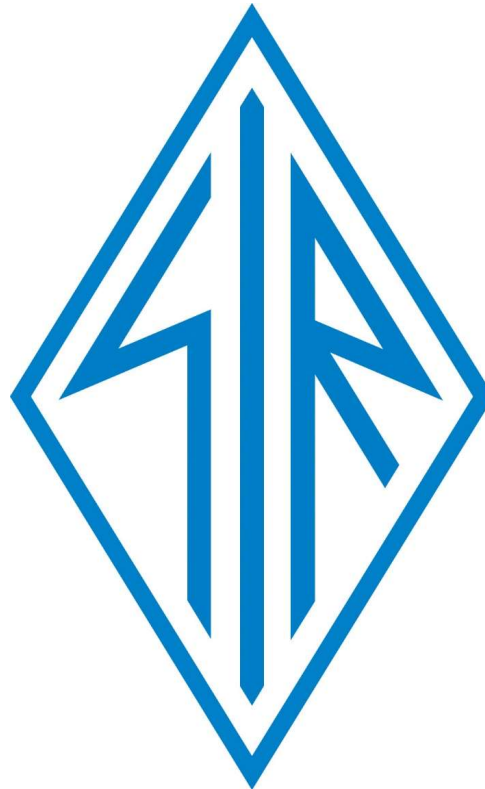


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S.I.R. profile

- S.I.R. Resistor, founded in 1968, is a specialist and expert in the design and manufacturing of power resistors ranging from 2W to 120 KW.
- since its foundation S.I.R. power resistors are recognized by many customers for their quality level.
- S.I.R.'s competitive advantage is the flexibility, that's such to provide competitive delivery times and the ability to quickly suggest customized solutions.
- S.I.R. Resistor, from January 2018, s part of WIDAP Group

NEW

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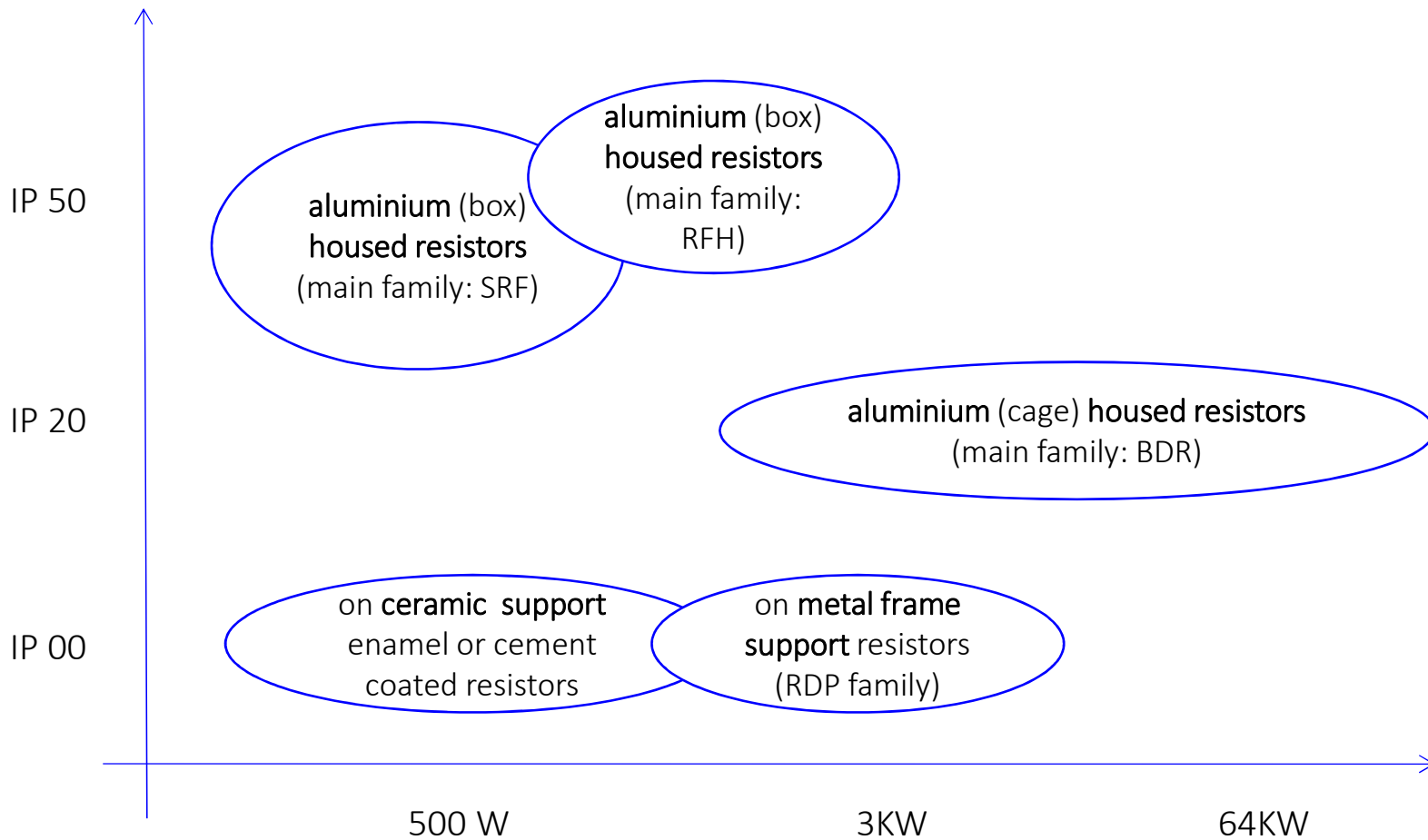
- products overview
 - ✓ guide line
 - ✓ main applications
- ceramic tubular support **resistors**
 - ✓ enamelled
 - ✓ cemented
- bare wire resistors
 - ✓ on ceramic support
 - ✓ on metal frame support
- metal housed resistors
 - ✓ box
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 - ✓ ... water cooled
 - ✓ _... low power braking
 - ✓ ... heaters and condensate prevention
 - ✓ _... low power ceramic cage
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 - ✓ ... shunts
 - ✓ _... rheostats
- **groups** (resistors modules)
- **reference customers**

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Products overview – guide line

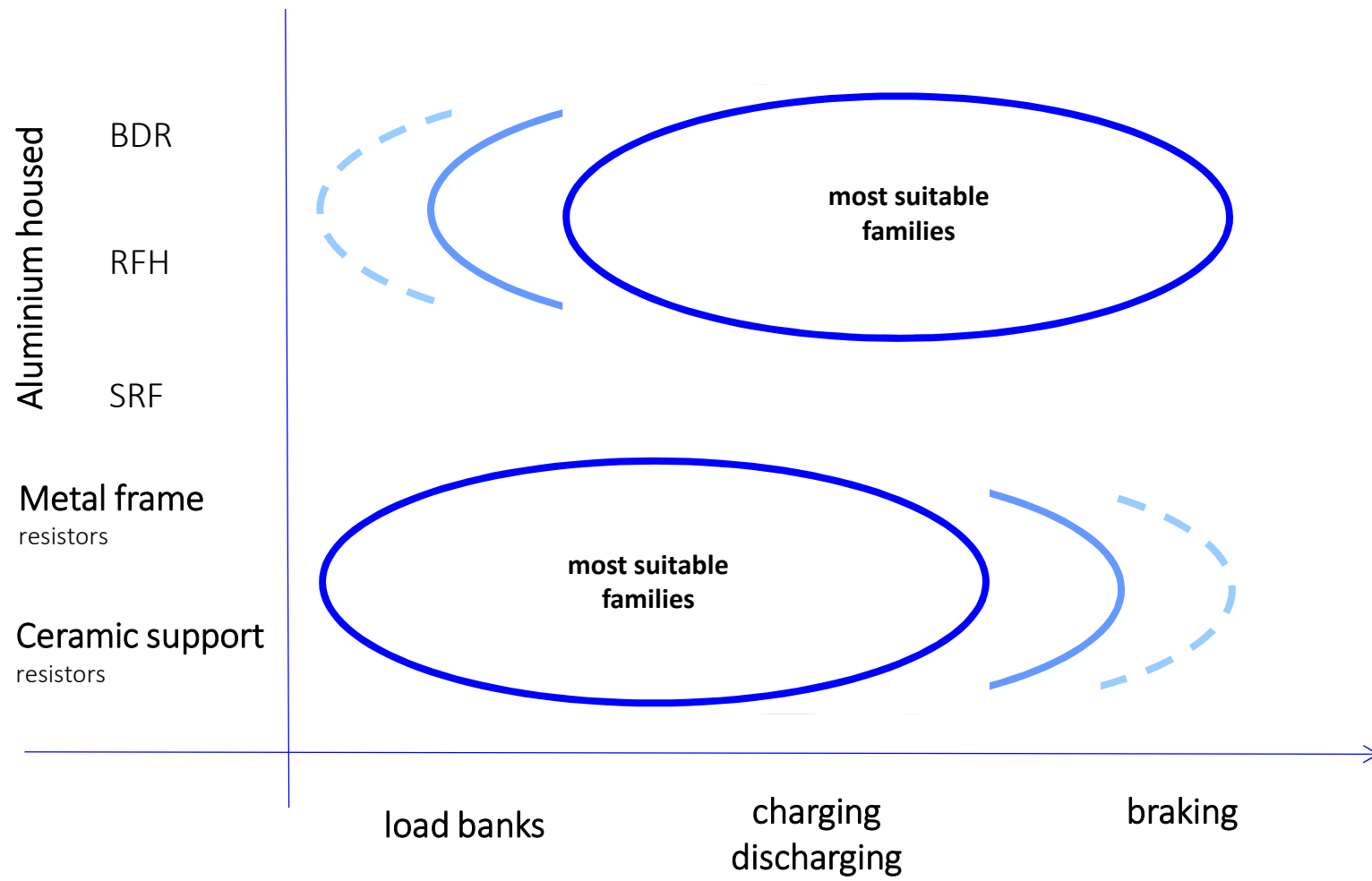


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Products overview – main applications

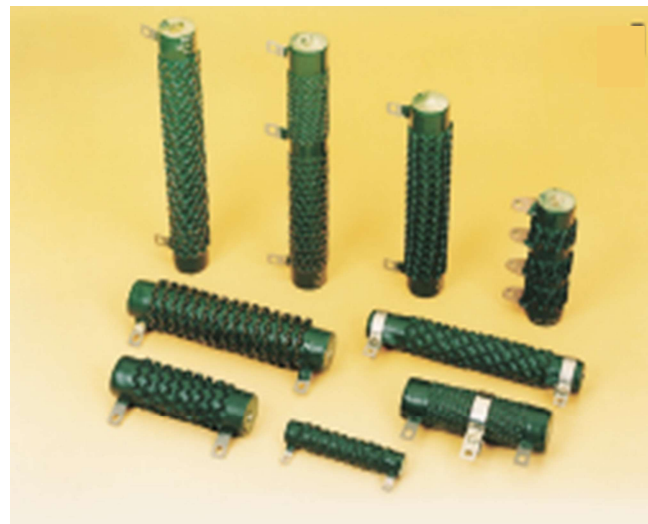


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... ceramic tubular support



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... ceramic tubular support (enamelled)





	<i>Power range</i> [W]	<i>Resistance ohmic range</i> [Ω]	<i>min and max dimensions range</i> [diam.xlength ... mm]
<p>SMS_SMR ... with embedded collars fixed and adjustable</p> 	12-250	1Ω-47K	from 8.45 to 29.265
<p>SRS_SRR ... with embedded collars fixed and adjustable</p> 	10-700	1Ω-100K	from 8.34 to 50.373
<p>SRE SRER ... flat with embedded collars fixed and adjustable</p> 	21-91	1Ω-22K	from 8.32 to 8.153
<p>RNO RNOR corrugated ribbon winding fixed and adjustable</p> 	155-1500	0,068-100Ω	from 29.108 to 65.500
<p>SRA ... with axial leads</p> 	3-25	1Ω-27K	from 6.12 to 9.64

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... ceramic tubular support (cemented)

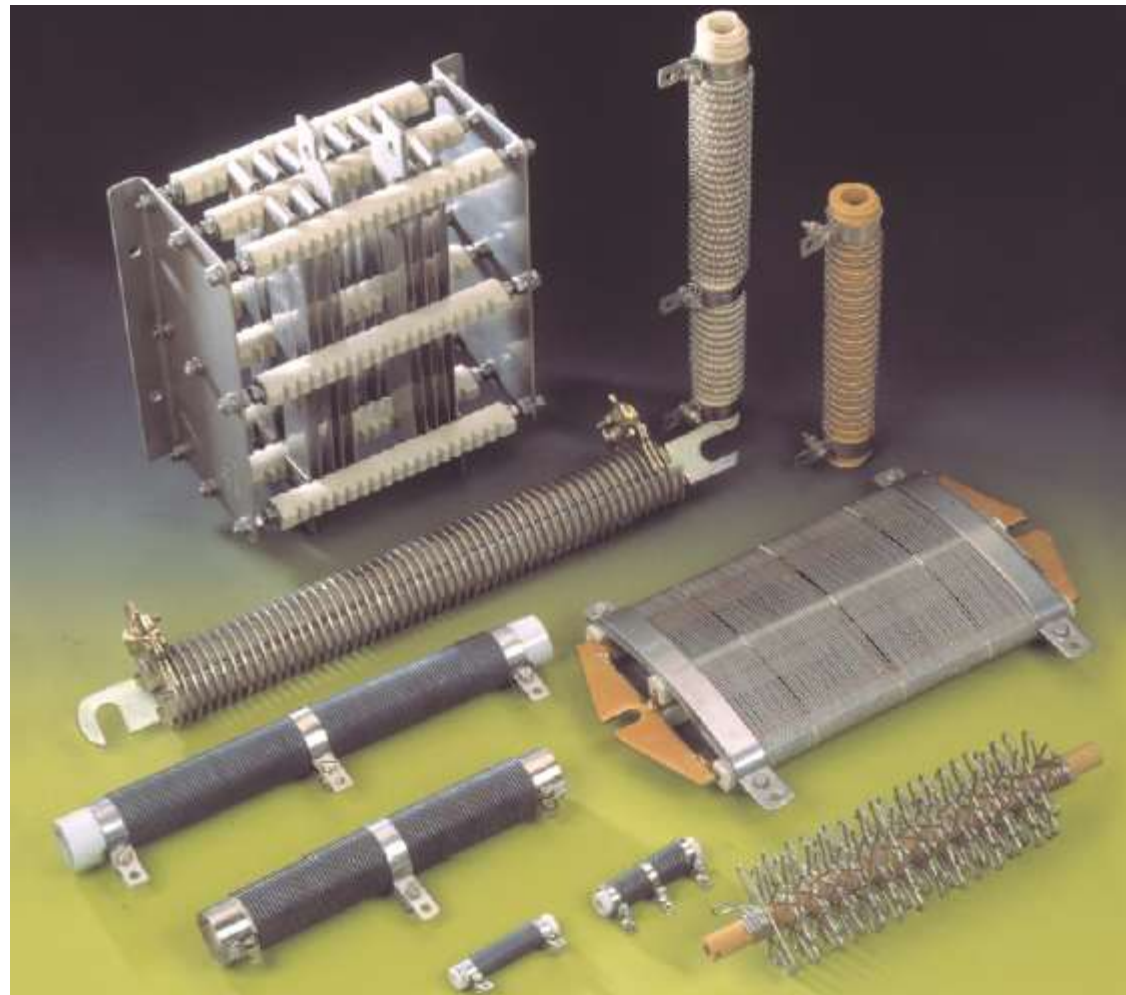
	<i>Power range</i> [W]	<i>Resistance ohmic range</i> [Ω]	<i>min and max dimensions range</i> [diam.xlength ... mm]
<p>SRC_SRCR ... with embedded collars fixed and adjustable</p> 	10-1000	0,5Ω-30K	from 8.34 to 60.500
<p>SREC_SRECR ... flat resistor</p> 	21-91	1Ω-22K	from 8.32 to 8.153
<p>SCE ... elliptical section resistor</p> 	500-1300	2Ω-47K	from 70.240 to 70.500
<p>RNOC RNOCR ... corrugated ribbon winding fixed and adjustable</p> 	155-1500	0,068-100Ω	from 29.108 to 65.500
<p>SRAC ... with axial leads</p>	3-25	1Ω-27K	from 6.12 to 9.64

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... bare wire and grid resistors



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... bare wire on ceramic support

	<i>Power range</i> [W]	<i>Resistance ohmic range</i> [Ω]	<i>min and max dimensions range</i> [diam.xlength ... mm]
SRO ... oxidated wire power resistors 	15-1.000	1Ω-8,1K	from 13.64 to 80.500
RCF ... "flower style" 	1.000-2.500 with ventilation	1Ω-12,5 Ω	from 63.120 to 63.290
RCF ... spiral wire 	220-2.000 with ventilation	13,9-320 Ω	from 20.150 to 70.500




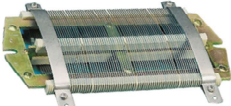
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... bare wire on metal frame support

(ceramic supports located on steel frame)

	<i>Power range</i> [W]	<i>Resistance ohmic range</i> [Ω]	<i>min and max dimensions range</i> [diam.xlength ... mm]
RWC ... helix ribbon coil 	400-1200	0,05-1,0Ω	from 90.230 to 90.515
RDP 70.xxx ... rectangular section 	600-1200	1,0-61Ω	from 77x18x320 to 77x18x560
RDP 800.1600 ... rectangular section 	800-1800	0,5-68Ω	from 100x22x255 to 100x22x575
RDP 2200-5000 ... romboidal section 	2500-5000	0,3-100Ω	from 100x22x255 to 100x22x575

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... metal (box) housed resistors



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... metal (box) housed resistors (SRF family - 1/2)



	<i>Power rating range with heat sink + Absorbed energy @ 250°C ΔT</i>	<i>Resistance ohmic range [Ω]</i>	<i>IP level</i>	<i>min and max dimensions range [length x depth x height]</i>
<p>SRF 100 & 150 ... fixing on longitudinal sides</p> 	<ul style="list-style-type: none"> • 100-150W • 8-10KJ 	0,39Ω-1,5K	IP55	from 120x29x16 to 180x29x16
<p>SRF 120 & 180 ... fixing on head sides</p> 	<ul style="list-style-type: none"> • 120-180W • 50-75KJ 	2,0-300Ω	IP55	from 170x42x20 to 170x65x20
<p>SRF 170-175 ... fixing on head sides</p>	<ul style="list-style-type: none"> • 165-600W • 29-120KJ 	1,8-1800Ω	IP55	from 90x35x30 to 320x35x30
<p>SRF 250 & 350 ... fixing with longitudinal sides or base brackets</p>	<ul style="list-style-type: none"> • 250-350W • 18-24KJ 	1,8-1800Ω	IP55	from 150x35x30 to 200x35x30

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... metal (box) housed resistors (SRF family - 2/2)

	<i>Power rating range with heat sink + Absorbed energy @ 250°C ΔT</i>	<i>Resistance ohmic range [Ω]</i>	<i>IP level</i>	<i>min and max dimensions range [length x depth x height]</i>
<p>SRF 650, 950, 1350</p> 	<ul style="list-style-type: none"> • 650-1.350W • 90-150KJ 	5,6 Ω-250Ω	IP55	from 155x70x20 to 255x70x20
<p>SRF 1001&2002 HE ... high energy version</p>	<ul style="list-style-type: none"> • 900-1800W • 450-800KJ 	6,8-300Ω	IP55	from 320x100x30 to 385x150x50
<p>SRF 600, 900, 1300</p> 	<ul style="list-style-type: none"> • 600-1.300W • 35-75KJ 	5,6 Ω-200Ω	IP33	from 102x68x13 to 195x81x13
<p>SRF 601-2001</p>	<ul style="list-style-type: none"> • 600-2.000W • 35-85KJ 	2,0-300Ω	IP33	from 129x68x12 to 222x68x12

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... metal (cage) housed resistors (RFH + RFF, SFO families)

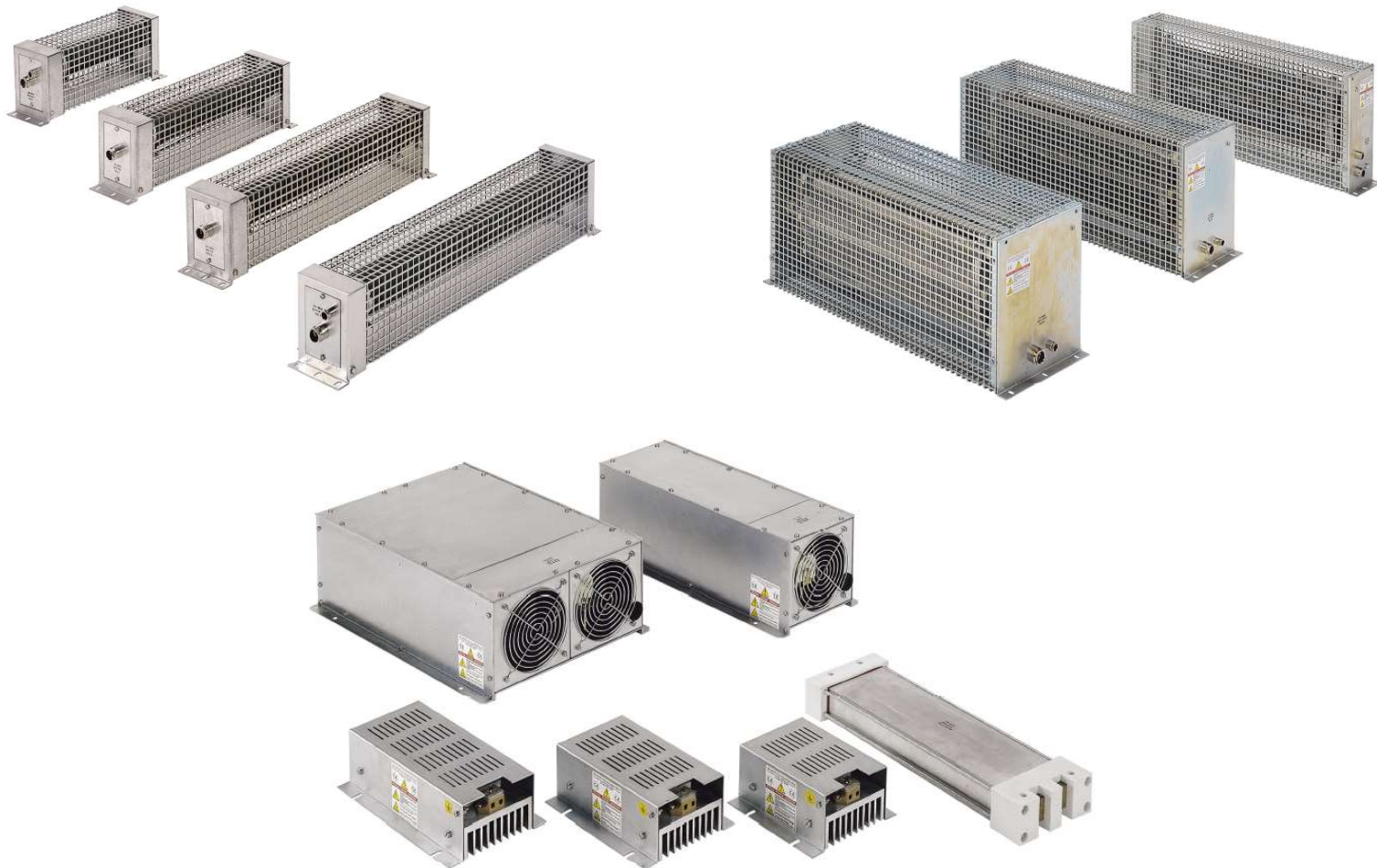
	<i>Power rating range with heat sink + Absorbed energy @ 250°C ΔT</i>	<i>Resistance ohmic range [Ω]</i>	<i>IP level</i>	<i>min and max dimensions range [length x ldepth x height]</i>
RFH 350, 500, 750, 1100 	<ul style="list-style-type: none"> • 350-950W • 50-150KJ 	1,0Ω -20K	IP55 IP65	from 110x95x30 to 320x95x30
RFH 1000, 1400, 1900	<ul style="list-style-type: none"> • 1.000-1.900W • 450-750KJ 	6,8-300Ω	IP55 IP65	from 246x100x73 to 366x100x73
RFH 1500, 1800, 2200	<ul style="list-style-type: none"> • 1.000-1.900W • 500-1.000KJ 	6,8-300Ω	IP55	from 320x120x40 to 380x190x67
RFF 201&301, 202&302 	<ul style="list-style-type: none"> • 200-370W • 40-50KJ 	0,4 -8K2	IP55	from 150x29x22 to 200x29x22
SFO 100, 150, 200, 300, 450, 600 ... high energy version	<ul style="list-style-type: none"> • 100-600W • 7-140KJ 	4,7-250 Ω	IP55	from 150x29x22 to 200x29x22

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... metal (cage) housed resistors



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... metal (cage) housed resistors (BDR family)



	Power rating range + Absorbed energy @ 250°C ΔT	Resistance ohmic range [Ω]	IP level	min and max dimensions range [length x depth x height]
<p>BDR 2K0, 4K0, 5K0, 8K0, 12K0, 16K0, 24K0</p> 	<ul style="list-style-type: none"> • 2-24KW • 20-120KJ 	1 - 100Ω	IP20	from 498x100x250 to 625x95x500
<p>BDR 4K1, 8K1, 12K1, 16K1, 24K1, 32K1</p> 	<ul style="list-style-type: none"> • 4-32KW • 20-260KJ 	1 - 100Ω	IP23	from 625x100x290 to 625x450x550
<p>BDR 48K2, 64K2</p>	<ul style="list-style-type: none"> • 48-64KW • 20-260KJ 	1 - 100Ω	IP21	from 625x510x860 to 625x510x1200

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... metal (cage) housed resistors (BUV, BRU, BRE families)

	<i>Power rating range + Absorbed energy @ 250°C ΔT</i>	<i>Resistance ohmic range [Ω]</i>	<i>IP level</i>	<i>min and max dimensions range [length x ldepth x height]</i>
<p>BUV 1 ... ventilated resistors</p> 	<ul style="list-style-type: none"> • 1-4KW • 0,5-16KJ 	2Ω- 10K	IP22	425x180x145
<p>BRU 10K, 14K, 16K, 21K ... ventilated resistors</p> 	<ul style="list-style-type: none"> • 6-24KW • 12KJ-48KJ 	2Ω- 10K	IP20	from 480x340x540 to 590x340x650
<p>BRE xx1, BRE 600-1000</p>	<ul style="list-style-type: none"> • 0,6-1,5KW • 5-12KJ 	4-330Ω	IP20	from 294x64x120 to 455x121x141

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... other resistors (“high energy absorption” + “water cooling”)

	<i>Power rating range + Absorbed energy</i>	<i>Resistance ohmic range [Ω]</i>	<i>IP level</i>	<i>min and max dimensions range [length x depth x height]</i>
<p>... form high energy absorption ... and high dielectric strength too (> 12.000 V_{rms})</p> <p>RPGS 500, 750, 1000, 1500</p>	<ul style="list-style-type: none"> •500-1600W •250-500KJ in 60 sec 	0,2 Ω – 30K	IP55	from 425x125x125 to 520x125x125



... water cooled resistors ...
“high power small volume”

RHO 6000, 25000

<ul style="list-style-type: none"> • 6KW-15KW • 2,4-6KJ 	3,3 Ω – 2K	IP55	from 390x70x80 to 515x135x155
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... other resistors (“low power braking” + “heaters” + “low power ceramic cage”)



	<i>Power rating range</i>	<i>Resistance ohmic range</i> [Ω]	<i>IP level</i>	<i>min and max dimensions range</i> [length x ldepth x height]
<p>... low power braking</p> <p>SFM 51, 76, 101, 121xx</p>	50W-120W	0,2 Ω – 30K	IP33	from 100x40x11 to 195x40x13
<p>... heaters and condensate prevention</p> <p>ACP 50, 100 ... ACS 100, 200 ... ACST 100,200</p>	50W-200W	1,4 Ω – 5K	IP54	from 100x50x29 to 200x100x35
 <p>... low power ceramic cage</p> <p>RFA 4, ..., 20</p>	4 - 22W	0,1Ω – 27K	IP56	from 20x6,4x6,4 to 64x12,5x12,5

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... other resistors (“Al housed with heat sink” + “shunt” + “rheostat”)

	<i>Power rating range</i>	<i>Resistance ohmic range [Ω]</i>	<i>IP level</i>	<i>min and max dimensions range [length x deapth x height]</i>
<p>... Al housed with heat sink</p> <p>RHS, RHW</p> 	10 - 600W	0,1Ω – 62K	IP56	from 19x21x11 to 115x73x46
<p>... shunt</p> <p>SH series</p> 	from 1A to 4000A @ 60 and 150mV	n.a.	n.a.	from 90x20x8 to 200x120x60
<p>... rheostat</p> <p>cemented or enamelled rheostat</p>	25 - 1000W	1Ω – 33K	n.a.	from 42x45x35 to 200x270x85

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... “groups”

- each resistor can be arranged in groups or in rack accordingly to the customer needs.
- here next some some examples about



RPGS group
G4 RPGS



SCE group
G4 SCE



grid resistor group



RDP in rack
(120KW system)

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Application sectors

For their intrinsic characteristics, power resistors are applied in any sector, whose most important ones are:

✓ **industrial automation**



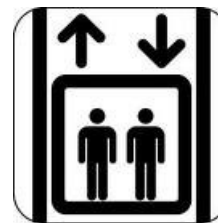
✓ **energy** (wind mills, photovoltaic etc.)



✓ **transport** (railway, trams etc.)

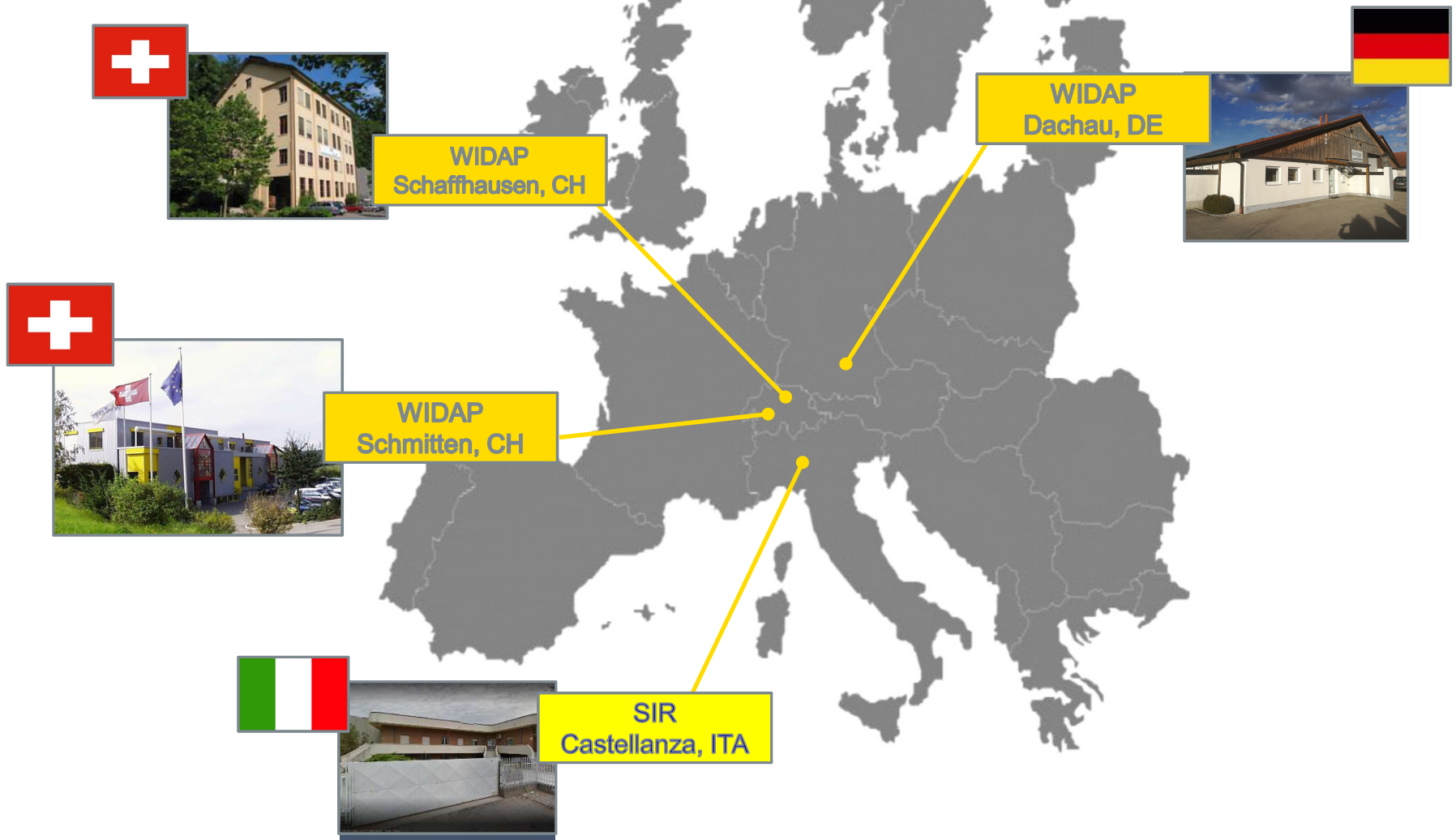


✓ **movement systems** (lifts, cranes etc.)



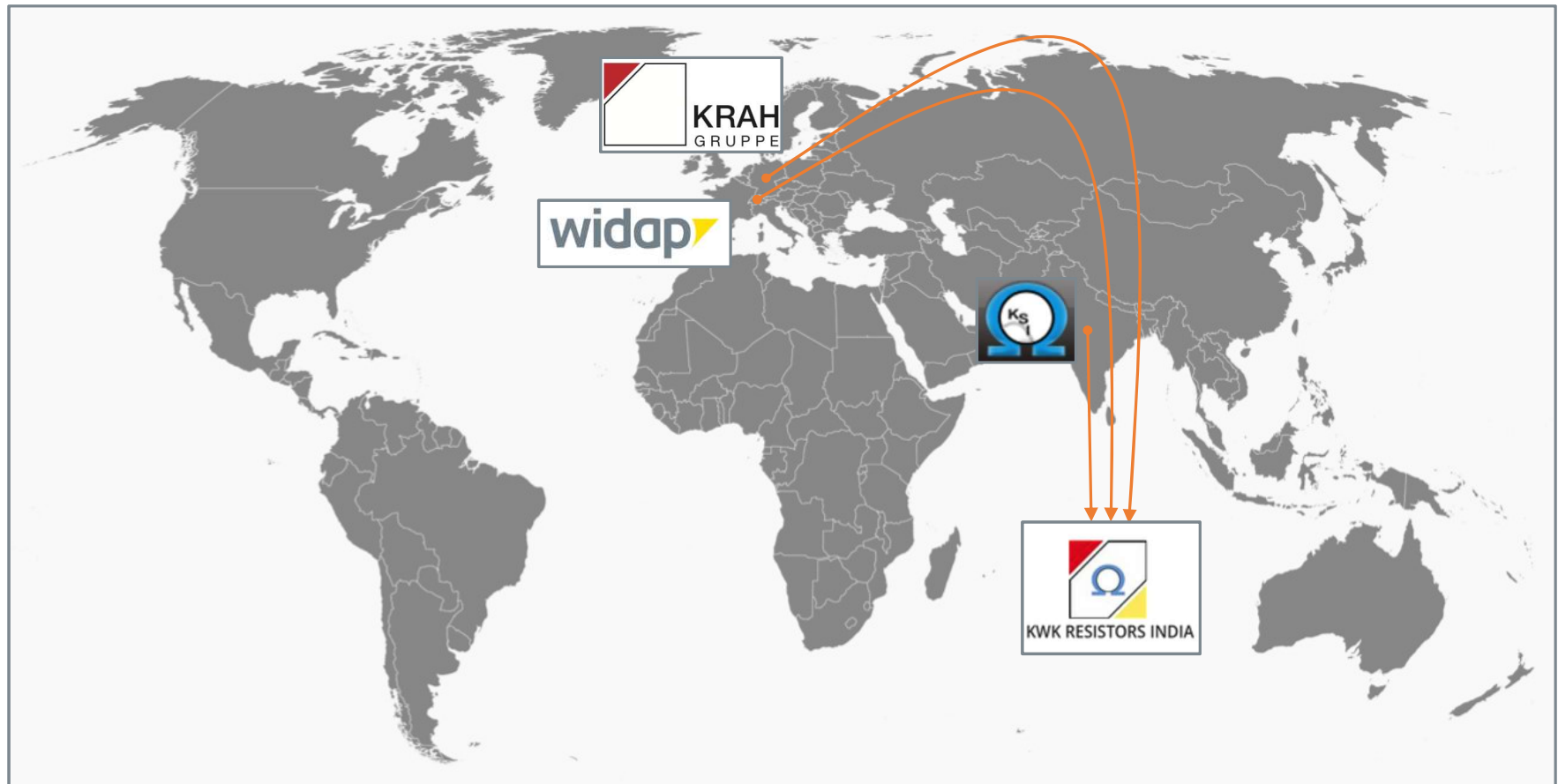
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Thank you for your attention

