

# ALPHA FIX Terminal Blocks

## ALPHA FIX 8WA and 8WH Terminals with Screw Connection

### General technical specifications

#### Technical specifications

##### Continuous load at increased ambient temperatures

To 8WA1 terminal blocks, the full continuous current can be applied at ambient temperatures of up to +55 °C. At higher ambient temperatures, a current reduction according to the following formula is required:

$$I_{th2'} = I_{th2} \cdot k$$

$I_{th2}$  = Continuous current according to selection tables, relative to the nominal cross-section

$I_{th2'}$  = Continuous current at increased ambient temperature

$k$  = Reduction factor according to table

Ambient temperature	Reduction factor $k$
60 °C	0.94
65 °C	0.88
70 °C	0.82
75 °C	0.75
80 °C	0.67
85 °C	0.58
90 °C	0.47
95 °C	0.33

The highest permissible clamping point overtemperature of 45 K according to IEC 60947-7-1 is not exceeded at an ambient temperature of up to 100 °C.

##### Mounting rails as PEN rails

Only copper busbars must be used.

They must have the same current carrying capacity of PE/ground conductor busbars.

PEN busbars must carry only terminals, and no devices.

##### Mounting rail as PE/ground conductor busbar

To mounting rails that are also PE/ground conductor busbars and carry current only under fault conditions, PE/ground conductors with a larger cross-section than that of a PE/ground conductor busbar with the same conductivity can also be connected.

Mounting rail according to EN 50022-35 and IEC 60715 TH35	Material	Type	Max. permissible cross-section of connected protective conductor mm <sup>2</sup>
35 × 7.5	Steel	5ST1 141	16
	Steel, perforated	5ST1 145	16
Similar to 35 × 15	Steel	5ST1 142	35
	Steel	--	50
	Copper	8WA7 551	150 <sup>1)</sup>

1) With 8WA1 010-1PQ00 terminal connection of up to 95 mm<sup>2</sup> finely stranded or 120 mm<sup>2</sup> stranded.

##### Clamping points

Terminal size	Type <sup>1)</sup>	Thread diameter of terminal screws	Screwdriver blades according to DIN 5264 Form B	Tightening torque = test torque according to DIN VDE 0609 and DIN VDE 0611 Nm	Tensile forces according to IEC 60947-1 at max. conductor connection N	Stripped length mm
1.5	8WA1 011-.SF.., 8WA1 011-1EE00	M3.5	0,8 × 4	0.8	40	10
2.5	8WA1 ..1, 8WA1 011-1BF11, 8WA1 011-1EF.., 8WA1 011-..F..	M2.5 and M3	0.5 × 3	0.5	50	11
		M2.5	0.8 × 4	0.5	50	11
4	8WA1 011-..G.., 8WA2 867	M3 M3.5	0.8 × 4	0.5 0.8 ... 1	60	11
6	8WA1 ..2, 8WA1 011-..H..	M3.5	0,8 × 4	0.8	80	11
16	8WA1 ..4, 8WA1 011-..K..	M4	0.8 × 4	1,2	100	13
25	8WA2 868	M5	1.2 × 6.5	2	135	
35	8WA1 ..5, 8WA1 011-..M.., 8WA2 870	M6	1.2 × 6.5	2.5 ... 3	190	17
				2.5 ... 3		
50	8WH1 000-0AN00, 8WH1 000-0AN01, 8WH1 000-0CN07 8WH1 070-0AN00	M6	1.2 × 8	6 ... 8	-	24
		M6	--	3 ... 7	-	6 ... 25
70	8WA1 ..6	M8	4 hexagon socket-head	6	285	25
95	8WA1 010-1PQ00 8WH1 000-0AQ00, 8WH1 000-0AQ01 8WH1 000-0CQ07 8WH1 070-0AQ00 8WH1 060-0AQ00	M8	6 hexagon socket-head	15 ... 20	-	30
		M8	6 hexagon socket-head	15 ... 20	-	33
		M8	6 hexagon socket-head	15 ... 20	-	30
		M8	-	6 ... 15	-	16... 25
		M8	-	25 ... 30	-	29
150	8WH1 000-0AS0. 8WH1 070-0AS00 8WH1 060-0AS00	M10	8 hexagon socket-head	25 ... 30	-	40
		M10	-	10 ... 18	-	10 ... 18
		M10	-	25 ... 30	-	34
240	8WH1 000-0AU0. 8WH1 060-0AU00	M10	10 hexagon socket-head	30 ... 35	-	40
		M10	-	30 ... 35	-	34

1) Tightening torque apply also for accessories (socket, link rails, etc.)

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#### Rated impulse withstand voltage of terminal blocks

Values depend on the mains nominal voltage  $\leq$  Rated insulation voltage of terminal block; excerpt from EN 60947-1, table H.1. Terminal blocks are tested to overvoltage category III.

Rated mains voltage ( $\leq$ Rated insulating voltage of the device) r.m.s.value V AC	Highest rated operational voltage to ground r.m.s.value V AC or DC	Preferred values for rated impulse withstand voltage as 1.2/50 $\mu$ s-pulse			
		Overvoltage category			
		I kV	II kV	III kV	IV kV
--	50	330	500	800	1500
66/115	100	500	800	1500	2500
120/208 127/220	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

#### Connection

Terminal size	Type	Smallest connectable cross-section				Largest connectable cross-section					
		Solid mm <sup>2</sup>	Stran- ded mm <sup>2</sup>	Flexi- ble mm <sup>2</sup>	Finely stranded with end sleeve <sup>1)</sup> mm <sup>2</sup>	Solid mm <sup>2</sup>	Stran- ded mm <sup>2</sup>	Flexi- ble mm <sup>2</sup>	Finely stranded with end sleeve <sup>1)</sup> mm <sup>2</sup>	Size	
<b>Single-conductor connection</b>											
1,5	8WA1 011-SF . . . 8WA1 011-1EE00	1	--	--	0.75	0.75 ... 10	2.5	--	--	1.5	1.5 ... 10
2.5	8WA1 211, 8WA1 011-. .F. .	0.25 <sup>2)</sup>	0.5	0.5	0.5	0.5 ... 10	4	2.5	2.5	2.5	2.5 ... 12 <sup>4)</sup>
	8WA1 011-3JF . .	0.25 <sup>2)</sup>	0.5	0.5	0.5	0.5 ... 10	4	2.5	2.5	2.5	2.5 ... 7
	8WA1 501, 8WA1 511, 8WA1 011-1EF . .	0.25 <sup>2)</sup>	0.5	0.5	0.5	0.5 ... 10	4	2.5	2.5	1.5	1.5 ... 10
4	8WA9 200	0.5	1.5	1.5	0.75	0.75 ... 10	6	4	4	4	4
	8WA2 86. feeder terminal	1	1.5	1.5	0.75	0.75 ... 10	6	4	4	4	4 ... 12 <sup>4)</sup>
	8WA1 011-. .G. .	0.5	1.5	0.5	0.75	0.75 ... 10	6	4	4	4	4 ... 12 <sup>4)</sup>
6	8WA1 011-1.H. .	0.75	1.5	1.5	0.5	0.5 ... 10	10	6	6	6	6 ... 12
	8WA1 010-1PH01	0.5	1.5	1.5	0.5	0.5 ... 10	10	6	6	6	6 ... 15
16	8WA1 204, 8WA1 304, 8WA1 011-1BK11	1.5	2.5	2.5	1	1 ... 10 <sup>3)</sup>	16	25	16	16	16 ... 12
	8WA1 604, 8WA1 011-1NK02	1.5	2.5	4	1.5	1 ... 10 <sup>3)</sup>	16	25	16	16	16 ... 12
	8WA1 011-1PK00	1.5	2.5	4	1.5	1.5 ... 7 <sup>6)</sup>	16	25	16	16	16 ... 15
	8WA2 86. feeder terminal	1.5	2.5	4	2.5	2.5 ... 12	16	16	10	10	10 ... 12
25	8WH1 060-OAL00	-	-	4	4	-	-	25	25	-	-
35	8WA1 205, 8WA1 305, 8WA1 011-1BM11	4	10	6	6	6 ... 15	16 <sup>5)</sup>	50	35	35	35 ... 18 <sup>7)</sup>
	8WA1 011-1PM00	4	10	10	6	6 ... 15	16 <sup>5)</sup>	50	35	25	25 ... 15
	8JH4 114 feeder terminal	6	10	16	6	6 ... 15	16	35	25	25	25 ... 15
	8WA2 870	6	10	16	6	6 ... 15	16	35	25	25	25 ... 15
50	8WH1 000-OAN00, 8WH1 000-OAN01, 8WH1 000-OCN07	--	--	10	10	--	--	--	50	50	--
	8WH1 070-OAN00	--	--	10	10	--	--	--	50	50	--
	8WH1 060-OAN00	--	--	25	25	--	--	--	50	50	--
	8WH1 070-OAN00	--	--	6 <sup>1)</sup>	--	--	--	--	--	35 <sup>1)</sup>	--
	8WH1 060-OAN00	--	--	25	25	--	--	--	50	50	--
70	8WA1 206	10	16	16	16	16 ... 12 <sup>6)</sup>	95	95	95	--	--
95	8WA1 010-1PQ00	--	50	50	--	--	--	95	95	--	--
	8WH1 000-0AQ00, 8WH1 000-0AQ01, 8WH1 000-0CQ07	--	--	35	35	--	--	--	95	95	--
	8WH1 070-0AQ00	--	--	35	35	--	--	--	95	95	--
	8WH1 060-0AQ00	--	--	35	35	--	--	--	95	95	--
	8WH1 070-0AQ00	--	--	--	16 <sup>1)</sup>	--	--	--	--	35 <sup>1)</sup>	--
	8WH1 060-0AQ00	--	--	35	35	--	--	--	95	95	--
150	8WH1 000-OAS00, 8WH1 000-OAS01	--	--	50	50	--	--	--	150	150	--
	8WH1 060-OAS00	--	--	50	50	--	--	--	150	150	--
	8WH1 060-OAS00	--	--	50	50	--	--	--	150	150	--
240	8WA1 011-1DU. .	--	--	--	--	--	--	240	240	--	--
	8WH1 000-OAU00, 8WH1 000-OAU01	--	--	70	70	--	--	--	185	185	--
	8WH1 060-OAU00	--	--	70	70	--	--	--	185	185	--
	8WH1 060-OAU00	--	--	70	70	--	--	--	185	185	--

1) End sleeves according to DIN 46228 Sheet 1 without insulation. Size corresponds with sleeve nominal size.

2) 0.12/0.25 mm<sup>2</sup> corresponds with  $\varnothing$  0.4/0.6 mm.

3) For 0.75 mm<sup>2</sup> conductors, use end sleeves 1-10 and press on with insert E1 or PZ 1.5.

4) At voltages > 500 V, shorten end sleeves with inserted conductor to 10 mm before pressing on.

5) Tested up to 16 mm<sup>2</sup>.

6) Fit and press on two end sleeves behind one another (to stop).


7) Voltage reduction to 630 V required.

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## ALPHA FIX 8WA and 8WH Terminals with Screw Connection

### General technical specifications

Terminal size	Type	Smallest connectable cross-section					Largest connectable cross-section				
		Solid mm <sup>2</sup>	Stranded mm <sup>2</sup>	Flexible mm <sup>2</sup>	Finely stranded with end sleeve <sup>1)</sup>		Solid mm <sup>2</sup>	Stranded mm <sup>2</sup>	Flexible mm <sup>2</sup>	Finely stranded with end sleeve <sup>1)</sup>	
					mm <sup>2</sup>	Size				mm <sup>2</sup>	Size
<b>Two-wire connection, 2 conductors each of same cross-section; with end sleeves</b> the two rectangular sleeves must be inserted in the same position. 											
1.5	8WA1 011-. .SF . ., -1EE00	2 × 1	--	--	2 × 0.75	1 ... 10 <sup>3)</sup>	2 × 2.5	--	--	2 × 1.5	1,5 ... 10
2.5	8WA1 211, 8WA1 011-. .F. . 8WA1 501, 8WA1 511, 8WA1 011-1EF. .	2 × 0.12 <sup>2)</sup> 2 × 0.12 <sup>2)</sup>	2 × 0.5 2 × 0.5	2 × 0.5 2 × 0.25	2 × 0.5 <sup>9)</sup> --	0.75 ... 6 --	2 × 0.75 2 × 0.75	2 × 0.5 2 × 0.5	2 × 0.5 2 × 0.75	2 × 1.5 <sup>9)</sup> --	1.5 ... 10 --
4	8WA1 011-. .G. ., -1DG11 8WA1 011-2DG11 8WA1 011-6DG11, top 8WA1 011-6DG11, bottom 8WA1 011-1PG00 8WA1 011-1PG11, -1NG01	2 × 0.5 2 × 0.5 2 × 0.5 2 × 0.5 2 × 0.5 2 × 0.5	2 × 1 2 × 1 2 × 1 2 × 1 2 × 1 2 × 1	2 × 1 2 × 1 2 × 1 2 × 1 2 × 1 2 × 1	2 × 0.5 2 × 0.5 2 × 0.5 2 × 0.5 2 × 0.5 2 × 0.5	0.5 × 10 0.5 × 10 0.5 × 10 0.5 × 10 0.5 × 10 0.5 × 10	2 × 1.5 2 × 1 2 × 1.5 2 × 1 2 × 1 2 × 1.5	2 × 1.5 2 × 1.5 2 × 1.5 2 × 1.5 2 × 1.5 2 × 1.5	2 × 1.5 2 × 1.5 2 × 1.5 2 × 1.5 2 × 1.5 2 × 1.5	2 × 1.5 2 × 1 2 × 1.5 2 × 1 2 × 1 2 × 1	1.5 ... 10 1 ... 10 1 ... 10 1 ... 10 1 ... 10 1 ... 10
6	8WA1 011-1. .H. ., -3DH21 8WA1 010-1PH01	2 × 0.5 2 × 0.5	2 × 0.75 2 × 0.75	2 × 0.75 2 × 0.75	2 × 0.5 2 × 0.5	0.5 × 10 0.5 × 10	2 × 1.5 2 × 1.5	2 × 1.5 2 × 1.5	2 × 1.5 2 × 1.5	2 × 1.5 2 × 0.75	1.5 ... 10 1 ... 10
16	8WA1 204, 8WA1 304, 8WA1 604, 8WA1 011-1BK11 8WA1 734	2 × 1 2 × 2.5	2 × 2.5 --	2 × 2.5 --	2 × 1 2 × 1.5	1 ... 10 1.5 ... 7 <sup>6)</sup>	2 × 4 2 × 4	2 × 4 2 × 4	2 × 4 2 × 4	2 × 4 2 × 4	4 ... 12 4 ... 12
35	8WA1 205, 8WA1 305, 8WA1 011-1BM11, 8WA1 735	2 × 4 2 × 10	2 × 10 2 × 6	2 × 6 2 × 6	2 × 6 2 × 6	6 ... 15	2 × 10 2 × 10	2 × 10 2 × 10	2 × 10 2 × 10	2 × 10 2 × 10	10 ... 15
50	8WH1 000-0AN00, 8WH1 000-0AN01, 8WH1 000-0CN07	2 × 10	2 × 10	2 × 10	2 × 10	--	2 × 35	2 × 35	2 × 35	2 × 35	--
70	8WA1 206	2 × 10	2 × 10	2 × 10	2 × 10	10 ... 12 <sup>6)</sup>	2 × 16	2 × 16	2 × 16	2 × 16	16 ... 12 <sup>7)</sup>
95	8WH1 000-0AQ00, 8WH1 000-0AQ01, 8WH1 000-0CQ07	2 × 25	2 × 25	2 × 25	2 × 25	--	2 × 35	2 × 35	2 × 35	2 × 35	--
150	8WH1 000-0AS00, 8WH1 000-0AS01	2 × 25	2 × 25	2 × 25	2 × 25	--	2 × 50	2 × 50	2 × 50	2 × 50	--
240	8WH1 000-0AU00, 8WH1 000-0AU01	2 × 35	2 × 35	2 × 35	2 × 35	--	2 × 95	2 × 95	2 × 95	2 × 95	--

- 1) End sleeves according to DIN 46228 Sheet 1 without insulation. Size corresponds with sleeve nominal size.
- 2) 0.12/0.25 mm<sup>2</sup> corresponds with Ø 0.4/0.6 mm.
- 3) For 0.75 mm<sup>2</sup> conductors, use end sleeves 1-10 and press on with insert E1 or PZ 1.5.
- 4) At voltages > 500 V, shorten end sleeves with inserted conductor to 10 mm before pressing on.
- 5) Tested up to 16 mm<sup>2</sup>.
- 6) Fit and press on two end sleeves behind one another (to stop).
- 7) Voltage reduction to 630 V required.
- 8) With screw terminal.
- 9) With PZ 1.5 on top of each other .

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## ALPHA FIX 8WA and 8WH Terminals with Screw Connection

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### General technical specifications

CSA and UR rating

Terminal size	Type	CSA rating			UR rating		
		AWG	Rated current $I_n$ A	Rated voltage $U_e$ V	AWG	Rated current $I_n$ A	Rated voltage $U_e$ V
1,5	8WA1 011-1SF12	18-14	6,3	600	18-14	6,3	600
	8WA1 011-1SF24, -2SF24, -4SF24	14	1	--	14-12	1	240 V AC/60 V DC
	8WA1 011-1SF25, -2SF25, -4SF25	14	2	--	14-12	2	240 V AC/60 V DC
	8WA1 011-1SF26, -2SF26, -4SF26	14	4	--	14-12	4	240 V AC/60 V DC
	8WA1 011-1SF27, -2SF27, -4SF27	14	6	--	14-12	6	240 V AC/60 V DC
	8WA1 011-1SF28, -2SF28, -4SF28	14	10	--	14-12	10	240 V AC/60 V DC
2,5	8WA1 011-1BF21, -1BF22, -1BF23, -1PF11	18-12	25	600	22-12	26	600
	8WA1 011-1DF11, -3DF21, -0DF21, -0DF22	18-12	25	600	22-12	26	600
	8WA1 011-1NF01, -1NF02	22-12	26	600	22-12	26	600
	8WA1 011-3JF..	--	--	--	22-12	26	300
	8WA1 011-1PF00, 8WA1 011-1PF01	22-12	--	--	22-12	--	--
	8WA1 501	22-12	10	300 D	22-12	10	300
4	8WA1 011-1PG00, 8WA1 011-1PG01	18-10	--	--	18-10	--	--
	8WA1 011-1BG11, -1BG21, -1BG22	18-10	40	600	18-10	35	600
	8WA1 011-1DG11, -3DG21, -0DG21, -0DG22	18-10	40	600	18-10	35	600
	8WA1 011-1NG31, -1NG32	18-10	40	600	18-10	35	600
	8WA1 011-1PG11	18-10	40	600	--	--	--
	8WA1 011-2DG11, -2DG11	18-10	40	300	18-10	35	600
	8WA1 011-6BG11, -6DG11	18-10	40	300	18-10	35	600
	8WA1 011-6EG..	--	--	--	18-10	34	300
	8WA9 200	18-10	25	300	18-10	26	600
	6	8WA1 011-1PH00	--	--	--	14-8	--
8WA1 011-1BH23, -1PH11		16-10	35	600	14-8	44	600
8WA1 011-1DH11, -3DH21		16-8	35	600	14-8	44	600
8WA1 011-1NH01, -1NH02		14-8	44	600	14-8	44	600
8WA1 011-1MH10, -1MH11, -1MH15		16-10	35/40	600/300 C/D	14-8	44	600/300
8WA1 232		--	--	--	14-8 -1)	24	600
16	8WA1 011-1BK11	14-6	70	600	12-4	79	600
	8WA1 011-1NK02	--	--	--	12-4	73	300
	8WA1 011-1PK00	12-4	--	--	12-4	--	--
	8WA1 012-1DK10	--	--	--	--	79	600
	8WA1 204, 8WA1 304	14-6	70	600	12-4	79	600
8WA1 604	--	--	--	12-4	73	300	
25	8WH1 060-0AL00	6-4	100	600	6-4	85	600
35	8WA1 011-1BM11	12-2	100	600	10-1	120	600
	8WA1 011-1PM00	10-1	--	--	10-1	--	--
	8WA1 205, 8WA1 305	12-2	100	600	10-1	120	600
50	8WH1 000-0AN00, 8WH1 000-0AN01	6-0	125	600	6-0	150	600
	8WH1 000-0CN07	--	--	--	6-1	--	--
	8WH1 060-0AN00	6-0	125	600	6-0	150	600
	8WH1 000-0AN00	6-0	125	600	6-0	150	600
70	8WA1 012-1DP14	2/0-1	170	600	6-3/0	--	600
	8WA1 206	8-1/0	150	600	8-3/0	220	600
95	8WH1 000-0AQ00, 8WH1 000-0AQ01	1-000	220	600	2-000	230	600
	8WH1 000-0CQ07	2-4	--	--	2-4	--	--
	8WH1 060-0AQ00	2-000	200	600	2-000	230	600
150	8WH1 000-0AS0, 8WH1 000-0AS01	2 – 300 kcmil	275	600	2 – 300 kcmil	285	600
	8WH1 060-0AS00	2 – 300 kcmil	275	600	2 – 300 kcmil	285	600
240	8WH1 000-0AU00, 8WH1 000-0AU01	0 – 500 kcmil	400	600	0 – 500 kcmil	380	600
	8WH1 000-0AU00	0 – 500 kcmil	400	600	0 – 500 kcmil	380	600

1) Push-on connection.

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### General technical specifications

#### Conductor cross-sections according to AWG (American Wire Gauge)

AWG No.	Wire diameter mm	Cross-section mm <sup>2</sup>	AWG No.	Wire diameter mm	Cross-section mm <sup>2</sup>	AWG No.	Wire diameter mm	Cross-section mm <sup>2</sup>
30	0.254	0.051	18	1.024	0.82	6	4.115	13.30
29	0.287	0.065	17	1.151	1.04	5	4.620	16.77
28	0.320	0.081	16	1.290	1.31	4	5.189	21.15
27	0.363	0.102	15	1.450	1.65	3	5.827	26.66
26	0.404	0.128	14	1.628	2.08	2	6.543	33.62
25	0.455	0.163	13	1.829	2.63	1	7.348	42.41
24	0.511	0.205	12	2.052	3.31	1/0	8.252	53.52
23	0.574	0.259	11	2.304	4.17	2/0	9.266	67.43
22	0.643	0.33	10	2.588	5.26	3/0	10.404	85.01
21	0.724	0.41	9	2.906	6.63	4/0	11.684	107.21
20	0.813	0.52	8	3.268	8.37	5/0	--	135.35
19	0.912	0.65	7	3.665	10.55	6/0	--	170.50