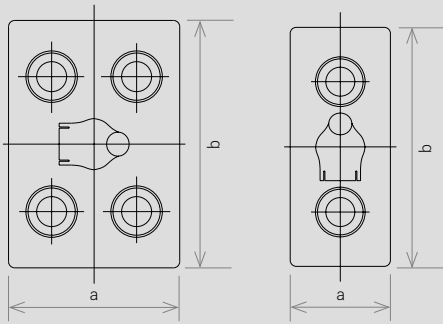


TOPLA TRACTION BATTERIES



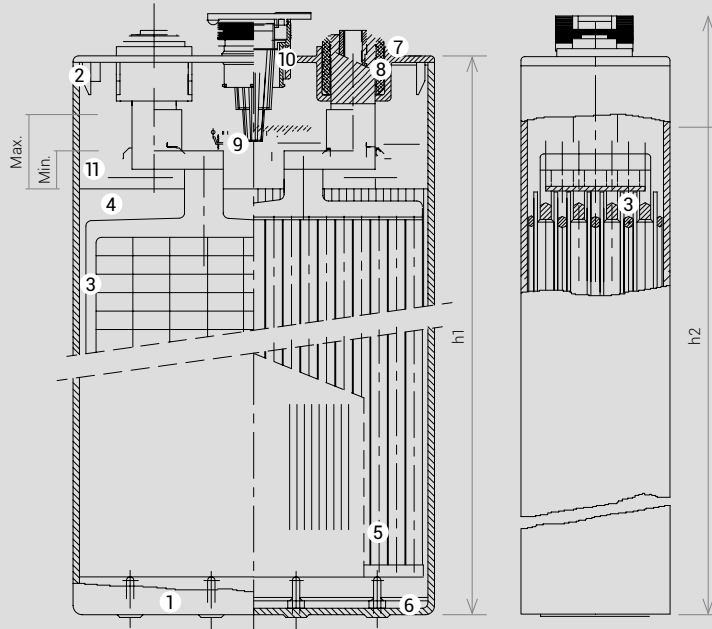
topla

DIN
DIN-S
BS
PzV
PzVB
PzRM



IN ORDER THAT THE BATTERIES WOULD MEET ALL YOUR DEMANDS, WE KINDLY ASK YOU TO ENCLOSE THE FOLLOWING DATA WITH YOUR ORDER:

- battery voltage
- capacity of the battery at a five-hour discharge rate
- dimensions of the battery tray
- designation and type of the electric machine
- any special demands
- a battery drawing (when possible)

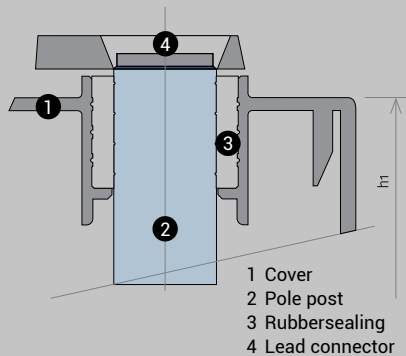


- 1 Polypropilene container
- 2 Polypropilene cover
- 3 Negative grid Plate
- 4 Microporous separator
- 5 Positive armoured tube Plate
- 6 Settling rib
- 7 Terminal post
- 8 Rubber sealing
- 9 Cell plug Ø 35,5
- 10 Plug sealing Ø 35,5
- 11 Electrolyte

IN CASE OF PROBLEMS WITH ORDERING WE WILL BE GLAD TO ADVISE AND ASSIST YOU IN THE SELECTION OF THE SUITABLE TYPE OF BATTERY.

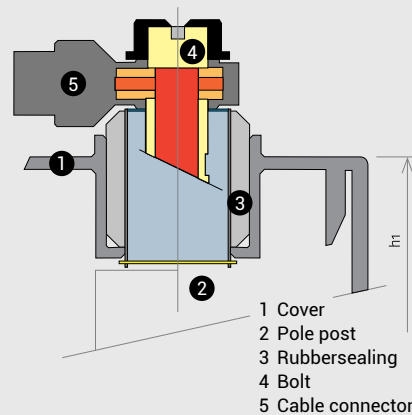
All measures and weights are within standard production tolerances. Electrical values are approximate. Technical modifications are reserved without prior notice.

TERMINAL POST WELDED VERSION



- 1 Cover
- 2 Pole post
- 3 Rubbersealing
- 4 Lead connector

TERMINAL POST BOLTED VERSION



- 1 Cover
- 2 Pole post
- 3 Rubbersealing
- 4 Bolt
- 5 Cable connector

BOTH VERSIONS ARE BEING MANUFACTURED:

• DRY-CHARGED VERSION:

a battery / cell have to be filled up with an electrolyte and supplementary charged before use. The Plates are already formed and in special process protected against oxidation. They can be stored up to two years.

• ELECTROLYTE-CHARGED:

a battery / cell can be installed immediately, because it is already filled up with electrolyte and electrically charged as well.

DIN STANDARD CHARACTERISTIC DATA

Electrolyte density by 30 °C: 1,29 ± 0,01 kg/l. Weight tolerance is ± 5 %.

Cells from 7 to 10 PzS types are available with 2 poles. For 4 poles, please specify with your order.

All 12 PzS and 10 Pg/555 and 10 Pg/590 cells are available with 4 poles only.

50Ah/plate

h1 = 282, h2 = 305 mm | length = b = 198 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|--------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzS 100 L | 2 Pg 190 L | 100 | 47 | 6,8 | 5,7 |
| 3 PzS 150 L | 3 Pg 190 L | 150 | 65 | 9,6 | 7,7 |
| 4 PzS 200 L | 4 Pg 190 L | 200 | 83 | 12,4 | 9,9 |
| 5 PzS 250 L | 5 Pg 190 L | 250 | 101 | 15,3 | 12,2 |
| 6 PzS 300 L | 6 Pg 190 L | 300 | 119 | 18,2 | 14,5 |
| 7 PzS 350 L | 7 Pg 190 L | 350 | 137 | 21,1 | 16,7 |
| 8 PzS 400 L | 8 Pg 190 L | 400 | 155 | 24,0 | 19,0 |
| 9 PzS 450 L | 9 Pg 190 L | 450 | 173 | 26,9 | 21,3 |
| 10 PzS 500 L | 10 Pg 190 L | 500 | 191 | 29,8 | 23,6 |
| 12 PzS 600 L | 12 Pg 190 L | 600 | 227 | 35,9 | 28,4 |

80Ah/plate

h1 = 402, h2 = 425 mm | length = b = 198 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|--------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzS 160 L | 2 Pg 310 L | 160 | 47 | 10,2 | 8,1 |
| 3 PzS 240 L | 3 Pg 310 L | 240 | 65 | 14,5 | 11,2 |
| 4 PzS 320 L | 4 Pg 310 L | 320 | 83 | 18,7 | 14,6 |
| 5 PzS 400 L | 5 Pg 310 L | 400 | 101 | 22,9 | 17,9 |
| 6 PzS 480 L | 6 Pg 310 L | 480 | 119 | 27,1 | 21,3 |
| 7 PzS 560 L | 7 Pg 310 L | 560 | 137 | 31,3 | 24,7 |
| 8 PzS 640 L | 8 Pg 310 L | 640 | 155 | 35,5 | 28,0 |
| 9 PzS 720 L | 9 Pg 310 L | 720 | 173 | 39,7 | 31,4 |
| 10 PzS 800 L | 10 Pg 310 L | 800 | 191 | 43,9 | 34,7 |
| 12 PzS 960 L | 12 Pg 310 L | 960 | 227 | 52,6 | 41,8 |

105Ah/plate

h1 = 515, h2 = 538 mm | length = b = 198 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|---------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzS 210 L | 2 Pg 425 L | 210 | 47 | 13,3 | 10,3 |
| 3 PzS 315 L | 3 Pg 425 L | 315 | 65 | 18,3 | 14,4 |
| 4 PzS 420 L | 4 Pg 425 L | 420 | 83 | 23,7 | 18,6 |
| 5 PzS 525 L | 5 Pg 425 L | 525 | 101 | 29,1 | 22,9 |
| 6 PzS 630 L | 6 Pg 425 L | 630 | 119 | 34,5 | 27,1 |
| 7 PzS 735 L | 7 Pg 425 L | 735 | 137 | 39,9 | 31,4 |
| 8 PzS 840 L | 8 Pg 425 L | 840 | 155 | 45,3 | 35,6 |
| 9 PzS 945 L | 9 Pg 425 L | 945 | 173 | 50,7 | 39,9 |
| 10 PzS 1050 L | 10 Pg 425 L | 1050 | 191 | 56,4 | 44,5 |
| 12 PzS 1260 L | 12 Pg 425 L | 1260 | 227 | 67,2 | 53,0 |

125Ah/plate

h1 = 570, h2 = 593 mm | length = b = 198 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|---------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzS 250 L | 2 Pg 480 L | 250 | 47 | 14,7 | 11,6 |
| 3 PzS 375 L | 3 Pg 480 L | 375 | 65 | 20,7 | 16,2 |
| 4 PzS 500 L | 4 Pg 480 L | 500 | 83 | 26,9 | 21,1 |
| 5 PzS 625 L | 5 Pg 480 L | 625 | 101 | 33,1 | 26,0 |
| 6 PzS 750 L | 6 Pg 480 L | 750 | 119 | 39,3 | 30,9 |
| 7 PzS 875 L | 7 Pg 480 L | 875 | 137 | 45,5 | 35,8 |
| 8 PzS 1000 L | 8 Pg 480 L | 1000 | 155 | 51,7 | 40,7 |
| 9 PzS 1125 L | 9 Pg 480 L | 1125 | 173 | 58,2 | 45,9 |
| 10 PzS 1250 L | 10 Pg 480 L | 1250 | 191 | 64,4 | 50,8 |
| 12 PzS 1500 L | 12 Pg 480 L | 1500 | 227 | 76,8 | 60,6 |

155Ah/plate

h1 = 720, h2 = 743 mm | length = b = 198 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|---------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzS 310 L | 2 Pg 590 L | 310 | 47 | 18,8 | 14,9 |
| 3 PzS 465 L | 3 Pg 590 L | 465 | 65 | 26,1 | 20,6 |
| 4 PzS 620 L | 4 Pg 590 L | 620 | 83 | 33,5 | 26,7 |
| 5 PzS 775 L | 5 Pg 590 L | 775 | 101 | 41,1 | 32,9 |
| 6 PzS 930 L | 6 Pg 590 L | 930 | 119 | 48,9 | 39,0 |
| 7 PzS 1085 L | 7 Pg 590 L | 1085 | 137 | 56,7 | 45,1 |
| 8 PzS 1240 L | 8 Pg 590 L | 1240 | 155 | 64,5 | 51,3 |
| 9 PzS 1395 L | 9 Pg 590 L | 1395 | 173 | 72,8 | 57,8 |
| 10 PzS 1550 L | 10 Pg 590 L | 1550 | 191 | 80,6 | 64,0 |
| 12 PzS 1860 L | 12 Pg 590 L | 1860 | 227 | 96,2 | 76,2 |

60Ah/plate

h1 = 340, h2 = 363 mm | length = b = 198 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|--------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzS 120 L | 2 Pg 250 L | 120 | 47 | 8,5 | 6,5 |
| 3 PzS 180 L | 3 Pg 250 L | 180 | 65 | 11,9 | 9,2 |
| 4 PzS 240 L | 4 Pg 250 L | 240 | 83 | 15,4 | 11,9 |
| 5 PzS 300 L | 5 Pg 250 L | 300 | 101 | 18,9 | 14,6 |
| 6 PzS 360 L | 6 Pg 250 L | 360 | 119 | 22,4 | 17,2 |
| 7 PzS 420 L | 7 Pg 250 L | 420 | 137 | 25,9 | 19,9 |
| 8 PzS 480 L | 8 Pg 250 L | 480 | 155 | 29,4 | 22,6 |
| 9 PzS 540 L | 9 Pg 250 L | 540 | 173 | 32,9 | 25,2 |
| 10 PzS 600 L | 10 Pg 250 L | 600 | 191 | 36,4 | 27,9 |
| 12 PzS 720 L | 12 Pg 250 L | 720 | 227 | 43,7 | 33,6 |

90Ah/plate

h1 = 472, h2 = 495 mm | length = b = 198 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|---------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzS 180 L | 2 Pg 360 L | 180 | 47 | 11,6 | 9,1 |
| 3 PzS 270 L | 3 Pg 360 L | 270 | 65 | 16,6 | 12,8 |
| 4 PzS 360 L | 4 Pg 360 L | 360 | 83 | 21,4 | 16,6 |
| 5 PzS 450 L | 5 Pg 360 L | 450 | 101 | 26,2 | 20,5 |
| 6 PzS 540 L | 6 Pg 360 L | 540 | 119 | 31,0 | 24,4 |
| 7 PzS 630 L | 7 Pg 360 L | 630 | 137 | 35,8 | 28,2 |
| 8 PzS 720 L | 8 Pg 360 L | 720 | 155 | 40,6 | 32,1 |
| 9 PzS 810 L | 9 Pg 360 L | 810 | 173 | 45,4 | 35,9 |
| 10 PzS 900 L | 10 Pg 360 L | 900 | 191 | 50,2 | 39,8 |
| 12 PzS 1080 L | 12 Pg 360 L | 1080 | 227 | 60,1 | 47,8 |

115Ah/plate

h1 = 545, h2 = 568 mm | length = b = 198 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|---------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzS 230 L | 2 Pg 445 L | 230 | 47 | 14,0 | 10,8 |
| 3 PzS 345 L | 3 Pg 445 L | 345 | 65 | 19,8 | 15,3 |
| 4 PzS 460 L | 4 Pg 445 L | 460 | 83 | 25,6 | 19,9 |
| 5 PzS 575 L | 5 Pg 445 L | 575 | 101 | 31,4 | 24,8 |
| 6 PzS 690 L | 6 Pg 445 L | 690 | 119 | 37,2 | 29,6 |
| 7 PzS 805 L | 7 Pg 445 L | 805 | 137 | 43,0 | 34,5 |
| 8 PzS 920 L | 8 Pg 445 L | 920 | 155 | 48,8 | 39,3 |
| 9 PzS 1035 L | 9 Pg 445 L | 1035 | 173 | 54,9 | 44,5 |
| 10 PzS 1150 L | 10 Pg 445 L | 1150 | 191 | 60,7 | 49,3 |
| 12 PzS 1380 L | 12 Pg 445 L | 1380 | 227 | 72,3 | 59,0 |

140Ah/plate

h1 = 686, h2 = 709 mm | length = b = 198 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|---------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzS 280 L | 2 Pg 555 L | 280 | 47 | 18,3 | 14,4 |
| 3 PzS 420 L | 3 Pg 555 L | 420 | 65 | 25,3 | 19,4 |
| 4 PzS 560 L | 4 Pg 555 L | 560 | 83 | 32,2 | 25,1 |
| 5 PzS 700 L | 5 Pg 555 L | 700 | 101 | 39,5 | 30,9 |
| 6 PzS 840 L | 6 Pg 555 L | 840 | 119 | 46,7 | 36,6 |
| 7 PzS 980 L | 7 Pg 555 L | 980 | 137 | 54,0 | 42,3 |
| 8 PzS 1120 L | 8 Pg 555 L | 1120 | 155 | 61,2 | 48,0 |
| 9 PzS 1260 L | 9 Pg 555 L | 1260 | 173 | 68,8 | 54,1 |
| 10 PzS 1400 L | 10 Pg 555 L | 1400 | 191 | 76,0 | 59,8 |
| 12 PzS 1680 L | 12 Pg 555 L | 1680 | 227 | 90,5 | 71,3 |



DIN S STANDARD CHARACTERISTIC DATA

Electrolyte density by 30 °C: 1,29 ± 0,01 kg/l.

Weight tolerance is ± 5 %.

Welded cells from 8-12 PzS with 4 poles. Screwed cells with 4 poles are signed with *.

110Ah/plate

h1 = 545, h2 = 568 mm | length = b = 198 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|-----------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzS 220 S | 2 Pg 425 S | 220 | 47 | 13,9 | 10,4 |
| 3 PzS 330 S | 3 Pg 425 S | 330 | 65 | 19,1 | 14,5 |
| 4 PzS 440 S | 4 Pg 425 S | 440 | 83 | 24,4 | 18,7 |
| 5 PzS 550 S | 5 Pg 425 S | 550 | 101 | 29,8 | 23,1 |
| 6 PzS 660 S | 6 Pg 425 S | 660 | 119 | 35,2 | 27,3 |
| 7 PzS 770 S | 7 Pg 425 S | 770 | 137 | 40,6 | 31,6 |
| 8 PzS 880 S | 8 Pg 425 S | 880 | 155 | 46,0 | 35,8 |
| 9 PzS 990 S | 9 Pg 425 S | 990 | 173 | 51,4 | 40,1 |
| 10 PzS 1100 S * | 10 Pg 425 S | 1100 | 191 | 57,1 | 44,6 |
| 12 PzS 1320 S * | 12 Pg 425 S | 1320 | 227 | 67,9 | 53,2 |

135Ah/plate

h1 = 686, h2 = 709 mm | length = b = 198 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|-----------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzS 270 S | 2 Pg 530 S | 270 | 47 | 18,1 | 14,4 |
| 3 PzS 405 S | 3 Pg 530 S | 405 | 65 | 25,0 | 18,6 |
| 4 PzS 540 S | 4 Pg 530 S | 540 | 83 | 31,9 | 24,1 |
| 5 PzS 675 S | 5 Pg 530 S | 675 | 101 | 38,8 | 29,5 |
| 6 PzS 810 S | 6 Pg 530 S | 810 | 119 | 45,7 | 34,9 |
| 7 PzS 945 S | 7 Pg 530 S | 945 | 137 | 52,6 | 40,4 |
| 8 PzS 1080 S | 8 Pg 530 S | 1080 | 155 | 59,5 | 45,8 |
| 9 PzS 1215 S * | 9 Pg 530 S | 1215 | 173 | 66,7 | 51,6 |
| 10 PzS 1350 S * | 10 Pg 530 S | 1350 | 191 | 73,6 | 57,0 |
| 12 PzS 1620 S * | 12 Pg 530 S | 1620 | 227 | 87,4 | 67,9 |

120Ah/plate

h1 = 570, h2 = 593 mm | length = b = 198 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|-----------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzS 240 S | 2 Pg 445 S | 240 | 47 | 14,3 | 10,9 |
| 3 PzS 360 S | 3 Pg 445 S | 360 | 65 | 20,2 | 15,4 |
| 4 PzS 480 S | 4 Pg 445 S | 480 | 83 | 26,0 | 20,0 |
| 5 PzS 600 S | 5 Pg 445 S | 600 | 101 | 31,8 | 24,8 |
| 6 PzS 720 S | 6 Pg 445 S | 720 | 119 | 37,6 | 29,7 |
| 7 PzS 840 S | 7 Pg 445 S | 840 | 137 | 43,4 | 34,6 |
| 8 PzS 960 S | 8 Pg 445 S | 960 | 155 | 49,2 | 39,4 |
| 9 PzS 1080 S * | 9 Pg 445 S | 1080 | 173 | 55,3 | 44,6 |
| 10 PzS 1200 S * | 10 Pg 445 S | 1200 | 191 | 61,1 | 49,4 |
| 12 PzS 1440 S * | 12 Pg 445 S | 1440 | 227 | 72,7 | 59,1 |

145Ah/plate

h1 = 720, h2 = 743 mm | length = b = 198 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|-----------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzS 290 S | 2 Pg 555 S | 290 | 47 | 18,5 | 14,7 |
| 3 PzS 435 S | 3 Pg 555 S | 435 | 65 | 25,8 | 19,7 |
| 4 PzS 580 S | 4 Pg 555 S | 580 | 83 | 32,4 | 25,4 |
| 5 PzS 725 S | 5 Pg 555 S | 725 | 101 | 39,7 | 31,2 |
| 6 PzS 870 S | 6 Pg 555 S | 870 | 119 | 47,0 | 36,9 |
| 7 PzS 1015 S | 7 Pg 555 S | 1015 | 137 | 54,3 | 42,7 |
| 8 PzS 1160 S | 8 Pg 555 S | 1160 | 155 | 61,6 | 48,4 |
| 9 PzS 1305 S * | 9 Pg 555 S | 1305 | 173 | 69,2 | 54,5 |
| 10 PzS 1450 S * | 10 Pg 555 S | 1450 | 191 | 76,5 | 60,2 |
| 12 PzS 1740 S * | 12 Pg 555 S | 1740 | 227 | 91,1 | 71,7 |



BS STANDARD CHARACTERISTIC DATA

Electrolyte density by 30 °C: 1,29 ± 0,01 kg/l. Weight tolerance is ± 5 %.
Cells from 9–11 PzB types are available with 4 poles only.

23Ah/plate

h1 = 216, h2 = 240 mm | length = b = 157,5 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|--------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzB 46 | 2 Pgi 135 | 46 | 45 | 3,7 | 3,0 |
| 3 PzB 69 | 3 Pgi 135 | 69 | 61 | 5,4 | 4,2 |
| 4 PzB 92 | 4 Pgi 135 | 92 | 77 | 6,9 | 5,4 |
| 5 PzB 115 | 5 Pgi 135 | 115 | 93 | 8,4 | 6,6 |
| 6 PzB 138 | 6 Pgi 135 | 138 | 109 | 10,0 | 7,8 |
| 7 PzB 161 | 7 Pgi 135 | 161 | 125 | 11,6 | 9,0 |
| 8 PzB 184 | 8 Pgi 135 | 184 | 141 | 13,2 | 10,2 |
| 9 PzB 207 * | 9 Pgi 135 | 207 | 157 | 15,3 | 11,9 |
| 10 PzB 230 * | 10 Pgi 135 | 230 | 173 | 16,9 | 13,1 |
| 11 PzB 253 * | 11 Pgi 135 | 253 | 189 | 18,4 | 14,3 |

42Ah/plate

h1 = 326, h2 = 350 mm | length = b = 157,5 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|--------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzB 84 | 2 Pgi 250 | 84 | 45 | 6,9 | 5,4 |
| 3 PzB 126 | 3 Pgi 250 | 126 | 61 | 9,4 | 7,3 |
| 4 PzB 168 | 4 Pgi 250 | 168 | 77 | 11,9 | 9,3 |
| 5 PzB 210 | 5 Pgi 250 | 210 | 93 | 14,5 | 11,3 |
| 6 PzB 252 | 6 Pgi 250 | 252 | 109 | 17,3 | 13,5 |
| 7 PzB 294 | 7 Pgi 250 | 294 | 125 | 20,0 | 15,6 |
| 8 PzB 336 | 8 Pgi 250 | 336 | 141 | 22,3 | 17,6 |
| 9 PzB 378 * | 9 Pgi 250 | 378 | 157 | 25,2 | 19,9 |
| 10 PzB 420 * | 10 Pgi 250 | 420 | 173 | 27,6 | 21,8 |
| 11 PzB 462 * | 11 Pgi 250 | 462 | 189 | 30,0 | 23,7 |

65Ah/plate

h1 = 453, h2 = 477 mm | length = b = 157,5 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|--------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzB 130 | 2 Pgi 360 | 130 | 45 | 8,2 | 6,8 |
| 3 PzB 195 | 3 Pgi 360 | 195 | 61 | 12,0 | 10,1 |
| 4 PzB 260 | 4 Pgi 360 | 260 | 77 | 15,5 | 13,0 |
| 5 PzB 325 | 5 Pgi 360 | 325 | 93 | 19,0 | 16,0 |
| 6 PzB 390 | 6 Pgi 360 | 390 | 109 | 22,6 | 18,9 |
| 7 PzB 455 | 7 Pgi 360 | 455 | 125 | 26,1 | 21,8 |
| 8 PzB 520 | 8 Pgi 360 | 520 | 141 | 29,6 | 24,5 |
| 9 PzB 585 * | 9 Pgi 360 | 585 | 157 | 33,6 | 27,9 |
| 10 PzB 650 * | 10 Pgi 360 | 650 | 173 | 37,2 | 30,6 |
| 11 PzB 715 * | 11 Pgi 360 | 715 | 189 | 40,7 | 33,3 |

86Ah/plate

h1 = 567, h2 = 591 mm | length = b = 157,5 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzB 172 | 2 Pgi 450 | 172 | 45 | 10,7 | 8,3 |
| 3 PzB 258 | 3 Pgi 450 | 258 | 61 | 15,0 | 11,8 |
| 4 PzB 344 | 4 Pgi 450 | 344 | 77 | 19,3 | 15,2 |
| 5 PzB 430 | 5 Pgi 450 | 430 | 93 | 23,7 | 18,6 |
| 6 PzB 516 | 6 Pgi 450 | 516 | 109 | 28,1 | 22,0 |
| 7 PzB 602 | 7 Pgi 450 | 602 | 125 | 32,6 | 25,4 |
| 8 PzB 688 | 8 Pgi 450 | 688 | 141 | 37,1 | 28,8 |
| 9 PzB 774 | 9 Pgi 450 | 774 | 157 | 42,3 | 32,9 |
| 10 PzB 860 | 10 Pgi 450 | 860 | 173 | 46,9 | 36,3 |
| 11 PzB 946 | 11 Pgi 450 | 946 | 189 | 51,4 | 39,7 |

108Ah/plate

h1 = 688, h2 = 712 mm | length = b = 157,5 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|-------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzB 216 | 2 Pgi 530 | 216 | 45 | 13,5 | 9,9 |
| 3 PzB 324 | 3 Pgi 530 | 324 | 61 | 18,9 | 14,3 |
| 4 PzB 432 | 4 Pgi 530 | 432 | 77 | 24,3 | 18,7 |
| 5 PzB 540 | 5 Pgi 530 | 540 | 93 | 29,7 | 23,2 |
| 6 PzB 648 | 6 Pgi 530 | 648 | 109 | 35,1 | 27,6 |
| 7 PzB 756 | 7 Pgi 530 | 756 | 125 | 40,5 | 32,1 |
| 8 PzB 864 | 8 Pgi 530 | 864 | 141 | 45,9 | 36,5 |
| 9 PzB 972 | 9 Pgi 530 | 972 | 157 | 52,0 | 41,6 |
| 10 PzB 1080 | 10 Pgi 530 | 1080 | 173 | 57,4 | 46,0 |
| 11 PzB 1188 | 11 Pgi 530 | 1188 | 189 | 62,8 | 50,4 |

32Ah/plate

h1 = 260, h2 = 284 mm | length = b = 157,5 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|--------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzB 64 | 2 Pgi 190 | 64 | 45 | 5,1 | 4,0 |
| 3 PzB 96 | 3 Pgi 190 | 96 | 61 | 7,1 | 5,6 |
| 4 PzB 128 | 4 Pgi 190 | 128 | 77 | 9,2 | 7,2 |
| 5 PzB 160 | 5 Pgi 190 | 160 | 93 | 11,3 | 8,8 |
| 6 PzB 192 | 6 Pgi 190 | 192 | 109 | 13,2 | 10,3 |
| 7 PzB 224 | 7 Pgi 190 | 224 | 125 | 15,0 | 11,7 |
| 8 PzB 256 | 8 Pgi 190 | 256 | 141 | 16,8 | 13,1 |
| 9 PzB 288 * | 9 Pgi 190 | 288 | 157 | 19,1 | 14,9 |
| 10 PzB 320 * | 10 Pgi 190 | 320 | 173 | 20,9 | 16,3 |
| 11 PzB 352 * | 11 Pgi 190 | 352 | 189 | 22,7 | 17,7 |

55Ah/plate

h1 = 399, h2 = 423 mm | length = b = 157,5 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzB 110 | 2 Pgi 310 | 110 | 45 | 7,6 | 6,1 |
| 3 PzB 165 | 3 Pgi 310 | 165 | 61 | 10,5 | 8,5 |
| 4 PzB 220 | 4 Pgi 310 | 220 | 77 | 13,5 | 11,0 |
| 5 PzB 275 | 5 Pgi 310 | 275 | 93 | 16,5 | 13,5 |
| 6 PzB 330 | 6 Pgi 310 | 330 | 109 | 19,6 | 15,9 |
| 7 PzB 385 | 7 Pgi 310 | 385 | 125 | 22,6 | 18,4 |
| 8 PzB 440 | 8 Pgi 310 | 440 | 141 | 25,6 | 20,8 |
| 9 PzB 495 | 9 Pgi 310 | 495 | 157 | 29,1 | 23,8 |
| 10 PzB 550 | 10 Pgi 310 | 550 | 173 | 32,1 | 26,3 |
| 11 PzB 605 | 11 Pgi 310 | 605 | 189 | 35,2 | 28,7 |

75Ah/plate

h1 = 513, h2 = 537 mm | length = b = 157,5 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|--------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzB 150 | 2 Pgi 413 | 150 | 45 | 10,0 | 7,5 |
| 3 PzB 225 | 3 Pgi 413 | 225 | 61 | 13,9 | 10,8 |
| 4 PzB 300 | 4 Pgi 413 | 300 | 77 | 17,8 | 14,1 |
| 5 PzB 375 | 5 Pgi 413 | 375 | 93 | 21,6 | 17,5 |
| 6 PzB 450 | 6 Pgi 413 | 450 | 109 | 25,6 | 20,9 |
| 7 PzB 525 | 7 Pgi 413 | 525 | 125 | 29,6 | 24,1 |
| 8 PzB 600 | 8 Pgi 413 | 600 | 141 | 33,5 | 27,4 |
| 9 PzB 675 * | 9 Pgi 413 | 675 | 157 | 38,2 | 31,1 |
| 10 PzB 750 * | 10 Pgi 413 | 750 | 173 | 42,3 | 34,2 |
| 11 PzB 825 * | 11 Pgi 413 | 825 | 189 | 46,4 | 37,3 |

100Ah/plate

h1 = 608 h2 = 632 mm | length = b = 157,5 mm

| CELL TYPE | TOPLA DESIGNATION | CAPACITY 5h | WIDTH mm | WEIGHT with acid | WEIGHT dry (kg) |
|-------------|-------------------|-------------|----------|------------------|-----------------|
| 2 PzB 200 | 2 Pgi 492 | 200 | 45 | 11,8 | 9,4 |
| 3 PzB 300 | 3 Pgi 492 | 300 | 61 | 16,6 | 13,5 |
| 4 PzB 400 | 4 Pgi 492 | 400 | 77 | 21,5 | 17,5 |
| 5 PzB 500 | 5 Pgi 492 | 500 | 93 | 26,4 | 21,6 |
| 6 PzB 600 | 6 Pgi 492 | 600 | 109 | 31,5 | 25,6 |
| 7 PzB 700 | 7 Pgi 492 | 700 | 125 | 36,4 | 29,7 |
| 8 PzB 800 | 8 Pgi 492 | 800 | 141 | 41,4 | 33,7 |
| 9 PzB 900 | 9 Pgi 492 | 900 | 157 | 47,1 | 38,6 |
| 10 PzB 1000 | 10 Pgi 492 | 1000 | 173 | 52,0 | 42,7 |
| 11 PzB 1100 | 11 Pgi 492 | 1100 | 189 | 56,9 | 46,7 |



TOPLA GEL TRACTION

Maintenance free TOPLA Gel batteries are high sophisticated traction batteries in the family of TOPLA motive power products.

Sealed TOPLA Gel batteries are produced in VRGLA Gel technology (Valve Regulated Lead Acid batteries with electrolyte in the form of gel) according to EN 60254-2 standard.

They can be used in all kind of electrical appliances like forklift trucks, electric road machines, cleaning machines, etc.

Due to its high operational safety and high degree of enviromental frendliness TOPLA Gel battery is particularly suitable for applications in pharmaceutical, food, chemical and similar industries.

Main characteristics

- MAINTENANCE FREE
- INCORPORATED VALVES IN EXHAUST TUBES PREVENT CORROSIVE GAS RELEASE
- EXTREMELY LOW SELF-DISCHARGE
- EXTREMELY LOW GASSING DURING OPERATION
- MAINTENANCE ERRORS ARE MINIMISED
- NO ELECTROLYTE LEAKAGE IN CASE OF CELL DAMAGE
- NO CONTAMINATION OR CORROSION DUE TO LEAKING ELECTROLYTE



PzV STANDARD CHARACTERISTIC DATA

55Ah/plate

h1 = 340, h2 = 350 mm | length = b = 198 mm

| CELL TYPE | CAPACITY C5 | WIDTH mm | WEIGHT with acid |
|-----------|-------------|----------|------------------|
| 2 PzV 110 | 110 | 47 | 9,3 |
| 3 PzV 165 | 165 | 65 | 12,7 |
| 4 PzV 220 | 220 | 83 | 16,5 |
| 5 PzV 275 | 275 | 101 | 20,1 |
| 6 PzV 330 | 330 | 119 | 23,8 |
| 7 PzV 385 | 385 | 137 | 27,4 |

100Ah/plate

h1 = 563, h2 = 573 mm | length = b = 198 mm

| CELL TYPE | CAPACITY C5 | WIDTH mm | WEIGHT with acid |
|-----------|-------------|----------|------------------|
| 2 PzV 200 | 200 | 47 | 14,7 |
| 3 PzV 300 | 300 | 65 | 21,6 |
| 4 PzV 400 | 400 | 83 | 27,8 |
| 5 PzV 500 | 500 | 101 | 34,3 |
| 6 PzV 600 | 600 | 119 | 40,6 |

70Ah/plate

h1 = 402, h2 = 412 mm | length = b = 198 mm

| CELL TYPE | CAPACITY C5 | WIDTH mm | WEIGHT with acid |
|-----------|-------------|----------|------------------|
| 2 PzV 140 | 140 | 47 | 10,8 |
| 3 PzV 210 | 210 | 65 | 15,5 |
| 4 PzV 280 | 280 | 83 | 19,7 |
| 5 PzV 350 | 350 | 101 | 24,2 |
| 6 PzV 420 | 420 | 119 | 29,1 |

120Ah/plate

h1 = 720, h2 = 730 mm | length = b = 198 mm

| CELL TYPE | CAPACITY C5 | WIDTH mm | WEIGHT with acid |
|-----------|-------------|----------|------------------|
| 2 PzV 240 | 240 | 47 | 19,7 |
| 3 PzV 360 | 360 | 65 | 27,4 |
| 4 PzV 480 | 480 | 83 | 35,3 |
| 5 PzV 600 | 600 | 101 | 42,1 |
| 6 PzV 720 | 720 | 119 | 50,0 |

80Ah/plate

h1 = 472, h2 = 482 mm | length = b = 198 mm

| CELL TYPE | CAPACITY C5 | WIDTH mm | WEIGHT with acid |
|-----------|-------------|----------|------------------|
| 2 PzV 160 | 160 | 47 | 12,7 |
| 3 PzV 240 | 240 | 65 | 18,1 |
| 4 PzV 320 | 320 | 83 | 23,6 |
| 5 PzV 400 | 400 | 101 | 29,0 |
| 6 PzV 480 | 480 | 119 | 35,0 |

PzVB STANDARD

61Ah/plate

h1 = 472, h2 = 486 mm | length = b = 157,5 mm

| CELL TYPE | CAPACITY C5 | WIDTH mm | WEIGHT with acid |
|------------|-------------|----------|------------------|
| 2 PzVB 122 | 122 | 45 | 9,7 |
| 3 PzVB 183 | 183 | 61 | 13,5 |
| 4 PzVB 244 | 244 | 77 | 16,9 |

71Ah/plate

h1 = 516, h2 = 530 mm | length = b = 157,5 mm

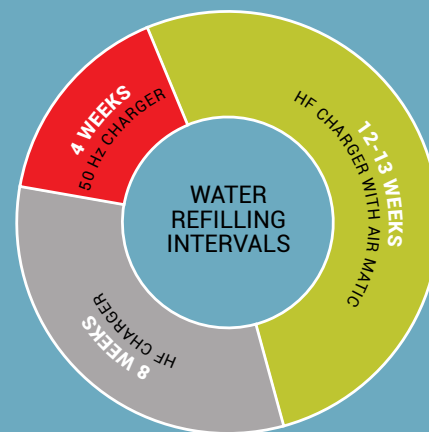
| CELL TYPE | CAPACITY C5 | WIDTH mm | WEIGHT with acid |
|------------|-------------|----------|------------------|
| 2 PzVB 142 | 142 | 45 | 10,6 |
| 3 PzVB 213 | 213 | 61 | 14,8 |
| 4 PzVB 284 | 284 | 77 | 18,5 |

85Ah/plate

h1 = 611, h2 = 625 mm | length = b = 157,5 mm

| CELL TYPE | CAPACITY C5 | WIDTH mm | WEIGHT with acid |
|------------|-------------|----------|------------------|
| 2 PzVB 170 | 170 | 45 | 11,8 |
| 3 PzVB 255 | 255 | 61 | 16,1 |
| 4 PzVB 340 | 340 | 77 | 20,7 |

TOPLA AQUALESS TRACTION PzRM BATTERIES



| TOPLA AQUALESS | AQUA 1 | AQUA 2 | AQUA 3 |
|------------------------------|----------|-----------|----------------|
| Refilling Interval in weeks | 4 | 8 | 12-13 |
| Charger | 50 Hz | HF | HF + Air Matic |
| Charging Factor | 1.2 | 1.10-1.11 | 1.07-1.08 |
| Electrolyte Level indicator | SERIAL | SERIAL | SERIAL |
| Central Water Filling System | OPTIONAL | OPTIONAL | OPTIONAL |
| Air Matic | OPTIONAL | OPTIONAL | SERIAL |

Condition: water refilling intervals are based on 80% DOD - 1 cycle per day; 5 days per week

Main advantages

- WATER REFILL INTERVAL IS EFFICIENTLY PROLONGED
- REDUCED WATER CONSUMPTION
- LOW MAINTENANCE AND REDUCED OPERATIONAL COSTS
- REDUCED CHARGING FACTOR
- 50 TO 80% REDUCED GAS RELEASE
- AND VENTILATION REQUIREMENTS
- 20 TO 30% LESS CHARGING TIME
- COST SAVING DUE TO LOWER ENERGY CONSUMPTION FROM 10-20%
- REDUCED OPERATING TEMPERATURES



Water refill interval is efficiently prolonged.

80Ah/plate

h1 = 402, h2 = 425 mm | length = b = 198 mm

| CELL TYPE | CAPACITY C5 | WIDTH mm | WEIGHT kg |
|-------------|-------------|----------|-----------|
| 2 PzRM 160 | 160 | 47 | 10,2 |
| 3 PzRM 240 | 240 | 65 | 14,5 |
| 4 PzRM 320 | 320 | 83 | 18,7 |
| 5 PzRM 400 | 400 | 101 | 22,9 |
| 6 PzRM 480 | 480 | 119 | 27,1 |
| 7 PzRM 560 | 560 | 137 | 31,3 |
| 8 PzRM 640 | 640 | 155 | 35,5 |
| 9 PzRM 720 | 720 | 173 | 39,7 |
| 10 PzRM 800 | 800 | 191 | 43,9 |
| 12 PzRM 960 | 960 | 227 | 52,6 |

90Ah/plate

h1 = 472, h2 = 495 mm | length = b = 198 mm

| CELL TYPE | CAPACITY C5 | WIDTH mm | WEIGHT kg |
|--------------|-------------|----------|-----------|
| 2 PzRM 180 | 180 | 47 | 11,6 |
| 3 PzRM 270 | 270 | 65 | 16,6 |
| 4 PzRM 360 | 360 | 83 | 21,4 |
| 5 PzRM 450 | 450 | 101 | 26,2 |
| 6 PzRM 540 | 540 | 119 | 31,0 |
| 7 PzRM 630 | 630 | 137 | 35,8 |
| 8 PzRM 720 | 720 | 155 | 40,6 |
| 9 PzRM 810 | 810 | 173 | 45,4 |
| 10 PzRM 900 | 900 | 191 | 50,2 |
| 12 PzRM 1080 | 1080 | 227 | 60,1 |

105Ah/plate

h1 = 515, h2 = 538 mm | length = b = 198 mm

| CELL TYPE | CAPACITY C5 | WIDTH mm | WEIGHT kg |
|--------------|-------------|----------|-----------|
| 2 PzRM 210 | 210 | 47 | 13,3 |
| 3 PzRM 315 | 315 | 65 | 18,3 |
| 4 PzRM 420 | 420 | 83 | 23,7 |
| 5 PzRM 525 | 525 | 101 | 29,1 |
| 6 PzRM 630 | 630 | 119 | 34,5 |
| 7 PzRM 735 | 735 | 137 | 39,9 |
| 8 PzRM 840 | 840 | 155 | 45,3 |
| 9 PzRM 945 | 945 | 173 | 50,7 |
| 10 PzRM 1050 | 1050 | 191 | 56,4 |
| 12 PzRM 1260 | 1260 | 227 | 67,2 |

115Ah/plate

h1 = 545, h2 = 568 mm | length = b = 198 mm

| CELL TYPE | CAPACITY C5 | WIDTH mm | WEIGHT kg |
|--------------|-------------|----------|-----------|
| 2 PzRM 230 | 230 | 47 | 14 |
| 3 PzRM 345 | 345 | 65 | 19,5 |
| 4 PzRM 460 | 460 | 83 | 25 |
| 5 PzRM 575 | 575 | 101 | 30,6 |
| 6 PzRM 690 | 690 | 119 | 36,2 |
| 7 PzRM 805 | 805 | 137 | 41,8 |
| 8 PzRM 920 | 920 | 155 | 47,4 |
| 9 PzRM 1035 | 1035 | 173 | 53,2 |
| 10 PzRM 1150 | 1150 | 191 | 58,9 |
| 12 PzRM 1380 | 1380 | 227 | 70,1 |

125Ah/plate

h1 = 570, h2 = 593 mm | length = b = 198 mm

| CELL TYPE | CAPACITY C5 | WIDTH mm | WEIGHT kg |
|--------------|-------------|----------|-----------|
| 2 PzRM 250 | 250 | 47 | 14,5 |
| 3 PzRM 375 | 375 | 65 | 20,5 |
| 4 PzRM 500 | 500 | 83 | 26,5 |
| 5 PzRM 625 | 625 | 101 | 32,5 |
| 6 PzRM 750 | 750 | 119 | 38,5 |
| 7 PzRM 875 | 875 | 137 | 44,5 |
| 8 PzRM 1000 | 1000 | 155 | 50,5 |
| 9 PzRM 1125 | 1125 | 173 | 56,8 |
| 10 PzRM 1250 | 1250 | 191 | 62,8 |
| 12 PzRM 1500 | 1500 | 227 | 74,8 |

140Ah/plate

h1 = 686, h2 = 709 mm | length = b = 198 mm

| CELL TYPE | CAPACITY C5 | WIDTH mm | WEIGHT kg |
|--------------|-------------|----------|-----------|
| 2 PzRM 280 | 280 | 47 | 18,5 |
| 3 PzRM 420 | 420 | 65 | 25,3 |
| 4 PzRM 560 | 560 | 83 | 32,2 |
| 5 PzRM 700 | 700 | 101 | 39,5 |
| 6 PzRM 840 | 840 | 119 | 46,7 |
| 7 PzRM 980 | 980 | 137 | 54,0 |
| 8 PzRM 1120 | 1120 | 155 | 61,2 |
| 9 PzRM 1260 | 1260 | 173 | 68,8 |
| 10 PzRM 1400 | 1400 | 191 | 76,0 |
| 12 PzRM 1680 | 1680 | 227 | 90,5 |

155Ah/plate

h1 = 720, h2 = 743 mm | length = b = 198 mm

| CELL TYPE | CAPACITY C5 | WIDTH mm | WEIGHT kg |
|--------------|-------------|----------|-----------|
| 2 PzRM 310 | 310 | 47 | 18,8 |
| 3 PzRM 465 | 465 | 65 | 26,1 |
| 4 PzRM 620 | 620 | 83 | 33,5 |
| 5 PzRM 775 | 775 | 101 | 41,1 |
| 6 PzRM 930 | 930 | 119 | 48,9 |
| 7 PzRM 1085 | 1085 | 137 | 56,7 |
| 8 PzRM 1240 | 1240 | 155 | 64,5 |
| 9 PzRM 1395 | 1395 | 173 | 72,8 |
| 10 PzRM 1550 | 1550 | 191 | 80,6 |
| 12 PzRM 1860 | 1860 | 227 | 96,2 |

- water refilling interval up to 13 weeks (at normal duty applications with 80% DOD C5, 1 cycle per day; 5 days per week, Electrolyte T=30°C)
- for these batteries proper chargers must be used
- cells are equipped with Electrolyte Mixing system
- batteries are assembled with Central Water Filling system
- each battery has an Electrolyte Level Sensor
With its red light it gives signal to the user when water refilling is needed

With proven PzS technology using tubular plates in combination with an adjusted charging regime results in extended watering intervals. TOPLA PzRM cells are manufactured and tested according to EN60254-1 and IEC254-1.

Battery application.

Traction batteries Topla of type PzS and PzB are according to EN 60254-1,2 and IEC 254-1,2 and are appropriated for propulsion of different electrical machines (forklifts, mine locomotives, etc.).

One of the very important production part of your company is internal logistics. We are introducing our traction batteries Topla which have been satisfying the most demanding users for more than half a century. **Batteries are known by their: high capacity, long life-time, resistance to vibrations, short charging times, low consumption of distilled water, simple maintenance.**

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AQUAMATIC



AIR MATIC



LEVEL CHECK



MONITORING SYSTEM



We highly recommend the use of additional systems:

- **CENTRAL WATER FILLING SYSTEM (AQUAMATIC):**
Each cell is equipped with aquamatic plug, combined with tubes and water drums. At the same time enables central water filling for whole the battery. Enables quick and precise service of whole battery under any working conditions.
- **ELECTROLYTE MIXING SYSTEM (AIRMATIC)**
which allows faster charging of battery. Each cell is equipped with special airmixing tube. Tubes are combined together with PVC tubes and connected trough connector to air compressor. Air compressor is already built in charger or can be installed additionally into ordinary charger with charging principle IU; WoWa. Air consumption per hour is 60 litres/cell by operational pressure 0,2 Bars. System is operating all the time during the charging. System allows an electric vehicle to be in operation for 16 hours without changing the battery.
- **CAPACITIVE BATTERY ELECTROLYTE LEVEL SENSOR**
which with clearly visible greenlight indicates electrolyte at proper specified level. Flashing red light indicates that the electrolyte level is bellow minimum and battery needs to be refilled with demineralised water to avoid permanent damage of the battery.
- **BATTERY MONITORING SYSTEM**
allows you to see real time status of your batteries. Our battery monitoring system is able to provide:
 - full statistical analysis of battery's performance (capacity, load levels, charging and discharging characteristics);
 - breakdown of each machine's performance (when and how it was used, when it was charged, etc.);
 - real time information and alerts via email or phone.