2m, Slotted	TH 35-15/S	6090102002	10
Material	Steel, galvanized & White chromated		



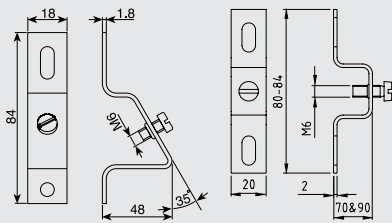


## Mounting Rail Accessories

### Mounting Rail Support

Angled Rail supports (ARS) hold sloped attachment of mounting rails at an angle of 35°. Their designs are available with M6 threads.

Flat mounting rail supports (FRS) are similar to ARS, but with flat surface.



Description	Type	Ordering No.	Qty.
Angled rail support allow for sloped attachment of mounting rail at an angle of 35°, with M6 thread	ARS/M6	6090202001	10
Flat rail support, height 70mm	FRS-70	6090201006 By Order	10
Flat rail support, height 90mm	FRS-90	6090201007 By Order	10
Material	Steel, galvanized & white chromated		



### Mounting Clips

Description	Type	Ordering No.	Qty.	Material
Mounting clips for mounting rail G32- Allow installation of components which are not pre-set to clip on to rail G32	MGC1/M5	6090252003 By Order	5	Nickel-plated steel
Mounting clips for mounting rail G32- Allow installation of components which are not pre-set to clip on to rail G32	MGC2/M5	6090252004 By Order	5	Nickel-plated steel
Mounting clips for mounting rail G32- Allow installation of components which are not pre-set to clip on to rail G32	PGC/M4-M6	6090251002 By Order	5	Nylon 6/6 and steel, galvanized
Mounting clips for mounting rail TH 35-7.5,15 - Allow installation of components which are not pre-set to clip on to rail TH 35-7.5,15	TH C/M5	6090250001 By Order	5	Nickel-plated steel

## General Technical Information



- Certificates
- Material
- Standard and Regulations



*Confidence in Connection*

## Certificates



Achieving a uniform quality on production in mass production is impossible unless through establishment of quality management system. Having the certificate of quality management system in accordance with ISO 9001:2008 issued by authorized and well-known standard institutions, Raad Manufacturing Company is seeking to assure its customers for the existence of such system.

Furthermore, Raad products quality is proven by outstanding institutions, being well-known in electric field all around the world, offered various types of certificates, in accordance with 2006/95/EC LV Directive.

Both, the certificates of products quality and quality management system indicate reliable products, manufactured by the company. The development plan to gain other certificates on products quality and quality management system is still alive and continuing.

## Material

Raad products use parts and materials conform to standards in electrical industry and are subject to quality control system.

### Metals

All metal parts in Raad products are electro-plated using the latest state of the art engineering methods.

The surface protection conforms to technical standards. Steel parts at the beginning are zinc-plated and then a white chromate layer coats over the zinc, providing the best possible passivation.

Copper and brass parts are tin-plated. Tin plating provides excellent protection against corrosion and has good electrical conduction.

### Insulating Materials

Raad terminal blocks use thermoplastics for insulating materials.

Thermoplastics are processed using economical and environmentally healthy injection molding processes, and have good recycling properties and can be reused. Polyamide 6.6 is a thermoplastic, used in the insulation body of Raad products. This modern semi-crystalline material has excellent electrical, mechanical, chemical and other characteristics even at 100°C for continuous operating.

The short-time peak temperatures are permissible up to about 200°C and the melting point is around 260°C.

Polyamide 6.6 absorbs moisture from its surroundings, on average 2.8 %. This makes the PA 6.6 more flexible and resistant to breakage, even at -40°C. Today PA 6.6 is approved for use by the approval authorities such as CSA, NEMKO, KEMA, PTB, SEV, UL, VDE, etc.

Properties	Standard	Unit	PA 6.6
Max. application temperature (RTI)	IEC60216-1	°C, <sub>&lt;</sub> 5000h °C, <sub>&lt;</sub> 20.000h	125 100-130
Flammability class	UL94	-	V2
Comparative tracking index (CTI)	IEC60112	CTI CTIM	600 575(475)
Dielectric strength (1 mm thickness)	IEC60243-1	kV/mm	31
Surface resistivity	IEC60093	Ω	>10 <sup>15</sup>
Volume resistivity	IEC60093	Ω.cm	10 <sup>15</sup>
Tropical and termite resistance	-	-	good

## Standards and Regulations

The terminal blocks are manufactured in accordance with the following latest edition of standards as minimum:

### IEC/EN 60947-7-1

Low-voltage switchgear and controlgear  
Part 7: Ancillary equipment  
Section 1: Terminal blocks for copper conductors

### IEC/EN 60947-7-2

Low-voltage switchgear and controlgear  
Part 7: Ancillary equipment  
Section 2: Protective conductor terminal blocks for copper conductors

### IEC/EN 60947-7-3

Low-voltage switchgear and controlgear  
Part 7: Ancillary equipment  
Section 3: Safety requirements for fuse terminal blocks

### IEC/EN 60947-1

Low-voltage switchgear and controlgear  
Part 1: General rules

### IEC/EN 60998-2-1

Connecting devices for low voltage circuits for household and similar purposes  
Part 2-1: Particular requirements for connecting devices as separate entities with screw-type clamping units

### IEC/EN 60998-1

Connecting devices for low voltage circuits for household and similar purposes  
Part 1: General requirements

### IEC/EN 60664-1

Insulation coordination for equipment within low voltage systems  
Part 1: Principles, requirements and tests

### IEC/EN 60715

Dimensions of low-voltage switchgear and controlgear. Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations

### IEC/EN 60127-1

Miniature fuses  
Part 1: Definitions of miniature fuses and general requirements for miniature fuse-links

### IEC/EN 60127-2

Miniature fuses  
Part 2: Cartridge fuse-links

### IEC/EN 60695-11-5

Fire hazard testing  
Part 11-5: Test Flames-Needle-Flame test method

### IEC/EN 60068-2-6

Environmental testing  
Part 2-6: Tests: Vibration (sinusoidal)

### IEC/EN 60068-2-27

Environmental testing  
Part 2-27: Tests: Shock

### IEC/EN 60529

Classification of degrees of protection provided by enclosures (IP code)

### IEC/EN 60112

Methods for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions

### IEC/EN 60243-1

Methods of test for electric strength of solid insulating materials  
Part 1: Tests at power frequencies

### IEC/EN 60093

Methods of testing of electrical insulating materials specific contact resistance and specific surface resistance of solid, electrically insulating materials

### IEC/EN 60216-1

Electrical insulating materials  
Properties of thermal endurance  
Part 1: Ageing procedures and evaluation of test results

### IEC/EN 60695-2-10

Fire hazard testing  
Part 2-10: Glowing/hot-wire based test methods  
Glow-wire apparatus and common test procedure

### IEC/EN 60695-2-11

Fire hazard testing  
Part 2-11: Glowing/hot-wire based test methods  
Glow-wire flammability test method

### IEC/EN 60079-0

Electrical apparatus for explosive gas atmospheres  
Part 0: General requirements

### IEC/EN 60079-7

Electrical apparatus for explosive gas atmospheres  
Part 7: Increased safety 'e'

### UL 94

Test for flammability of plastic materials for parts in devices and appliances

### UL 1059

Standard for terminal blocks

### CSA CC 22.2 No.158

Terminal blocks

### EN 50085-1

Cable trunking systems and cable ducting systems for electrical installations  
part 1: general requirements

### EN 50085-2-3

Cable trunking systems and cable ducting systems for electrical installations  
part 2-3: particular requirements for slotted cable trunking systems intended for installations in cabinets.

### IEC 61084-1

Cable trunking and ducting systems for electrical installations  
part 1: general requirements

### IEC60884-1

plugs and socket-outlets for household and similar purposes  
part 1: General requirements

### IEC60947-5-1

Low voltage switchgear and controlgear  
part 5-1: Control circuit devices and switching elements-Electromechanical control circuit devices

### IEC60947-3

Low-voltage switchgear and controlgear  
Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units

### IEC60269-1

Low-voltage fuses  
Part 1: General requirements



# Terminal block tests

IEC 60947-7-1 is the main standard which meets all types of Raad terminal blocks. All Raad products are designed, manufactured and tested in accordance with the standard, which along with IEC 60947-1 determines the tests to be conducted on terminal blocks, each as a type test. Tests details are specified in the standards. Below is an abstract of the foregoing tests.

## Attachment of the terminal block to its mounting rail

To assure the stability of the terminal block to its mounting rail, with standard shape and dimension values, a relevant test is conducted by inserting a 150 mm long steel pin with a diameter specified in table 3 of IEC 60947-7-1. It is connected to each clamping unit and a tightening torque must be applied, as given in table 4 of IEC 60947-1. Force must be applied to the pin with regular intensity and without tears; the corresponding value must be taken from table 3 of IEC 60947-7-1. The distance between the application point of the force and the centre of clamping unit must be equal to 100 mm. During the test, no terminal block must disengage from its mounting rail or suffer any damage.

IEC 60947-7-1 Attachment test parameters (Table3)			
Rated cross-section of terminal block		Force N	Diameter of pin mm
mm <sup>2</sup>	AWG/kcmil		
0.2	24	1	1.0
0.34	22		
0.5	20		
0.75	18		
1.0	-		
1.5	16		
2.5	14		
4	12		
6	10		
10	8		
16	6	5	2.8
25	4		
35	2		
50	0		
70	00		
95	000		
-	0000		
120	250kcmil		
150	300kcmil		
185	350kcmil		
240	500kcmil	20	20.5
300	600kcmil		

## Mechanical strength of terminals

To handle this test on screw-clamp terminal blocks, the rigid conductors must be used, which have the rated cross-section stated by the manufacture. The conductors must be connected and disconnected five times depending

on the screw clamping, as determined in table 4 of IEC 60947-1. Where a screw is loosened, a new conductor must be applied. During the test, clamping units shall not work loose and there shall be no damage that will impair the further use of the screwed connections.

IEC 60947-1  
Tightening torques for the verification of the mechanical strength of screw-type terminals (Table4)

Metric standard values	Diameter of thread mm	Tightening torque N.m		
		I	II	III
1.6	£1.6	0.05	0.1	0.1
2.0	>1.6 up to and including 2.0	0.1	0.2	0.2
2.5	>2.0 up to and including 2.8	0.2	0.4	0.4
3.0	>2.8 up to and including 3.0	0.25	0.5	0.5
-	>3.0 up to and including 3.2	0.3	0.6	0.6
3.5	>3.2 up to and including 3.6	0.4	0.8	0.8
4.0	>3.6 up to and including 4.1	0.7	1.2	1.2
4.5	>4.1 up to and including 4.7	0.8	1.8	1.8
5	>4.7 up to and including 5.3	0.8	2.0	2.0
6	>5.3 up to and including 6.0	1.2	2.5	3.0
8	>6.0 up to and including 8.0	2.5	3.5	6.0
10	>8.0 up to and including 10.0	-	4.0	10.0
12	>10 up to and including 12	-	-	14.0
14	>12 up to and including 15	-	-	19.0
16	>15 up to and including 20	-	-	25.0
20	>20 up to and including 24	-	-	36.0
24	>24	-	-	50.0

- Column I** Applies to screws without heads which, when tightened, do not protrude from the hole, and to other screws which cannot be tightened by means of a screwdriver with a blade wider than the root diameter of the screw.
- Column II** Applies to nuts and screws which are tightened by means of a screwdriver.
- Column III** Applies to nuts and screws which can be tightened by means other than a screwdriver.

## Damage and accidental loosening of conductors-flexion test

Specifically, this test is applied on terminal blocks suited for the connection of unprepared round copper conductors. It is a must to test both rigid and flexible conductors with min. and max. cross-sections; optionally, connections of multiple conductors to a single clamping unit. A particular test apparatus is considered to aid the test performance. During the test, neither must the conductor slip out of the clamping unit, nor does breakage occur near the clamping unit. Soon after the flexion test, a pull-out test must occur without restoring the initial tightening torque.

## Pull-out test

After the flexion test was conducted, a pull-out is carried-out by force, the value of which is presented in table 5 of IEC 60947-1 to the conductor attached to the clamping unit; this force must be applied regularly and without tears, for 1 minute; for screw-clamp terminal blocks, the tightening screws must not be newly tightened. During the test, neither must the conductor slip out of the clamping unit,

nor does breakage occur near the clamping unit.

IEC 60947-1  
Test values for flexion and pull-out tests for round copper conductors (Table5)

Conductor cross-section		Diameter of bushing hole <sup>a,b</sup> mm	Height H <sup>a</sup> mm	Mass kg	Pulling force n
mm <sup>2</sup>	AWG/kcmil				
0.2	24	6.5	260	0.2	10
0.34	22	6.5	260	0.2	15
0.5	20	6.5	260	0.3	20
0.75	18	6.5	260	0.4	30
1.0	-	6.5	260	0.4	35
1.5	16	6.5	260	0.4	40
2.5	14	9.5	280	0.7	50
4.0	12	9.5	280	0.9	60
6.0	10	9.5	280	1.4	80
10	8	9.5	280	2.0	90
16	6	13.0	300	2.9	100
25	4	13.0	300	4.5	135
-	3	14.5	320	5.9	156
35	2	14.5	320	6.8	190
-	1	15.9	343	8.6	236
50	0	15.9	343	9.5	236
70	00	19.1	368	10.4	285
95	000	19.1	368	14	351
-	0000	19.1	368	14	427
120	250kcmil	22.2	406	14	427
150	300kcmil	22.2	406	15	427
185	350kcmil	25.4	432	16.8	503
-	400kcmil	25.4	432	16.8	503
240	500kcmil	28.6	464	20	578
300	600kcmil	28.6	464	22.7	578

- a) Tolerances: for height H ± 15 mm, for diameter of the bushing hole ± 2 mm.
- b) If the bushing hole diameter is not large enough to accommodate the conductor without binding, a bushing having the next larger hole size may be used.

## Rated cross-section

It is the value of max connectable conductor cross-section. The rated cross-section shall be selected from the standard cross-sections presented in table 1, IEC 60947-1. Where a ferrule is applied on a flexible conductor, then a terminal block of one step higher rated cross-section must be used, for example, a 2.5mm<sup>2</sup> flexible conductor covered with the relating ferrule must be inserted to a one step higher cross-section, i.e. terminal block with rated cross-section 4mm<sup>2</sup>.

IEC 60947-7-1  
Standard cross-sections of round copper conductors and approximate relationship between mm<sup>2</sup> and AWG/kcmil sizes (Table1)

Rated cross-section mm <sup>2</sup>	AWG/kcmil size	Equivalent metric area mm <sup>2</sup>
0.2	24	0.205
0.34	22	0.324
0.5	20	0.519
0.75	18	0.82
1	-	-
1.5	16	1.3
2.5	14	2.1
4	12	3.3
6	10	5.3
10	8	8.4
16	6	13.3
25	4	21.2
35	2	33.6
-	1	42.4
50	0	53.5
70	00	67.4
95	000	85.0
-	0000	107.2
120	250kcmil	127
150	300kcmil	152
185	350kcmil	177
-	400kcmil	203
240	500kcmil	253
300	600kcmil	304

NOTE: The dash, when it appears, counts as a size when considering connecting capacity (see 7.1.7.2).

## Rated connection capacity

It is the range of cross-sections and the number of connectable conductors based on which the terminal blocks are designed. The IEC 60947-7-1 determines the relation between the rated cross-section and rating connecting capacity of terminal blocks. Practically, terminal blocks up to 35mm<sup>2</sup>, must be possible to connect a conductor of cross-section equal to the nominal cross-section and lower up to two cross-sections.

## Insulation coordination for equipment within low voltage systems

IEC 60664-1 deals with insulation coordination for equipment within low voltage systems. It specifies the requirements for clearances, creepage distances and solid insulation for equipment based upon the performance criteria. Terminal blocks standard, IEC 60947-7-1, has the rules for coordination of insulation in accordance with IEC 60664-1.

## Clearances

Degrees of pollution in the micro-environment

### ● Pollution degree 1

No pollution or only dry, non-conductive pollution occurs. The pollution has no influence.

### ● Pollution degree 2

Only non-conductive pollution occurs except that occasionally a temporary conductivity caused by condensation is to be expected.

### ● Pollution degree 3

Conductive pollution occurs or dry non-conductive pollution occurs which becomes conductive due to condensation which is to be expected.

### ● Pollution degree 4

The pollution generates persistent conductivity caused by conductive dust, rain or snow.

## Overvoltage categories

● Equipment of overvoltage category I is equipment for connection to circuits in which measures are taken to limit transient overvoltages to an appropriately low level.

Examples for such devices are protected electronic circuits.

● Equipment of overvoltage category II is energy-consuming equipment to be supplied from the fixed installation.

Examples of such equipment are appliances, portable tools and other household and similar loads.

● Equipment of over voltage category III is equipment in

fixed installations and for cases where the reliability and the availability of the equipment are subject to special requirements. Examples of such equipment are switches in fixed installation and equipment for industrial use with permanent connection to the fixed installation.

● Equipment of overvoltage category IV is for use at the origin of the installation. Examples of such equipment are electricity meters and primary over-current protection equipment

EN 60664-1 Rated impulse voltage for equipment energized directly from the low-voltage mains (Table1)						
Nominal voltage of the supply system based on IEC 60038 <sup>2)</sup> V		Voltage line to neutral derived from normal voltages a.c. or d.c. up to and including V	Rated impulse voltage <sup>1)</sup> V			
Three phase	Single phase		Over voltage category			
			I	II	III	IV
		50	230	500	800	1500
		100	500	800	1500	2500
	120-240	150	800	1500	2500	4000
230/400 277/480		300	1500	2500	4000	6000
400/690		600	2500	4000	6000	8000
1000		1000	4000	6000	8000	12000

1) Equipment with these rated impulse voltages can be used in installation in accordance with IEC60364-4-443.

2) The / mark indicates a four-wire three-phase distribution system. The lower value is the voltage line -to- neutral, while the higher value is the voltage line-to-line. Where only one value is indicated, it refers to three-wire, three-phase systems and specifies value line-to-line.

IEC 60947-1 Minimum clearance in air (Table13)								
Rated impulse withstand voltage U <sub>imp</sub> kV	Minimum clearances mm							
	Case A Inhomogeneous field conditions (see 2.5.63)				Case B Homogeneous field ideal conditions (see 2.5.62)			
	Pollution degree				Pollution degree			
	1	2	3	4	1	2	3	4
0.33	0.01				0.01			
0.5	0.04	0.2		0.04	0.2			
0.8	0.1		0.8	0.1		0.8		1.6
1.5	0.5	0.5		0.3	0.3			
2.5	1.5	1.5	1.5	0.6	0.6			
4.0	3	3	3	1.2	1.2	1.2		
6.0	5.5	5.5	5.5	2	2	2		2
8.0	8	8	8	3	3	3		3
12	14	14	14	4.5	4.5	4.5		4.5

**NOTE:** The values of minimum clearance in air are based on 1,2/50 ms impulse voltage, for barometric pressure of 80 kPa, equivalent to normal atmospheric pressure at 2 000 m above sea level.

## Creepage distances

The creepage distance is based on the rated voltage which is derived from the working voltage or nominal voltage of the supply system. The minimum creepage distances are allocated to the rated voltage according to the pollution degree and material group in table 15, IEC 60947-1.

In this catalog the products must be measured in compliance with IEC 60664-1 for overvoltage category III, pollution degree 3 and material group I, otherwise the product information would include additional details.

IEC 60947-1 Minimum creepage distances (Table15)															
Rated insulation voltage of equipment or working voltage a.c. r.m.s or d.c. <sup>4)</sup> V	Creepage distances for equipment subject to long term stress mm														
	Pollution degree			Pollution degree				Pollution degree				Pollution degree			
	1 <sup>5)</sup>	2 <sup>5)</sup>	1	2		3		4		4					
	Material group			Material group				Material group				Material group			
	1)	2)	1)	I	II	IIIa	IIIb	I	II	IIIa	IIIb	I	II	IIIa	IIIb
10	0.025	0.04	0.08	0.4	0.4	0.4	0.4	1	1	1	1.6	1.6	1.6		
12.5	0.025	0.04	0.09	0.42	0.42	0.42	0.42	1.05	1.05	1.05	1.6	1.6	1.6		
16	0.025	0.04	0.1	0.45	0.45	0.45	0.45	1.1	1.1	1.1	1.6	1.6	1.6		
20	0.025	0.04	0.11	0.48	0.48	0.48	0.48	1.2	1.2	1.2	1.6	1.6	1.6		
25	0.025	0.04	0.125	0.5	0.5	0.5	0.5	1.25	1.25	1.25	1.7	1.7	1.7		
32	0.025	0.04	0.14	0.53	0.53	0.53	0.53	1.3	1.3	1.3	1.8	1.8	1.8		
40	0.025	0.04	0.16	0.56	0.8	1.1	1.1	1.4	1.6	1.8	1.9	2.4	3		
50	0.025	0.04	0.18	0.6	0.85	1.2	1.2	1.5	1.7	1.9	2	2.5	3.2		
63	0.04	0.063	0.2	0.63	0.9	1.25	1.25	1.6	1.8	2	2.1	2.6	3.4		
80	0.063	0.1	0.22	0.67	0.95	1.3	1.3	1.7	1.9	2.1	2.2	2.8	3.6		
100	0.1	0.16	0.25	0.71	1	1.4	1.4	1.8	2	2.2	2.4	3	3.8		
125	0.16	0.25	0.28	0.75	1.05	1.5	1.5	1.9	2.1	2.4	2.5	3.2	4		
160	0.25	0.4	0.32	0.8	1.1	1.6	1.6	2	2.2	2.5	3.2	4	5		
200	0.4	0.63	0.42	1	1.4	2	2	2.5	2.8	3.2	4	5	6.3		
250	0.56	1	0.56	1.25	1.8	2.5	2.5	3.2	3.6	4	5	6.3	8		
320	0.75	1.6	0.75	1.6	2.2	3.2	3.2	4	4.5	5	6.3	8	10		
400	1	2	1	2	2.8	4	4	5	5.6	6.3	8	10	12.5		
500	1.3	2.5	1.3	2.5	3.6	5	5	6.3	7.1	8	10	12.5	16		
630	1.8	3.2	1.8	3.2	4.5	6.3	6.3	8	9	10	12.5	16	20		
800	2.4	4	2.4	4	5.6	8	8	10	11	12.5	16	20	25	3)	
1000	3.2	5	3.2	5	7.1	10	10	12.5	14	16	20	25	32		
1250			4.2	6.3	9	12.5	12.5	16	18	20	25	32	40		
1600			5.6	8	11	16	16	20	22	25	32	40	50		
2000			7.5	10	14	20	20	25	28	32	40	50	63		
2500			10	12.5	18	25	25	32	36	40	50	63	80		
3200			12.5	16	22	32	32	40	45	50	63	80	100		
4000			16	20	28	40	40	50	56	63	80	100	125		
5000			20	25	36	50	50	63	71	80	100	125	160		
6300			25	32	45	63	63	80	90	100	125	160	200		
8000			32	40	56	80	80	100	110	125	160	200	250		
10000			40	50	71	100	100	125	140	160	200	250	320		

1) Material groups I, II, IIIa, IIIb.

2) Material groups I, II, IIIa.

3) Values of creepage distances in this area have not been established. Material groups IIIb is in general not recommended for application in pollution degree 3 above 630 V and in pollution degree 4.

4) As an exception, for rated insulation voltages 127 V, 208 V, 415/440 V, 660/690 V and 830 V, creepage distances corresponding to the lower values 125 V, 200 V, 400 V, 630 V and 800 V respectively may be used.

5) The values given in these two columns apply to creepage distances of printing

circuit materials.

6) The values of creepage distances stated for 250 V can be used for 230 V (±10 %) normal voltage.

**NOTE 1** It is appreciated that tracking or erosion will not occur on insulation subjected to working voltages of 32 V and below. However, the possibility of electrolytic corrosion has to be considered and for this reason minimum creepage distances have been specified.

**NOTE 2** Voltage values are selected in accordance with the R<sub>10</sub> series.



## Dielectric test

The test is conducted on 5 adjacent terminal blocks, mounted on a metallic mounting rail and connected with rated cross-section conductors.

Test voltage must have a sinusoidal waveform with a frequency between 45 and 62 Hz.

The values applied, for 5 seconds, are those specified in the table 12A, IEC 60947-1. Irrespective of glow discharges without drop of voltage, no disruptive discharges shall occur during the test.

**IEC 60947-1**  
**Dielectric test voltage corresponding to the rated insulation voltage (Table 12A)**

Rated insulation voltage $U_i$ V	AC test voltage (r.m.s.) V	DC test voltage <sup>2), 3)</sup> V
$U_i < 60$	1000	1415
$60 < U_i < 300$	1500	2120
$300 < U_i < 690$	1890	2670
$690 < U_i < 800$	2000	2830
$800 < U_i < 1000$	2200	3110
$1000 < U_i < 1500^{1)}$	-	3820

1) For d.c. only.

2) Test voltages based on 4.1.2.3.1, third paragraph of IEC 60664-1.

3) A direct current test voltage may be used only if an alternating test voltage cannot be applied. See also 3) b) ii) of 8.3.3.4.1.

## Short-time withstand current

The standard IEC 947-7-1 obliges terminal blocks to withstand a current equal to 120A per each square mm of rated cross-section for 1 second.

## Voltage drop

Voltage drop at the terminal indicates an index of contact resistance against the follow of current. The voltage drop test is conducted before and after mechanical strength, short-time withstand current and temperature-rise tests. IEC 60947-7-1 states that the voltage drop, measured on a new terminal block, must be lower than 3.2 mV and after the tests lower than 150 % of the value measured before the tests.

## Temperature-rise test

The current in a terminal block causes overheating due to continuous operation. The overheating level shall not overcome a specified value, thus a temperature-rise test is applied to verify this performance requirement. The test is conducted by means of temperature-rise test on 5 neighboring terminal blocks connected at a test current as specified in table 4, IEC 60947-7-1. The temperature-rise of any part of the centrally located terminal block shall not exceed 45 K.

## IEC 60947-7-1

**Values of test current for temperature-rise test, ageing test and voltage drop test for metric wire sizes (Table 4)**

Rated cross-section mm <sup>2</sup>	Test current A	Rated cross-section mm <sup>2</sup>	Test current A
0.2	4	25	101
0.5	6	35	125
0.75	9	50	150
1	13.5	70	192
1.5	17.5	95	232
2.5	24	120	269
4	32	150	309
6	41	185	353
10	57	240	415
16	76	300	520

## Verification of thermal characteristics

The Thermal characteristics are checked by the needle flame test.

The test is carried out according to IEC60695-11-5 successively in the area of one clamping unit of three terminal blocks.

The test flame is applied to the surface of test specimen and removing after the specified time.

With no any glowing of the test specimen or extinguishing the sample within 30s, the test is passed.

## Vibration and shock resistant

### Shock Test

The purpose of this test is to reveal mechanical weakness and/or degradation in specified performances or accumulated damage or degradation caused by shocks.

The following test is done in accordance with required by the specifications: shock test to BS EN60068-2-27

Shock pulse: Half sine

Acceleration: 40g

Pulse duration: 6ms

Test directions: In all three major orthogonal axes

Number of shocks: 1000 in each axis

Total number: 3000

### Vibration Test

The purpose of this test is to determine the ability of components, equipments and other articles to withstand any mechanical weakness and/or degradation caused by vibration.

The following test is done in accordance with required by the specifications: swept sine vibration to BS EN 60068-2-6

Frequency range: 55 Hz to 2000 Hz

Test levels: 55 Hz to 58.1 Hz: 1.5mm displacement peak to peak  
58.1 Hz to 2000 Hz: 100 m/s<sup>2</sup> (10g)

Vibration directions: In all three major orthogonal axes

Duration: 10 swept cycles in each axis

Sweep rate: 1 octave/minute

# Wiring Duct Tests

The following tests as type tests should be carried out for testing of wiring ducts in accordance with the main standards EN 50085-1 and EN 50085-2-3:

### Check marking

Each system component shall be marked with:

- The manufacturer's or responsible vendor's name or trade mark or identification mark,
- A product identification mark, which may be, for example a catalog number, a symbol or the like.

### Cable support test

Each test is made on one sample of slotted trunking length having a length of about 250 mm.

The sample is securely fixed to a rigid support. Then the sample is subjected to an evenly distributed load of 0.8 g/mm<sup>2</sup> for metre length of the declared usable area for cables.

The load consists of copper cables, half load cables of 25 mm<sup>2</sup> nominal cross section and other half cables of 2.5 mm<sup>2</sup> nominal cross section. This load is preserved for 2 h in climatic chamber to 60 °C.

After about 2 h, with the load still applied, the distortion shall not exceed 10% of the height with a maximum of 10 mm.

The Same result shall be obtained for the width.

### Impact test for storage and transport

The test is carried out on the samples of trunking lengths each about 250 mm long.

Before the test, the samples are aged at the temperature of 70 °C for 168 h continuously.

The test apparatus consists basically of a hammer which falls freely from rest, through a vertical height on to an intermediate part placed on the sample held in a horizontal plane.

The mass of the hammer is 0.5 kg and the fall height is 100 mm.

The samples are placed in a refrigerator at the temperature of -45° C for 2 h.

Within 10 s after the removal of the sample from the refrigerator the hammer is allowed to fall so that an impact is applied to the centre of the cover or the centre of the bottom of the base .

After the test the samples shall show no signs of disintegration nor shall there be any cracks, that are likely to impair safety.

### Insulation resistance test

Before the test, the sample shall be placed in the humidity cabinet with a relative humidity between 91% and 95% at a temperature maintained between 25 °C and 30 °C.

The samples are kept in the cabinet for 120 h .

Immediately after conditioning, two conductive foils used as electrodes are applied, one to the outer surface and one to the inner surface of the sample .

The insulation resistance is measured by applying a d.c. voltage of 500 V between the electrodes.

The measurement is made 60 s after the application of the voltage.

The insulation resistance shall not be less than 100 MΩ.

### Dielectric strength test

Immediately after the insulation resistance test, a voltage of  $(2 U_n + 1000)$  V, where  $U_n$  is the rated voltage of substantially sine-wave form and having a nominal frequency of 50 Hz, is then applied between electrodes.

Initially not more than half the voltage is applied and then it is raised to the test voltage as rapidly as possible without transient over voltage.

The voltage is maintained for about 5 s.

No flashover or breakdown shall occur during the test.

### Resistance to heat

The part under the test shall be placed on a 3 mm thick steel plate in direct contact with it so as to be supported to withstand the test force .

When it is not possible to carry out the test on the sample, the test shall be carried out on a piece of the same material with at least 2 mm thick .

The surface of the part to be tested is placed in the horizontal position and a steel ball of 5 mm diameter is pressed against the surface with a force of 20 N .

The test is carried out in a heating cabinet at the temperature of 70 °C.

After 1 h, the ball is removed from the sample which is then cooled down within 10 s to approximately room temperature by immersion in cold water.

The diameter of the impression caused by the ball is measured and shall not exceed 2 mm.



● **Resistance to flame propagation (needle flame test)**

This test is carried out in according to standard EN 60695-11-5 at the following conditions.

The test is made on two sets of samples whose length is about 675 mm.

The sample is placed vertically with its lower extremity about 100 mm above the tissue covered pinewood board, in a rectangular metal enclosure with an open face.

It shall be securely fixed to a rigid support through the fixing holes, in the base of the trunking .

The burner (needle flame) is positioned on the sample in such a way that the axis forms an angle of about 45° with the horizontal one, and the flame is applied centrally to the boundary of an opening of the wall approximately 200 mm above the wrapping tissue covered pinewood board, the end of the burner tube being distanced 5 mm from the sample.

The test is repeated but with the burner applied to one extremity of the cover.

The sample is subjected to the exposure of the flame for 60 s each time.

The sample is regarded as having passed the test if:





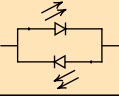







- it does not ignite ; or if
- in the case of ignition, the flames or glowing of the sample extinguish within 30 s after removal of the test flame and there is no ignition of the wrapping tissue or scorching of the pinewood board.

● **Fire hazard**

- Compliance is checked by glow wire test in accordance with the standards EN 50085-1 and EN 60695-2-11.

**Symbols**

In circuit diagrams, the following symbols have been used as minimum:

Clamp	
Test Socket connection	
Resistor	
Diode	
Bipolar LED	
Fuse	
Neon Lamp	
Ground	
Moveable Link	
Sliding Connection	
Disconnectable	
Cross Connection/ Bridge Comb	

The applicability of test sockets are shown in the schematic diagrams of only test/disconnect terminal blocks, for its usage on other terminal blocks, refer to related descriptions..

# INDEX

Type	Ordering No.	Qty (Box)	Qty(Carton)	Page	Type	Ordering No.	Qty (Box)	Qty(Carton)	Page
<b>A</b>					CC3-35	6020502432	20	-	81
ARS/M6	6090202001	10	-	114	CC3-50	6020502452	10	-	81
<b>B</b>					CC3-95	6020502492	10	-	81
B16/2	6010102001	96	960	65	CC3-D4	6020503002	50	-	81
B16/3	6010102002	32	512	65	CC4-4	6020502103	50	2000	81
B16/4	6010102003	48	480	65	CC10-2.5	6020502009	10	500	81
B16/5	6010102004	32	320	65	CC10-4	6020502109	10	500	81
B16/6	6010102005	30	300	65	CC10-6	6020502209	10	500	81
B16/8	6010102006	24	240	65	CC10-10	6020502309	10	500	81
B16/10	6010102007	16	160	65	CC10-16	6020502409	10	250	81
B16/12	6010102008	8	128	65	CC10-25	6020502419	10	-	81
BC2-2.5	6020504001	50	-	81	CC10-35	6020502439	10	-	81
BC2-4	6020504101	50	-	81	CC10-D4	6020503009	10	-	81
BC2-D4	6020504201	50	-	81	<b>D</b>				
BC3-2.5	6020504002	50	-	81	DPB	6070303001	10	160	109
BC3-4	6020504102	50	-	81	DPBL	6070303002	10	160	109
BC3-D4	6020504202	50	-	81	DPIT 2.5	6011101001	50	500	56
BC10-2.5	6020504009	10	-	81	DRTP2.5/4	6010728005	50	800	33
BC10-4	6020504109	10	1000	81	DRTP2.5/4-L	6010729005	50	800	33
BC10-D4	6020504209	10	-	81	DRTP4	6010701005	50	800	34
BS10-2.5	6020505009	10	-	81	DSO	6080101001	5	50	104
BS3-2.5	6020505002	50	-	81	DSO-LD	6080201001	5	50	104
BS2-2.5	6020505001	50	-	81	<b>E</b>				
BS3-4	6020505102	50	-	81	EB/1	6020101001	50	1000	83
BS2-4	6020505101	50	-	81	EB/2	6020101002	50	600	83
BS3-6	6020505203	50	-	81	EB/3	6020101003	50	1000	83
BS2-6	6020505201	50	-	81	EB/32	6020101004	50	1000	83
<b>C</b>					ELB/1	6020102003	50	1200	83
CB11	6020802001	10	800	79	EP-RDT4	6020204101	100	1000	79
CC2-2.5	6020502001	50	2000	81	EP-RSTP6	6020201004	50	900	79
CC2-4	6020502101	50	2000	81	EP-RSTN6	6020201006	50	900	79
CC2-6	6020502201	50	2000	81	EP-RSTI6	6020201003	50	600	79
CC2-10	6020502301	50	2000	81	EP-RTP2.5 Blue	6020202001	100	2000	79
CC2-16	6020502401	20	800	81	EP-RTP2.5 Gray	6020202005	100	2000	79
CC2-25	6020502411	20	-	81	EP-RTP2.5 Red	6020202006	100	2000	79
CC2-35	6020502431	20	-	81	EP-RTP2.5 Yellow	6020202004	100	2000	79
CC2-50	6020502451	10	-	81	EP-RTP4,6,10 Black	6020202109	50	3000	79
CC2-95	6020502491	10	-	81	EP-RTP4,6,10 Blue	6020202101	50	3000	79
CC2-150	6020502511	10	-	81	EP-RTP4,6,10 Brown	6020202107	50	3000	79
CC2-D4	6020503001	50	-	81	EP-RTP4,6,10 Gray	6020202105	50	3000	79
CC3-2.5	6020502002	50	2000	81	EP-RTP4,6,10 Green	6020202102	50	3000	79
CC3-4	6020502102	50	2000	81	EP-RTP4,6,10 Red	6020202106	50	3000	79
CC3-6	6020502202	50	2000	81	EP-RTP4,6,10 Yellow	6020202104	50	3000	79
CC3-10	6020502302	50	2000	81	EP-RTS2.5	6020205001	100	2000	79
CC3-16	6020502402	20	800	81	EP-RTS4	6020205101	100	2000	79
CC3-25	6020502412	20	-	81	EP-RTS6	6020205201	50	3000	79

Type	Ordering No.	Qty (Box)	Qty(Carton)	Page	Type	Ordering No.	Qty (Box)	Qty(Carton)	Page
EP-DRTP2.5/4	6020203001	20	-	79	NS5(DC6...BT24)	6030200004	10	-	72
EP1-DRTP4	6020203002	20	500	79	NS5(RS1...DC5)	6030200005	10	-	72
EP2-DRTP4	6020203003	20	400	79	NS5(ALM...JU2)	6030200006	10	-	72
EP3-DRTP4	6020203004	20	500	79	NS5(WL...MP)	6030200007	10	-	72
ESTR	6070301002	10	-	109	NS5(1...10)	6030200008	10	-	72
<b>F</b>					NS5(11...20)	6030200009	10	-	72
FB-O Black	6070302006	15	240	109	NS5(21...30)	6030200010	10	-	72
FB-O Blue	6070302004	15	240	109	NS5(31...40)	6030200011	10	-	72
FB-O Green	6070302001	15	240	109	NS5(41...50)	6030200012	10	-	72
FB-O Yellow	6070302005	15	240	109	NS5(51...60)	6030200013	10	-	72
FB-C	6070301001	15	240	109	NS5(61...70)	6030200014	10	-	72
FBL-O	6070302002	15	240	109	NS5(1...50)	6030200015	10	-	72
FBL-C	6070301003	15	240	109	NS5(51...100)	6030200016	10	-	72
FRS-70	6090201006	10	-	114	NS5(101...150)	6030200017	10	-	72
FRS-90	6090201007	10	-	114	NS5(151...200)	6030200018	10	-	72
<b>G</b>					NS5(201...250)	6030200019	10	-	72
GP Blue	6020305001	20	600	79	NS5(251...300)	6030200020	10	-	72
GP Gray	6020305005	20	600	79	NS5(RS1...DC2)	6030200021	10	-	72
<b>H</b>					NS5(DC3...ER)	6030200022	10	-	72
HWD 20x12	6110204003	65	130	94	NS5(ALM...72)	6030200023	10	-	72
HWD 20x20	6110204004	42	84	94	NS6 (-----)	6030300071	10	1700	72
HWD 25x20	6110205004	36	72	94	NS6 (+~.....)	6030300032	10	1700	72
HWD 30x30	6110206006	20	40	94	NS6 (+++.....)	6030300068	10	1700	72
HWD 40x40	6110208008	20	40	94	NS6 (0....9)	6030300026	10	1700	72
HWD 60x40	6110212008	16	32	94	NS6 (000....)	6030300078	10	1700	72
HWD 60x60	6110212012	12	24	94	NS6 (1....10)	6030300013	10	1700	72
HWD 100x60	6110220020	6	12	94	NS6 (1....50)	6030300038	10	1700	72
<b>J</b>					NS6 (10,10....)	6030300027	10	1700	72
JEB2-6	6020506001	50	2000	81	NS6 (10....500)	6030300048	10	1700	72
JEB3-6	6020506002	50	2000	81	NS6 (101....110)	6030300091	10	1700	72
JEB10-6	6020506009	10	-	81	NS6 (101....150)	6030300039	10	1700	72
<b>L</b>					NS6 (151....200)	6030300100	10	1700	72
L2	6020501001	50	-	82	NS6 (16....20)	6030300033	10	1700	72
L3	6020501002	50	-	82	NS6 (1CF...VLL)	6030300113	10	1700	72
L4	6020501003	50	-	82	NS6 (1U.....)	6030300101	10	1700	72
LB/1	6020102001	50	400	73	NS6 (1V....)	6030300115	10	1700	72
LB/2	6020102002	50	400	73	NS6 (1W....)	6030300116	10	1700	72
<b>M</b>					NS6 (201....250)	6030300085	10	1700	72
MGC1/M5	6090252003	5	-	114	NS6 (21....25)	6030300035	10	1700	72
MGC2/M5	6090252004	5	-	114	NS6 (21....30)	6030300056	10	1700	72
ML2/N	6020602001	50	-	82	NS6 (222.....)	6030300006	10	1700	72
ML3/N	6020602002	50	-	82	NS6 (251....300)	6030300086	10	1700	72
ML4/N	6020602003	50	-	82	NS6 (26....30)	6030300036	10	1700	72
<b>N</b>					NS6 (2U.....)	60303000112	10	1700	72
NS5(12...C2)	6030200002	10	-	72	NS6 (2V....)	6030300125	10	1700	72
NS5(MPD...11)	6030200003	10	-	72	NS6 (2W....)	6030300120	10	1700	72

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NS6 (301....350)	6030300087	10	1700	72	NS6 (DC1....1)	6030300104	10	1700	72
NS6 (31....35)	6030300040	10	1700	72	NS6 (DC1....80)	6030300106	10	1700	72
NS6 (31....40)	6030300060	10	1700	72	NS6 (DD2....GL)	6030300103	10	1700	72
NS6 (333....)	6030300010	10	1700	72	NS6 (DD9....W0)	6030300093	10	1700	72
NS6 (351....400)	6030300080	10	1700	72	NS6 (FIR....6KT)	6030300110	10	1700	72
NS6 (36....40)	6030300049	10	1700	72	NS6 (FLC....G22)	6030300089	10	1700	72
NS6 (3U....)	6030300126	10	1700	72	NS6(FTO....MP)	6030300084	10	1700	72
NS6 (3V.....)	6030300129	10	1700	72	NS6 (L,L.....)	6030300127	10	1700	72
NS6 (3W....)	6030300124	10	1700	72	NS6 (L,L....B)	6030300132	10	1700	72
NS6 (401....450)	6030300081	10	1700	72	NS6 (L1,L2,L3,N...)	6030300011	10	1700	72
NS6 (41....45)	6030300050	10	1700	72	NS6 (L1,L2,L3....)	6030300133	10	1700	72
NS6 (41....50)	6030300064	10	1700	72	NS6 (LMP....-22)	6030300024	10	1700	72
NS6 (444....)	6030300014	10	1700	72	NS6 (LPE.....)	6030300092	10	1700	72
NS6 (451....500)	6030300090	10	1700	72	NS6 (MP....316)	6030300003	10	1700	72
NS6 (46....50)	6030300051	10	1700	72	NS6 (MP....OVL)	6030300004	10	1700	72
NS6 (51....100)	6030300036	10	1700	72	NS6 (N,N.....)	6030300128	10	1700	72
NS6 (51....55)	6030300053	10	1700	72	NS6(NB.....O)	6030300016	10	1700	72
NS6 (51....60)	6030300117	10	1700	72	NS6 (OVL.....FLC)-A	6030300088	10	1700	72
NS6 (51....66)	6030300105	10	1700	72	NS6 (OVL....FLC)-B	6030300009	10	1700	72
NS6 (555....)	6030300018	10	1700	72	NS6 (PE,PE....)	6030300111	10	1700	72
NS6 (56....60)	6030300054	10	1700	72	NS6 (PHC..... O)	6030300015	10	1700	72
NS6 (61....65)	6030300055	10	1700	72	NS6 (R.....)	6030300131	10	1700	72
NS6 (61....70)	6030300118	10	1700	72	NS6 (RSTN....)	6030300034	10	1700	72
NS6 (66....70)	6030300057	10	1700	72	NS6 (S,S,S.....)	6030300005	10	1700	72
NS6 (666....)	6030300021	10	1700	72	NS6(SP1....SP2)	6030300012	10	1700	72
NS6 (71....75)	6030300057	10	1700	72	NS6 (UVW.....)	6030300094	10	1700	72
NS6 (71....80)	6030300119	10	1700	72	NS6 (UVW....MP)	6030300070	10	1700	72
NS6 (76....80)	6030300059	10	1700	72	NS6(UVWN....)	6030300047	10	1700	72
NS6 (777....)	6030300022	10	1700	72	NS6 (VLL.....V0)	6030300098	10	1700	72
NS6 (81....85)	6030300061	10	1700	72	NS6 (X,Y,Z,N.....)	6030300007	10	1700	72
NS6 (81....90)	6030300121	10	1700	72	NS6 (XVL....PHC)	6030300109	10	1700	72
NS6 (86....90)	6030300062	10	1700	72	NS6 (Y.....)	6030300130	10	1700	72
NS6 (888....)	6030300023	10	1700	72	NS6 White	6030300001	10	1700	72
NS6 (91....100)	6030300073	10	1700	72	NS6(111....)	6030300002	10	1700	72
NS6 (91....95)	6030300063	10	1700	72	NS6(FLC...+24)	6030300017	10	1700	72
NS6 (96....100)	6030300065	10	1700	72	NS6(FLC...+24)-B	6030300019	10	1700	72
NS6 (999....)	6030300025	10	1700	72	NS6(P2...10)	6030300020	10	1700	72
NS6 (ABC....X)	6030300045	10	1700	72	NS6(110i...-B)	6030300028	10	1700	72
NS6 (ABC....Z)	6030300046	10	1700	72	NS6(RS1...B2)	6030300029	10	1700	72
NS6 (ALM....CM)	6030300099	10	1700	72	NS6(T1...+BT)	6030300030	10	1700	72
NS6 (B1....DCH)	6030300096	10	1700	72	NS6(CPL2)	6030300082	10	1700	72
NS6 (BB.....)	6030300107	10	1700	72	NS6(BR1...FTO)-C	6030300083	10	1700	72
NS6 (BR1.....FTO)-A	6030300084	10	1700	72	NS6(501...550)	6030300095	10	1700	72
NS6 (BR1.....FTO)-B	6030300008	10	1700	72	NS6(G22...G90)	6030300108	10	1700	72
NS6 (C.....0)	6030300013	10	1700	72	NS6(FIR...6KT)	6030300110	10	1700	72

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NS6(E.E.E)	6030300122	10	1700	72	NS6.4 (...EARTH)	6030400170	10	1700	72
NS6(G90...CBN)	6030300123	10	1700	72	NS6.4 (0....9)	6030400035	10	1700	72
NS6(11...15)	6030300032	10	1700	72	NS6.4 (000....)	6030400105	10	1700	72
NS6(BR1...H8)	6030300041	10	1700	72	NS6.4 (01.....01)	6030400020	10	1700	72
NS6(BR1...FLC)	6030300052	10	1700	72	NS6.4 (1....10)	6030400042	10	1700	72
NS6(11...20)	6030300066	10	1700	72	NS6.4 (1....50)	6030400054	10	1700	72
NS6(111...120)	6030300067	10	1700	72	NS6.4 (10,10....)	6030400038	10	1700	72
NS6(121...130)	6030300069	10	1700	72	NS6.4 (10....500)	6030400172	10	1700	72
NS6(131...140)	6030300072	10	1700	72	NS6.4 (101....110)	6030400061	10	1700	72
NS6(1...G22)	6030300074	10	1700	72	NS6.4 (101....150)	6030400140	10	1700	72
NS6(110...ER)	6030300074	10	1700	72	NS6.4 (11....15)	6030400141	10	1700	72
NS6(+...FLC)	6030300075	10	1700	72	NS6.4 (11....20)	6030400046	10	1700	72
NS6(COM...D)	6030300076	10	1700	72	NS6.4 (11....234)	6030400069	10	1700	72
NS6(141...150)	6030300077	10	1700	72	NS6.4 (111....)	6030400002	10	1700	72
NS6(E...98)	6030300134	10	1700	72	NS6.4 (111....120)	6030400062	10	1700	72
NS6(11...64)	6030300135	10	1700	72	NS6.4 (12....264)	6030400036	10	1700	72
NS6(634...721)	6030300136	10	1700	72	NS6.4 (121....130)	6030400063	10	1700	72
NS6(C9...24)	6030300137	10	1700	72	NS6.4 (125....167)	6030400198	10	1700	72
NS6(BR1...G22)	6030300138	10	1700	72	NS6.4 (131....140)	6030400064	10	1700	72
NS6(24...CBN)	6030300139	10	1700	72	NS6.4 (141....150)	6030400065	10	1700	72
NS6(S4...L5D)	6030300140	10	1700	72	NS6.4 (15,15....)	6030400041	10	1700	72
NS6(S2...CF3)	6030300141	10	1700	72	NS6.4 (151....200)	6030400111	10	1700	72
NS6(1CF...110)	6030300142	10	1700	72	NS6.4 (16....20)	6030400044	10	1700	72
NS6(90A...ECN)	6030300143	10	1700	72	NS6.4 (1C....ASH)	6030400226	10	1700	72
NS6(CRV...DC7)	6030300144	10	1700	72	NS6.4 (1CF...VLL)	6030400131	10	1700	72
NS6(DC8...LF1)	6030300145	10	1700	72	NS6.4 (1U....)	6030400129	10	1700	72
NS6(LF2...LMP)	6030300146	10	1700	72	NS6.4 (1V....)	6030400134	10	1700	72
NS6(UEL...B2)	6030300147	10	1700	72	NS6.4 (1W....)	6030400137	10	1700	72
NS6(5KT...O2)	6030300148	10	1700	72	NS6.4 (201....250)	6030400114	10	1700	72
NS6(DR9...DC9)	6030300149	10	1700	72	NS6.4 (21....25)	6030400048	10	1700	72
NS6(AL...12)	6030300150	10	1700	72	NS6.4 (21....30)	6030400082	10	1700	72
NS6(A1...P5)	6030300151	10	1700	72	NS6.4 (222....)	6030400006	10	1700	72
NS6(A1...Y2)	6030300152	10	1700	72	NS6.4 (241....294)	6030400015	10	1700	72
NS6(A1...Y2)-B	6030300153	10	1700	72	NS6.4 (251....300)	6030400115	10	1700	72
NS6(A1...P1)	6030300154	10	1700	72	NS6.4 (254....283)	6030400112	10	1700	72
NS6(A1...P1)-B	6030300155	10	1700	72	NS6.4 (26....30)	6030400052	10	1700	72
NS6(A1...Y1)	6030300156	10	1700	72	NS6.4 (271....344)	6030400194	10	1700	72
NS6(A1...A2)	6030300157	10	1700	72	NS6.4 (274....893)	6030400196	10	1700	72
NS6(A1...P3)	6030300158	10	1700	72	NS6.4 (2U....)	6030400130	10	1700	72
NS6(A1...P12)	6030300159	10	1700	72	NS6.4 (2V....)	6030400181	10	1700	72
NS6(A1...A4)	6030300160	10	1700	72	NS6.4 (2W....)	6030400138	10	1700	72
NS6(A1...P2)	6030300161	10	1700	72	NS6.4 (301....350)	6030400116	10	1700	72
NS6.4 (...-)	6030400097	10	1700	72	NS6.4 (31....35)	6030400158	10	1700	72
NS6.4 (...+)	6030400093	10	1700	72	NS6.4 (31....40)	6030400086	10	1700	72
NS6.4 (...+++)	6030400074	10	1700	72	NS6.4 (333....)	6030400010	10	1700	72



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NS6.4 (351....400)	6030400117	10	1700	72	NS6.4 (888....)	6030400030	10	1700	72
NS6.4 (36....40)	6030400075	10	1700	72	NS6.4 (9.13.5....)-A	6030400136	10	1700	72
NS6.4 (3U....)	6030400183	10	1700	72	NS6.4 (9.13.5....)-B	6030400180	10	1700	72
NS6.4 (3V....)	6030400186	10	1700	72	NS6.4 (9.13.5....)-C	6030400179	10	1700	72
NS6.4 (3W....)	6030400181	10	1700	72	NS6.4 (9.13.5....)-D	6030400191	10	1700	72
NS6.4 (401....450)	6030400118	10	1700	72	NS6.4 (9.13.5....)-E	6030400192	10	1700	72
NS6.4 (41....45)	6030400076	10	1700	72	NS6.4 (902....124)	6030400197	10	1700	72
NS6.4 (41....50)	6030400058	10	1700	72	NS6.4 (91....100)	6030400060	10	1700	72
NS6.4 (419....404)	6030400123	10	1700	72	NS6.4 (91....95)	6030400089	10	1700	72
NS6.4 (44.....W)	6030400228	10	1700	72	NS6.4 (96....100)	6030400091	10	1700	72
NS6.4 (444....)	6030400014	10	1700	72	NS6.4 (999....)	6030400034	10	1700	72
NS6.4 (451....500)	6030400119	10	1700	72	NS6.4 (A,B,L....)	6030400011	10	1700	72
NS6.4 (46....50)	6030400077	10	1700	72	NS6.4 (AB.....25)	6030400122	10	1700	72
NS6.4 (501....550)	6030400199	10	1700	72	NS6.4 (ABC....X)	6030400263	10	1700	72
NS6.4 (51....100)	6030400109	10	1700	72	NS6.4 (ABC....Z)	6030400128	10	1700	72
NS6.4 (51....55)	6030400079	10	1700	72	NS6.4 (ADR....D9B)	6030400278	10	1700	72
NS6.4 (51....60)	6030400055	10	1700	72	NS6.4 (ALM....CM)	6030400128	10	1700	72
NS6.4 (555....)	6030400018	10	1700	72	NS6.4 (B.B....)	6030400135	10	1700	72
NS6.4 (551....600)	6030400200	10	1700	72	NS6.4 (BT+....W0)-B	6030400096	10	1700	72
NS6.4 (56....60)	6030400080	10	1700	72	NS6.4 (BT+....W0)-C	6030400016	10	1700	72
NS6.4 (601....650)	6030400201	10	1700	72	NS6.4 (BT+....W0)-A	6030400266	10	1700	72
NS6.4 (61....65)	6030400081	10	1700	72	NS6.4 (C5....UDL)	6030400274	10	1700	72
NS6.4 (61....70)	6030400056	10	1700	72	NS6.4 (CA1....V3)	6030400271	10	1700	72
NS6.4 (651....700)	6030400202	10	1700	72	NS6.4 (COM.....T7)	6030400120	10	1700	72
NS6.4 (66....1)	6030400013	10	1700	72	NS6.4 (CRV....69)-A	6030400267	10	1700	72
NS6.4 (66....70)	6030400083	10	1700	72	NS6.4 (CRV....69)-B	6030400095	10	1700	72
NS6.4 (666....)	6030400022	10	1700	72	NS6.4 (CRV....71)	6030400012	10	1700	72
NS6.4 (68....L5D)	6030400269	10	1700	72	NS6.4 (CRV....ECN)	6030400264	10	1700	72
NS6.4 (68....T)	6030400279	10	1700	72	NS6.4 (D....C4)	6030400273	10	1700	72
NS6.4 (70,71,132....)	6030400009	10	1700	72	NS6.4 (D7....OVR)	6030400270	10	1700	72
NS6.4 (701....750)	6030400203	10	1700	72	NS6.4 (D9....U10)	6030400276	10	1700	72
NS6.4 (71....75)	6030400084	10	1700	72	NS6.4 (DC1....80)	6030400127	10	1700	72
NS6.4 (71....80)	6030400057	10	1700	72	NS6.4 (DD9....W0)	6030400221	10	1700	72
NS6.4 (751....800)	6030400204	10	1700	72	NS6.4 (EC1....L5D)	6030400265	10	1700	72
NS6.4 (76....80)	6030400085	10	1700	72	NS6.4 (FN1.FN2.FN3)	6030400024	10	1700	72
NS6.4 (777....)	6030400026	10	1700	72	NS6.4 (H8.....TP4)	6030400021	10	1700	72
NS6.4 (80....VO)-A	6030400094	10	1700	72	NS6.4 (L,L....B)	6030400007	10	1700	72
NS6.4 (80....CCA)	6030400071	10	1700	72	NS6.4 (L....)	6030400184	10	1700	72
NS6.4 (80....VO)-B	6030400008	10	1700	72	NS6.4 (L1,L2,L3....)	6030400222	10	1700	72
NS6.4 (801....850)	6030400205	10	1700	72	NS6.4 (L1L2....N)	6030400133	10	1700	72
NS6.4 (81....85)	6030400087	10	1700	72	NS6.4 (L3....43)	6030400227	10	1700	72
NS6.4 (81....90)	6030400089	10	1700	72	NS6.4 (L3....D6)	6030400223	10	1700	72
NS6.4 (84....53)	6030400099	10	1700	72	NS6.4 (LMP....-22)	6030400220	10	1700	72
NS6.4 (851....900)	6030400206	10	1700	72	NS6.4 (LPE....)	6030400121	10	1700	72
NS6.4 (86....90)	6030400088	10	1700	72	NS6.4 (MP....LAP2)	6030400229	10	1700	72

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NS6.4 (N....)	6030400185	10	1700	72	NS6.4(26.26.26)	6030400100	10	1700	72
NS6.4 (P1.P2)	6030400025	10	1700	72	NS6.4(27.27.27)	6030400100	10	1700	72
NS6.4 (PE,PE....)	6030400139	10	1700	72	NS6.4(28.28.28)	6030400102	10	1700	72
NS6.4 (R....)	6030400188	10	1700	72	NS6.4(29.29.29)	6030400103	10	1700	72
NS6.4 (R....S....CFD)	6030400124	10	1700	72	NS6.4(30.30.30)	6030400104	10	1700	72
NS6.4 (RSTN....)	6030400113	10	1700	72	NS6.4(...EARTH)	6030400072	10	1700	72
NS6.4 (SP1.....20)	6030400028	10	1700	72	NS6.4(27...60)	6030400053	10	1700	72
NS6.4 (SP1....S2)	6030400003	10	1700	72	NS6.4(11...234)	6030400069	10	1700	72
NS6.4 (SP1....V2)-A	6030400029	10	1700	72	NS6.4(81...95)	6030400098	10	1700	72
NS6.4 (SP1....V2)-B	6030400027	10	1700	72	NS6.4(1...5)	6030400106	10	1700	72
NS6.4 (SP1....W6)	6030400073	10	1700	72	NS6.4(A.B.C.D.E)	6030400107	10	1700	72
NS6.4 (TP3.....P)	6030400023	10	1700	72	NS6.4(12...X0)	6030400108	10	1700	72
NS6.4 (U1....MP)	6030400019	10	1700	72	NS6.4(v6...CF)	6030400110	10	1700	72
NS6.4 (U11....57C)	6030400277	10	1700	72	NS6.4(419...404)	6030400123	10	1700	72
NS6.4 (UL....C)	6030400275	10	1700	72	NS6.4(1CF...VLL)	6030400131	10	1700	72
NS6.4 (UVW....)	6030400132	10	1700	72	NS6.4(N...19)	6030400141	10	1700	72
NS6.4 (UVW....MP)	6030400017	10	1700	72	NS6.4(E.N...E)	6030400142	10	1700	72
NS6.4 (UVWN....)	6030400070	10	1700	72	NS6.4(E.N...20)	6030400143	10	1700	72
NS6.4 (V48.....COM)	6030400032	10	1700	72	NS6.4(N.20...6)	6030400144	10	1700	72
NS6.4 (V48....C2)	6030400031	10	1700	72	NS6.4(N.26...E)	6030400145	10	1700	72
NS6.4 (V48....CMA)	6030400224	10	1700	72	NS6.4(E.N....W)	6030400146	10	1700	72
NS6.4 (V48....DS2)	6030400005	10	1700	72	NS6.4(CFU...CFD)	6030400147	10	1700	72
NS6.4 (V48....S1)	6030400004	10	1700	72	NS6.4(L6...46)	6030400148	10	1700	72
NS6.4 (V48....SR2)	6030400225	10	1700	72	NS6.4(47...O)	6030400149	10	1700	72
NS6.4 (VL....GND)	6030400033	10	1700	72	NS6.4(L3...LAP1)	6030400150	10	1700	72
NS6.4 (VLL....V0)	6030400126	10	1700	72	NS6.4(419.....)	6030400151	10	1700	72
NS6.4 (W3....C)	6030400227	10	1700	72	NS6.4(RL...LF1)	6030400152	10	1700	72
NS6.4 (X1....11)	6030400193	10	1700	72	NS6.4(LF2...SP2)	6030400153	10	1700	72
NS6.4 (X0....273)	6030400195	10	1700	72	NS6.4(81...LF2)	6030400154	10	1700	72
NS6.4 (Y....)	6030400187	10	1700	72	NS6.4(ST...23)	6030400155	10	1700	72
NS6.4 White	6030400001	10	1700	72	NS6.4(X.X....)	6030400156	10	1700	72
NS6.4(11.11.11)	6030400037	10	1700	72	NS6.4(Z.Z....)	6030400157	10	1700	72
NS6.4(12.12.12)	6030400039	10	1700	72	NS6.4(RL...G)	6030400159	10	1700	72
NS6.4(13.13.13)	6030400040	10	1700	72	NS6.4(MP...LA2)	6030400160	10	1700	72
NS6.4(14.14.14)	6030400045	10	1700	72	NS6.4(H9...G22O)	6030400161	10	1700	72
NS6.4(16.16.16)	6030400047	10	1700	72	NS6.4(419A....)	6030400162	10	1700	72
NS6.4(17.17.17)	6030400049	10	1700	72	NS6.4(420.....)	6030400163	10	1700	72
NS6.4(18.18.18)	6030400050	10	1700	72	NS6.4(110.....)	6030400164	10	1700	72
NS6.4(19.19.19)	6030400051	10	1700	72	NS6.4(401.....)	6030400165	10	1700	72
NS6.4(20.20.20)	6030400066	10	1700	72	NS6.4(400.....)	6030400166	10	1700	72
NS6.4(21.21.21)	6030400067	10	1700	72	NS6.4(400A....)	6030400167	10	1700	72
NS6.4(22.22.22)	6030400068	10	1700	72	NS6.4(402.....)	6030400168	10	1700	72
NS6.4(23.23.23)	6030400078	10	1700	72	NS6.4(403.....)-A	6030400169	10	1700	72
NS6.4(24.24.24)	6030400090	10	1700	72	NS6.4(404.....)	6030400170	10	1700	72
NS6.4(25.25.25)	6030400092	10	1700	72	NS6.4(410.....)-A	6030400171	10	1700	72

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NS6.4(411.....)	6030400173	10	1700	72	NS6.4(51.53.55.57.59)	6030400253	10	1700	72
NS6.4(10....500)	6030400172	10	1700	72	NS6.4(52.54.56.58.60)	6030400254	10	1700	72
NS6.4(H8...MPC)	6030400174	10	1700	72	NS6.4(61.63.65.67.69)	6030400255	10	1700	72
NS6.4(68...G22)	6030400175	10	1700	72	NS6.4(62.64.66.68.70)	6030400256	10	1700	72
NS6.4(870...X3)-A	6030400176	10	1700	72	NS6.4(71.73.75.77.79)	6030400257	10	1700	72
NS6.4(1...244)	6030400177	10	1700	72	NS6.4(72.74.76.78.80)	6030400258	10	1700	72
NS6.4(251...344)	6030400178	10	1700	72	NS6.4(81.83.85.87.89)	6030400259	10	1700	72
NS6.4(1,2,3,N,Y,B)	6030400189	10	1700	72	NS6.4(82.84.86.88.90)	6030400260	10	1700	72
NS6.4(MP.....)	6030400190	10	1700	72	NS6.4(91.93.95.97.99)	6030400261	10	1700	72
NS6.4(BR+....)	6030400207	10	1700	72	NS6.4(92.94.96.98.100)	6030400262	10	1700	72
NS6.4(BR-....)	6030400208	10	1700	72	NS6.4(GND...)	6030400268	10	1700	72
NS6.4(SP.....)	6030400209	10	1700	72	NS6.4(MP...W)	6030400280	10	1700	72
NS6.4(DO.....)	6030400210	10	1700	72	NS6.4(410...)-B	6030400281	10	1700	72
NS6.4(OVL...)	6030400211	10	1700	72	NS6.4(403...)-B	6030400282	10	1700	72
NS6.4(T.....)	6030400212	10	1700	72	NS6.4(1...19)	6030400283	10	1700	72
NS6.4(SN.....)	6030400213	10	1700	72	NS6.4(21...39)	6030400284	10	1700	72
NS6.4(274...893)-B	6030400214	10	1700	72	NS6.4(41...59)	6030400285	10	1700	72
NS6.4(902...124)-B	6030400215	10	1700	72	NS6.4(61...79)	6030400286	10	1700	72
NS6.4(OL.....)	6030400216	10	1700	72	NS6.4(2...20)	6030400287	10	1700	72
NS6.4(CL.....)	6030400217	10	1700	72	NS6.4(1...19)	6030400283	10	1700	72
NS6.4(COM.....)	6030400218	10	1700	72	NS6.4(21...39)	6030400284	10	1700	72
NS6.4(NO.....)	6030400219	10	1700	72	NS6.4(41...59)	6030400285	10	1700	72
NS6.4(80...K30)	6030400230	10	1700	72	NS6.4(61...79)	6030400286	10	1700	72
NS6.4(N...EARTH)	6030400231	10	1700	72	NS6.4(2...20)	6030400287	10	1700	72
NS6.4(T1...T13)	6030400232	10	1700	72	NS6.4(22...40)	6030400288	10	1700	72
NS6.4(80...K30)-B	6030400233	10	1700	72	NS6.4(42...60)	6030400289	10	1700	72
NS6.4(80...PI)	6030400234	10	1700	72	NS6.4(62...80)	6030400290	10	1700	72
NS6.4(T1.T2...T1)	6030400235	10	1700	72	NS6.4(870...X3)-B	6030400291	10	1700	72
NS6.4(NC.....)	6030400236	10	1700	72	NS6.4(1.2...252)	6030400292	10	1700	72
NS6.4(P1.....)	6030400237	10	1700	72	NS6.4(253...344)	6030400293	10	1700	72
NS6.4(P2.....)	6030400238	10	1700	72	NS6.4(152.132.79...N)-A	6030400294	10	1700	72
NS6.4(T7....)	6030400239	10	1700	72	NS6.4(152.132.133...N)-B	6030400295	10	1700	72
NS6.4(T8....)	6030400240	10	1700	72	NS6.4(R...T)	6030400296	10	1700	72
NS6.4(T10....)	6030400241	10	1700	72	NS6.4(E...N)	6030400297	10	1700	72
NS6.4(T11....)	6030400242	10	1700	72	NS6.4(60...145)	6030400298	10	1700	72
NS6.4(1.3.5.7.9)	6030400243	10	1700	72	NS6.4(RS1...DC5)	6030400299	10	1700	72
NS6.4(2.4.6.8.10)	6030400244	10	1700	72	NS6.4(DC6...BT24)	6030400300	10	1700	72
NS6.4(11.13.15.17.19)	6030400245	10	1700	72	NS6.4(151...160)	6030400301	10	1700	72
NS6.4(12.14.16.18.20)	6030400246	10	1700	72	NS6.4(161...170)	6030400302	10	1700	72
NS6.4(21.23.25.27.29)	6030400247	10	1700	72	NS6.4(Diode...)	6030400303	10	1700	72
NS6.4(22.24.26.28.30)	6030400248	10	1700	72	NS6.4(N1...N10)	6030400304	10	1700	72
NS6.4(31.33.35.37.39)	6030400249	10	1700	72	NS6.4(L1...L10)	6030400305	10	1700	72
NS6.4(32.34.36.38.40)	6030400250	10	1700	72	NS6.4(11...X1)	6030400306	10	1700	72
NS6.4(41.43.45.47.49)	6030400251	10	1700	72	NS6.4(L1...L2)	6030400307	10	1700	72
NS6.4(42.44.46.48.50)	6030400252	10	1700	72	NS6.4(L1...CFD)	6030400308	10	1700	72

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NS6.4(PI1...77)	6030400309	10	1700	72	NS8 (151....200)	6030500120	10	1500	72
NS6.4(R...W4)	6030400310	10	1700	72	NS8 (16....20)	6030500032	10	1500	72
NS6.4(PR...PRE)	6030400311	10	1700	72	NS8 (1U....)	6030500021	10	1500	72
NS6.4(R...D10B)	6030400312	10	1700	72	NS8 (1U1,1V1,1W1....)	60305000158	10	1500	72
NS6.4(C1...D25)	6030400313	10	1700	72	NS8 (1U1....1V2)	6030500095	10	1500	72
NS6.4(B1...B4)	6030400314	10	1700	72	NS8 (1U2,1V2,1W2....)	6030500166	10	1500	72
NS6.4(R.S.T...75)	6030400315	10	1700	72	NS8 (1V....)	6030500113	10	1500	72
NS6.4(26.27...R.S.T)	6030400316	10	1700	72	NS8 (1W....)	6030500116	10	1500	72
NS6.4(132.26...R.S.T)	6030400317	10	1700	72	NS8 (1W2....2U2)	6030500097	10	1500	72
NS6.4(146.79...R.S)	6030400318	10	1700	72	NS8 (200....250)	6030500121	10	1500	72
NS6.4(N.26...E.154)	6030400319	10	1700	72	NS8 (201....250)	6030500121	10	1500	72
NS6.4(W.V...V1.U1)	6030400320	10	1700	72	NS8 (21....25)	6030500036	10	1500	72
NS6.4(152.132...6)	6030400321	10	1700	72	NS8 (21....30)	6030500069	10	1500	72
NS6.4(152.132.79...42)	6030400322	10	1700	72	NS8 (211....X2)	6030500084	10	1500	72
NS6.4(R.76...75)	6030400323	10	1700	72	NS8 (222....)	6030500006	10	1500	72
NS6.4(99.97...75)	6030400324	10	1700	72	NS8 (241....294)	6030500015	10	1500	72
NS6.4(152.132.133...42)	6030400325	10	1700	72	NS8 (251....300)	6030500024	10	1500	72
NS6.4(152.132.133...R.S.T)	6030400326	10	1700	72	NS8 (26....30)	6030500040	10	1500	72
NS6.4(R.S.T...MP)	6030400327	10	1700	72	NS8 (283....887)	6030500086	10	1500	72
NS6.4(L3...OVL)	6030400328	10	1700	72	NS8 (2U....)	6030500109	10	1500	72
NS6.4(OOS...SP2)	6030400329	10	1700	72	NS8 (2U1,2V1,2W1....)	6030500167	10	1500	72
NS6.4(CM2...14)	6030400330	10	1700	72	NS8 (2U2,2V2,2W2....)	6030500159	10	1500	72
NS8 (.....-)	6030500080	10	1500	72	NS8 (2V....)	6030500150	10	1500	72
NS8 (.....+)	6030500034	10	1500	72	NS8 (2V2....3W1)	6030500096	10	1500	72
NS8 (.....+++)	6030500079	10	1500	72	NS8 (2W....)	6030500141	10	1500	72
NS8 (....444)	6030500014	10	1500	72	NS8 (301....350)	6030500016	10	1500	72
NS8 (0....9)	6030500023	10	1500	72	NS8 (31....35)	6030500048	10	1500	72
NS8 (000....)	6030500085	10	1500	72	NS8 (31....40)	6030500073	10	1500	72
NS8 (01.....04)	6030500008	10	1500	72	NS8 (311....L6)-A	6030500105	10	1500	72
NS8 (1....10)	6030500042	10	1500	72	NS8 (311....L6)-B	6030500103	10	1500	72
NS8 (1....50)	6030500030	10	1500	72	NS8 (333....)	6030500009	10	1500	72
NS8 (10....500)	6030500061	10	1500	72	NS8 (351....400)	6030500087	10	1500	72
NS8 (101....110)	6030500049	10	1500	72	NS8 (36....40)	6030500062	10	1500	72
NS8 (101....150)	6030500119	10	1500	72	NS8 (3U....)	6030500151	10	1500	72
NS8 (1010....)	6030500026	10	1500	72	NS8 (3U1,3V1,3W1....)	6030500160	10	1500	72
NS8 (10U1,10V1,10W1....)	6030500174	10	1500	72	NS8 (3U2,3V2,3W2....)	6030500161	10	1500	72
NS8 (11....15)	6030500031	10	1500	72	NS8 (3U2...3W2)	6030500098	10	1500	72
NS8 (11....20)	6030500065	10	1500	72	NS8 (3V....)	6030500154	10	1500	72
NS8 (111....)	6030500002	10	1500	72	NS8 (3W....)	6030500149	10	1500	72
NS8 (111....120)	6030500050	10	1500	72	NS8 (400....403)-B	6030500004	10	1500	72
NS8 (11U1,11V1,11W1....)	6030500175	10	1500	72	NS8 (400....403)-A	6030500132	10	1500	72
NS8 (121....130)	6030500051	10	1500	72	NS8 (401....450)	6030500088	10	1500	72
NS8 (12U1,12V1,12W1....)	6030500176	10	1500	72	NS8 (41....45)	6030500063	10	1500	72
NS8 (131....140)	6030500052	10	1500	72	NS8 (41....50)	6030500077	10	1500	72
NS8 (141....150)	6030500053	10	1500	72	NS8 (450....788)	6030500134	10	1500	72

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NS8 (450....789)	6030500136	10	1500	72	NS8 (BB....)	6030500114	10	1500	72
NS8 (451....500)	6030500133	10	1500	72	NS8 (C312....XB)	6030500104	10	1500	72
NS8 (46....50)	6030500064	10	1500	72	NS8 (EARTH....)	6030500003	10	1500	72
NS8 (4U1,4V1,4W1....)	6030500162	10	1500	72	NS8 (H1....MP2)	6030500148	10	1500	72
NS8 (4U2,4V2,4W2....)	6030500163	10	1500	72	NS8 (L,N,E....)	6030500140	10	1500	72
NS8 (51....100)	6030500038	10	1500	72	NS8 (L,P,E....)	6030500099	10	1500	72
NS8 (51....55)	6030500066	10	1500	72	NS8 (L....)	6030500152	10	1500	72
NS8 (51....60)	6030500126	10	1500	72	NS8 (L1,L2,L3....)	6030500157	10	1500	72
NS8 (555....)	6030500017	10	1500	72	NS8 (MP,R....MP)	6030500089	10	1500	72
NS8 (56....60)	6030500067	10	1500	72	NS8 (MP....W1)	6030500005	10	1500	72
NS8 (5U1,5V1,5W1....)	6030500080	10	1500	72	NS8 (N....)	6030500153	10	1500	72
NS8 (5U2,5V2,5W2....)	6030500165	10	1500	72	NS8 (N....P1)	6030500123	10	1500	72
NS8 (602....890)	6030500111	10	1500	72	NS8 (N1.....N2)	6030500009	10	1500	72
NS8 (61....65)	6030500068	10	1500	72	NS8 (O.....R2)	6030500011	10	1500	72
NS8 (61....70)	6030500130	10	1500	72	NS8 (P2....PH2)	6030500122	10	1500	72
NS8 (66....70)	6030500070	10	1500	72	NS8 (PE,PE....)	6030500118	10	1500	72
NS8 (666....)	6030500018	10	1500	72	NS8 (R,Y,B....)	6030500156	10	1500	72
NS8 (6U1,6V1,6W1....)	6030500169	10	1500	72	NS8 (R,Y....Y)	6030500177	10	1500	72
NS8 (6U2,6V2,6W2....)	6030500170	10	1500	72	NS8 (R....)	6030500117	10	1500	72
NS8 (701.....750)	6030500112	10	1500	72	NS8 (R....W2)	6030500142	10	1500	72
NS8 (71....75)	6030500071	10	1500	72	NS8 (RSTN....)	6030500092	10	1500	72
NS8 (71....80)	6030500131	10	1500	72	NS8 (U1.V1....MP)-A	6030500091	10	1500	72
NS8 (76....80)	6030500072	10	1500	72	NS8 (U1.V1....MP)-B	6030500178	10	1500	72
NS8 (777....)	6030500019	10	1500	72	NS8 (U2,V2....100)	6030500090	10	1500	72
NS8 (7U1,7V1,7W1....)	6030500171	10	1500	72	NS8 (U2,V2....B2)	6030500143	10	1500	72
NS8 (801.....850)	6030500129	10	1500	72	NS8 (UVW....)	6030500093	10	1500	72
NS8 (81....85)	6030500074	10	1500	72	NS8 (UVW....MP)	6030500094	10	1500	72
NS8 (81....90)	6030500135	10	1500	72	NS8 (UVWN....)	6030500058	10	1500	72
NS8 (86....90)	6030500075	10	1500	72	NS8 (W/7U....W/8U)	6030500125	10	1500	72
NS8 (870....274)	6030600127	10	1500	72	NS8 (W1.....U)	6030500012	10	1500	72
NS8 (888....)	6030500020	10	1500	72	NS8 (X,Y,Z,X....)	6030500007	10	1500	72
NS8 (891....T4)	6030500124	10	1500	72	NS8 (X0....745)	6030500128	10	1500	72
NS8 (8U1,8V1,8W1....)	6030500172	10	1500	72	NS8 (X0....X3)	6030500108	10	1500	72
NS8 (91....100)	6030500139	10	1500	72	NS8 (X1,X1....)	6030500082	10	1500	72
NS8 (91....95)	6030500076	10	1500	72	NS8 (X1.....601)	6030500081	10	1500	72
NS8 (96....100)	6030500078	10	1500	72	NS8 (XC....C311)	6030500083	10	1500	72
NS8 (999....)	6030500022	10	1500	72	NS8 (Y....)	6030500155	10	1500	72
NS8 (9U1,9V1,9W1....)	6030500173	10	1500	72	NS8 White	6030500001	10	1500	72
NS8 (A201....A465)	6030500106	10	1500	72	NS8(01...04)	6030500008	10	1500	72
NS8 (A500....601)-A	6030500110	10	1500	72	NS8(N1...N2)	6030500009	10	1500	72
NS8 (A500....601)-B	6030500100	10	1500	72	NS8(MP...U1)	6030500013	10	1500	72
NS8 (ABC....X)	6030500107	10	1500	72	NS8(444.....)	6030500014	10	1500	72
NS8 (B314....A75)	6030500102	10	1500	72	NS8(1.3.5.7.9)	6030500025	10	1500	72
NS8 (B65....B313)	6030500100	10	1500	72	NS8(2.4.6.8.10)	6030500027	10	1500	72

Type	Ordering No.	Qty (Box)	Qty(Carton)	Page	Type	Ordering No.	Qty (Box)	Qty(Carton)	Page
NS8(11.13.15.17.19)	6030500028	10	1500	72	NS10(222...)	6030600021	10	1700	72
NS8(12.14.16.18.20)	6030500029	10	1500	72	NS10(333...)	6030600022	10	1700	72
NS8(A.B.C.D.E)	6030500033	10	1500	72	NS10(4.4.4)	6030600023	10	1700	72
NS8(1L1.1N1.2L1.2N1)	6030500035	10	1500	72	NS10(5.5.5)	6030600024	10	1700	72
NS8(RO...MP)	6030500037	10	1500	72	NS10(6.6.6)	6030600025	10	1700	72
NS8(Xc...Xc2)	6030500039	10	1500	72	NS10(7.7.7)	6030600026	10	1700	72
NS8(U2...BT)-A	6030500041	10	1500	72	NS10(8.8.8)	6030600027	10	1700	72
NS8(450...Xc2)	6030500043	10	1500	72	NS10(9.9.9)	6030600028	10	1700	72
NS8(MP...W)	6030500044	10	1500	72	NS10(10.10.10)	6030600029	10	1700	72
NS8(BG...48)	6030500045	10	1500	72	NS10(MP...ER)	6030600030	10	1700	72
NS8(X.X...)	6030500046	10	1500	72	NS10(RSTN)	6030600031	10	1700	72
NS8(Z.Z...)	6030500047	10	1500	72	NS10(N.N.N)	6030600033	10	1700	72
NS8(7U2...7V2)	6030500054	10	1500	72	NS10(R...U)	6030600034	10	1700	72
NS8(8U2...8V2)	6030500055	10	1500	72	NS10(d1.d2...d1)	6030600035	10	1700	72
NS8(9U2...9V2)	6030500056	10	1500	72	NS10(1S1...1S6)	6030600036	10	1700	72
NS8(10U2...10V2)	6030500057	10	1500	72	NS10(2S1...2S6)	6030600037	10	1700	72
NS8(1L1.2L1.3L1)	6030500059	10	1500	72	NS10(3S1...3S6)	6030600038	10	1700	72
NS8(1N1.2N1.3N1)	6030500060	10	1500	72	NS10(4S1...4S6)	6030600039	10	1700	72
NS8(BT+....100)	6030500115	10	1500	72	NS10(5S1...5S6)	6030600040	10	1700	72
NS8(450...788)-B	6030500137	10	1500	72	NS10(6S1...6S6)	6030600041	10	1700	72
NS8(450...X2)	6030500138	10	1500	72	NS10(7S1...7S6)	6030600042	10	1700	72
NS8(100...T)	6030500145	10	1500	72	NS10(8S1...8S6)	6030600043	10	1700	72
NS8(3V.....)	6030500154	10	1500	72	NS10(Ha.Hn)	6030600044	10	1700	72
NS8(U2.....BT)	6030500168	10	1500	72	NS10(1a...2n)	6030600046	10	1700	72
NS10	6030600001	10	1700	72	NS10(B1...B11)	6030600047	10	1700	72
NS10 (EARTH)	6030600002	10	1700	72	NS10(a...n)	6030600048	10	1700	72
NS10 (MP.....U)	6030600003	10	1700	72	NS10(1a...3n)	6030600049	10	1700	72
NS10 (R....)	6030600005	10	1700	72	NS10(a...dn)	6030600050	10	1700	72
NS10 (V....W1)	6030600004	10	1700	72	NS10(A11...A23)	6030600051	10	1700	72
NS10(1...25)	6030600006	10	1700	72	NS10(9S1...9S6)	6030600052	10	1700	72
NS10(26...50)	6030600040	10	1700	72	NS10(A11.A12.A13)	6030600053	10	1700	72
NS10(1....5)	6030600008	10	1700	72	NS10(a.n.a.n)	6030600054	10	1700	72
NS10(6....10)	6030600009	10	1700	72	NS10(EARTH...B1)	6030600055	10	1700	72
NS10(11...15)	6030600010	10	1700	72	NS10(EARTH...B2)	6030600056	10	1700	72
NS10(16...20)	6030600011	10	1700	72	NS10(U.V....E)	6030600057	10	1700	72
NS10(21...25)	6030600012	10	1700	72	NS10(1a1.1a2...2n)	6030600058	10	1700	72
NS10(26...30)	6030600013	10	1700	72	NS10(1a.1n...dn)	6030600059	10	1700	72
NS10(31...35)	6030600014	10	1700	72	NS10(A11.A12...A33)	6030600060	10	1700	72
NS10(36...40)	6030600015	10	1700	72	NS10(as1...n)	6030600062	10	1700	72
NS10(41...45)	6030600016	10	1700	72	NS10(R....)	6030600064	10	1700	72
NS10(46...50)	6030600017	10	1700	72	NS10(S....)	6030600065	10	1700	72
NS10(51...75)	6030600018	10	1700	72	NS10(T....)	6030600066	10	1700	72
NS10(76...100)	6030600019	10	1700	72	NS10(U....)	6030600067	10	1700	72
NS10(111..)	6030600020	10	1700	72	NS10(V....)	6030600068	10	1700	72



Type	Ordering No.	Qty (Box)	Qty(Carton)	Page	Type	Ordering No.	Qty (Box)	Qty(Carton)	Page
NS10(W.....)	6030600069	10	1700	72	RFH10N	6050102001	6	-	88
NS10(R1.....)	6030600070	10	1700	72	RFH10N-LD	6050202001	6	-	88
NS10(R2.....)	6030600071	10	1700	72	RFH102	6050101002	6	60	88
NS10(L1.....)	6030600072	10	1700	72	RFH102-LD	6050201002	6	60	88
NS10(L2.....)	6030600073	10	1700	72	RFH103	6050101003	4	40	88
NS10(L3.....)	6030600074	10	1700	72	RFH103-LD	6050201003	4	40	88
NS10(O.....)	6030600075	10	1700	72	RFH103N	6050102003	3	-	88
NS10(N.....)	6030600093	10	1700	72	RFH103N-LD	6050202003	3	-	88
NS10(E.....)	6030600076	10	1700	72	RFH104	6050101004	3	-	88
NS10(RL.....)	6030600077	10	1700	72	RFH104-LD	6050201004	3	-	88
NS10(MP1...W)	6030600078	10	1700	72	RFT5 Blue	6010201002	25	500	44
NS10(R.S.T....S)	6030600079	10	1700	72	RFT5 Gray	6010201001	25	500	44
<b>O</b>					RFT5-LD Blue (24, 48 VDC/AC)	6010202005	25	500	44
OWD 50 x 13	6110310010	30	60	98					
OWD 70 x 18	6110310014	14	28	98	RFT5-LD Gray (24, 48 VDC/AC)	6010202001	25	500	44
OWD 90 x 24	6110310018	8	16	98					
<b>P</b>					RFT5-LD Blue (24, 48 VDC/AC)	6010202002	25	500	44
P-RTP2.5 Blue	6020301001	100	2000	79					
P-RTP2.5 Gray	6020301005	100	2000	79	RFT5-LD Gray (24, 48 VDC/AC)	6010202006	25	500	44
P-DRTP4	6020302001	20	300	79					
PGC/M4-M6	6090251002	5	-	79	RPET2.5	6011201001	50	1000	52
P-RTP4,6,10 Blue	6020301101	50	1500	79	RPET4	6011201002	50	800	52
P-RTP4,6,10 Gray	6020301105	50	1500	79	RPET6	6011201003	25	500	53
P-RTS2.5, 4, 6	6020303001	100	2000	79	RPIT2.5 Black	6011001009	100	1000	48
<b>R</b>					RPIT2.5 Blue	6011001001	100	1000	48
RDT2.5-C	6010801001	50	1000	40	RPIT2.5 Brown	6011001007	100	1000	48
RDT2.5-CDC	6010801002	50	1000	41	RPIT2.5 Gray	6011001005	100	1000	48
RDT2.5-CTS	6010801006	50	1000	40	RPIT2.5-1/2 Gray	6011005005	50	320	48
RDT2.5-CFC	6010801003	50	1000	45	RPIT2.5-2/2 Gray	6011006001	40	640	48
RDT2.5-CFCLD (24, 48 VDC/AC)	6010801004	50	1000	45	RPIT2.5 Green	6011001002	100	1000	48
RDT2.5-CFCLD (110, 220 VDC/AC)	6010801005	50	1000	45	RPIT2.5 Light Cream	6011001008	100	1000	48
					RPIT2.5 Orange	6011001010	100	1000	48
RET2.5	6010601001	50	1000	26	RPIT2.5 Red	6011001006	100	1000	48
RET4	6010601002	50	500	26	RPIT2.5 White	6011001003	100	1000	48
RET6	6010601003	25	500	27	RPIT2.5 Yellow	6011001004	100	1000	48
RET10	6010601004	25	500	27	RPIT4 Black	6011002009	100	800	48
RET16	6010601005	20	340	28	RPIT4 Blue	6011002001	100	800	48
RET35	6010601006	20	200	28	RPIT4 Brown	6011002007	100	800	48
RETN2.5	6010602001	50	900	29	RPIT4 Gray	6011002005	100	800	48
RETN4	6010602002	50	900	29	RPIT4 Green	6011002002	100	800	48
RETN6	6010602003	25	500	30	RPIT4 Light Cream	6011002008	100	800	48
RETN10	6010602004	25	500	30	RPIT4 Orange	6011002010	100	800	48
RFH10	6050101001	12	120	88	RPIT4 Red	6011002006	100	800	48
RFH10-LD	6050201001	12	120	88	RPIT4 White	6011002003	100	800	48
					RPIT4 Yellow	6011002004	100	800	48

Type	Ordering No.	Qty (Box)	Qty(Carton)	Page	Type	Ordering No.	Qty (Box)	Qty(Carton)	Page
RPIT6 Black	6011003009	50	500	49	RTP6 Black	6010404009	50	1000	15
RPIT6 Blue	6011003001	50	500	49	RTP6 Blue	6010404001	50	1000	15
RPIT6 Brown	6011003007	50	500	49	RTP6 Brown	6010404007	50	1000	15
RPIT6 Gray	6011003005	50	500	49	RTP6 Gray	6010404005	50	1000	15
RPIT6 Green	6011003002	50	500	49	RTP6 Green	6010404002	50	1000	15
RPIT6 Light Cream	6011003008	50	500	49	RTP6 Orange	6010404010	50	1000	15
RPIT6 Orange	6011003010	50	500	49	RTP6 Red	6010404006	50	1000	15
RPIT6 Red	6011003006	50	500	49	RTP6 White	6010404003	50	1000	15
RPIT6 White	6011003003	50	500	48	RTP6 Yellow	6010404004	50	1000	15
RPIT6 Yellow	6011003004	50	500	48	RTP10 Black	6010405009	50	1000	16
RSC	6070403001	50	-	110	RTP10 Blue	6010405001	50	1000	16
RSL22 Blue	6070101001	25	250	111	RTP10 Brown	6010405007	50	1000	16
RSL22 Green	6070101002	25	250	111	RTP10 Gray	6010405005	50	1000	16
RSL22 Red	6070101005	25	250	111	RTP10 Green	6010405002	50	1000	16
RSL22 White	6070101003	25	250	111	RTP10 Orange	6010405010	50	1000	16
RSL22 Yellow	6070101004	25	250	111	RTP10 Red	6010405006	50	1000	16
RST6	6010301001	20	320	36	RTP10 White	6010405003	50	1000	16
RSTN6	6010306001	25	500	38	RTP10 Yellow	6010405004	50	1000	16
RSTP6	6010304001	25	500	38	RTP16 Black	6010406009	50	500	17
RSTT6	6010303001	25	500	37	RTP16 Blue	6010408001	50	500	17
RSTU6	6010305001	25	500	37	RTP16 Brown	6010406007	50	500	17
RT4	6010499002	50	500	61	RTP16 Gray	6010406005	50	500	17
RTB70	6010501001	5	25	22	RTP16 Green	6010406002	50	500	17
RTB95	6010502001	5	25	22	RTP16 Orange	6010406010	50	500	17
RTB150	6010503001	5	25	23	RTP16 Red	6010406006	50	500	17
RTB240	6010504001	4	20	23	RTP16 White	6010406003	50	500	17
RTP2.5 Black	6010402009	100	1000	14	RTP16 Yellow	6010406004	50	500	17
RTP2.5 Blue	6010402001	100	1000	14	RTP25 Black	6010407009	50	500	17
RTP2.5 Brown	6010402007	100	1000	14	RTP25 Blue	6010407001	50	500	17
RTP2.5 Gray	6010402005	100	1000	14	RTP25 Brown	6010407007	50	500	17
RTP2.5 Green	6010402002	100	1000	14	RTP25 Gray	6010407005	50	500	17
RTP2..5 Orange	6010402010	100	1000	14	RTP25 Green	6010407002	50	500	17
RTP2.5 Red	6010402006	100	1000	14	RTP25 Orange	6010407010	50	500	17
RTP2.5 White	6010402003	100	1000	14	RTP25 Red	6010407006	50	500	17
RTP2.5 Yellow	6010402004	100	1000	14	RTP25 White	6010407003	50	500	17
RTP2.5-H	6010401005	100	1000	14	RTP25 Yellow	6010407004	50	500	17
RTP4 Black	6010403009	100	1000	15	RTP35 Black	6010408009	20	320	18
RTP4 Blue	6010403001	100	1000	15	RTP35 Brown	6010408007	20	200	18
RTP4 Brown	6010403007	100	1000	15	RTP35 Gray	6010408005	20	200	18
RTP4 Gray	6010403005	100	1000	15	RTP35 Green	6010408002	20	200	18
RTP4 Green	6010403002	100	1000	15	RTP35 Orange	6010408010	20	320	18
RTP4 Orange	6010403010	100	1000	15	RTP35 Red	6010408006	20	320	18
RTP4 Red	6010403006	100	1000	15	RTP35 White	6010408003	20	320	18
RTP4 White	6010403003	100	1000	15	RTP35 Yellow	6010408004	20	320	18
RTP4 Yellow	6010403004	100	1000	15					

Type	Ordering No.	Qty (Box)	Qty(Carton)	Page	Type	Ordering No.	Qty (Box)	Qty(Carton)	Page
RTP50 Black	6010409009	20	200	18	TSS3/26/4 Gray	6020401005	50	-	82
RTP50 Blue	6010409001	20	200	18	TSS3/26/4 Black	6020401009	50	-	82
RTP50 Brown	6010409007	20	200	18	TSS3/26/4 Blue	6020401001	50	-	82
RTP50 Gray	6010409005	20	200	18	TSS3/26/4 Red	6020401006	50	-	82
RTP50 Green	6010409002	20	200	18	TSS3/26/4 Yellow	6020401004	50	-	82
RTP50 Red	6010404006	20	200	18	TS4/8/4	6020402004	50	-	82
RTP50 White	6010409003	20	200	18					
RTP50 Yellow	6010409004	20	200	18					
RTP70 Blue	601041001	10	50	19					
RTP70 Gray	601041005	10	50	19					
RTP95 Blue	6010411001	5	50	19					
RTP95 Gray (TH15)	6010411005	5	50	19					
RTP150 Blue	6010412001	5s	50	20					
RTP150 Gray	6010412005	5	50	20					
RTT6	6010302001	20	320	36					
RWD 25x40	6110105008	30	60	94					
RWD 25x60	6110105012	20	40	94					
RWD 40x40	6110108008	20	40	94					
RWD 60x40	6110112008	16	32	94					
RWD 40x80	6110108016	14	28	94					
RWD 40x60	6110108012	18	36	94					
RWD 60x60	6110112012	12	24	94					
RWD 80x60	61101116012	10	20	94					
RWD 60x80	61101112016	8	16	94					
RWD 80x80	61101116016	8	16	94					
RWD 100x80	6110116020	-	-	94					
RWD 60x100	6110120012	-	-	94					
RWD 80x100	6110120016	-	-	94					
RWD 100x100	6110120020	4	8	94					
<b>S</b>									
SEI 2	6070303010	12	-	109					
SEI 3	6070303011	12	-	109					
SEI 2	6070303020	12	-	109					
SEI 3	6070303021	12	-	109					
SP-2.5-10 Gray	6020304001	100	-	79					
SP-D4	6020304004	100	-	79					
<b>T</b>									
TH35-15/S	6090102004	10	-	113					
TH35-7.5/S	6090101002	20	-	113					
THC/M5	6090250001	5	-	114					
TRTP4	6010750005	50	800	34					
TS3.5/8/4	6020402003	50	-	82					
TS3/6/2.3	6020402001	50	-	82					
TS3/8/4	6020402002	50	-	82					



Photo & Design: gilar 888 309 88

20th Ave., Azadegan Rd.  
Isfahan-Iran  
P.O. Box 81395/111  
Tel.: +9831 33802026  
Fax: +9831 33802013  
info@raad-co.com  
sales@raad-co.com  
www.raad-co.com