



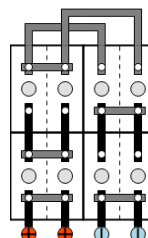
# MB415P - Cell data sheet

## Classification

|                          |           |
|--------------------------|-----------|
| Brand                    | Alcad     |
| Cell type                | MB415P    |
| Cell P/N                 | 310099581 |
| Capacity at 5 hours rate | 415 Ah    |
| IEC Designation          | KM415P    |
| According to IEC 60623   |           |



Wiring principle



Crosswise

## Physical data

|                |        |                 |         |
|----------------|--------|-----------------|---------|
| Overall height | 410 mm |                 |         |
| Cell height    | 400 mm |                 |         |
| Width          | 195 mm | Weight per cell | 23,7 Kg |
| Length         | 183 mm |                 |         |

## Construction

|                    |                 |                           |       |
|--------------------|-----------------|---------------------------|-------|
| Container material | Polypropylene   | No. of terminals/polarity | 2     |
| Separator type     | Grid            | Terminal material         | Steel |
| Connection torque  | 30,0 +/- 3,0 Nm | Vent type                 |       |
| Terminal size      | M10 SW 16 mm    |                           |       |
|                    |                 | Handle                    | Yes   |

## Plates

|                |        |                |        |
|----------------|--------|----------------|--------|
| Positive       |        | Negative       |        |
| Type of plates | Pocket | Type of plates | Pocket |

## Electrolyte

|                              |            |                   |       |
|------------------------------|------------|-------------------|-------|
| Electrolyte type: Renewal    | E13        | Max/Min           | 50 mm |
| Electrolyte type: Initial    | E22        | Vent oil quantity |       |
| Electrolyte per cell: Liquid | 6,4 liters |                   |       |

## Connection

|  |                     |                              |                     |
|--|---------------------|------------------------------|---------------------|
| Cable area of internal connection cables | 120 mm <sup>2</sup> | End-lug (and external cable) | 120 mm <sup>2</sup> |
|--|---------------------|------------------------------|---------------------|



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## Charging

|                      |             |                         |             |
|----------------------|-------------|-------------------------|-------------|
| Float voltage        | 1,4 V/Cell  | High rate voltage (min) | 1,45 V/Cell |
| Single-level voltage | 1,43 V/Cell |                         |             |

## Resistance/Short circuit

|                     |           |                       |        |
|---------------------|-----------|-----------------------|--------|
| Internal resistance | 0,21 mOhm | Short circuit current | 6520 A |
|---------------------|-----------|-----------------------|--------|

## Performance data

### Current discharge

After prolonged float charge of fully charged cells. Available amperes at +20°C +/- 5°C (+68°F +/- 9°F)

| V/Cell | 10h  | 8h   | 5h   | 3h  | 2h  | 1,5h | 1h  | 30m | 20m | 15m | 10m | 5m  | 1m    | 30s   | 5s    | 1s    |
|--------|------|------|------|-----|-----|------|-----|-----|-----|-----|-----|-----|-------|-------|-------|-------|
| 1      | 42,2 | 52,2 | 83,0 | 136 | 198 | 247  | 348 | 473 | 549 | 593 | 677 | 797 | 1.075 | 1.200 | 1.433 | 1.516 |
| 1,05   | 41,9 | 51,9 | 82,2 | 134 | 186 | 238  | 314 | 401 | 473 | 515 | 563 | 653 | 913   | 1.027 | 1.210 | 1.303 |
| 1,1    | 41,1 | 51,1 | 80,8 | 125 | 174 | 210  | 256 | 319 | 388 | 404 | 461 | 553 | 771   | 859   | 1.014 | 1.077 |
| 1,14   | 40,0 | 49,6 | 78,2 | 118 | 152 | 175  | 206 | 250 | 287 | 311 | 356 | 445 | 621   | 689   | 796   | 820   |
| 1,16   | 38,9 | 47,7 | 72,0 | 109 | 128 | 138  | 171 | 214 | 245 | 256 | 286 | 355 | 521   | 580   | 653   | 695   |

### Power discharge

Available power (W), after prolonged float charged of fully charged cells at +20°C +/- 5°C (+68°F +/- 9°F)

| V/Cell | 10h  | 8h   | 5h   | 3h  | 2h  | 1,5h | 1h  | 30m | 20m | 15m | 10m | 5m  | 1m    | 30s   | 5s    | 1s    |
|--------|------|------|------|-----|-----|------|-----|-----|-----|-----|-----|-----|-------|-------|-------|-------|
| 1      | 50,3 | 61,8 | 96,9 | 152 | 211 | 259  | 359 | 480 | 553 | 597 | 679 | 797 | 1.075 | 1.200 | 1.433 | 1.516 |
| 1,05   | 50,0 | 61,4 | 96,4 | 150 | 204 | 258  | 337 | 425 | 499 | 543 | 593 | 686 | 959   | 1.078 | 1.271 | 1.368 |
| 1,1    | 49,1 | 60,7 | 95,0 | 144 | 196 | 236  | 285 | 353 | 429 | 445 | 508 | 608 | 848   | 945   | 1.116 | 1.185 |
| 1,14   | 47,8 | 59,0 | 92,2 | 137 | 176 | 202  | 236 | 286 | 327 | 354 | 406 | 507 | 709   | 785   | 908   | 936   |
| 1,16   | 46,5 | 56,8 | 85,0 | 128 | 149 | 161  | 199 | 249 | 285 | 297 | 332 | 412 | 605   | 673   | 758   | 806   |

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## Kt Factor

### Current discharge

After prolonged float charge of fully charged cells. Kt factor at +20°C +/- 5°C (+68°F +/- 9°F)

| V/Cell | 10h  | 8h   | 5h   | 3h   | 2h   | 1,5h | 1h   | 30m  | 20m  | 15m  | 10m  | 5m   | 1m   | 30s  | 5s   | 1s   |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1      | 9,8  | 7,94 | 5,00 | 3,06 | 2,09 | 1,68 | 1,19 | 0,88 | 0,76 | 0,70 | 0,61 | 0,52 | 0,39 | 0,35 | 0,29 | 0,27 |
| 1,05   | 9,9  | 8,00 | 5,05 | 3,09 | 2,23 | 1,74 | 1,32 | 1,03 | 0,88 | 0,81 | 0,74 | 0,64 | 0,45 | 0,40 | 0,34 | 0,32 |
| 1,1    | 10,1 | 8,12 | 5,14 | 3,31 | 2,39 | 1,98 | 1,62 | 1,30 | 1,07 | 1,03 | 0,90 | 0,75 | 0,54 | 0,48 | 0,41 | 0,39 |
| 1,14   | 10,4 | 8,36 | 5,31 | 3,52 | 2,73 | 2,37 | 2,02 | 1,66 | 1,45 | 1,34 | 1,16 | 0,93 | 0,67 | 0,60 | 0,52 | 0,51 |
| 1,16   | 10,7 | 8,70 | 5,77 | 3,80 | 3,25 | 3,00 | 2,42 | 1,94 | 1,69 | 1,62 | 1,45 | 1,17 | 0,80 | 0,71 | 0,64 | 0,60 |

### Power discharge

Kt factor power, after prolonged float charged of fully charged cells at +20°C +/- 5°C (+68°F +/- 9°F)

| V/Cell | 10h  | 8h   | 5h   | 3h   | 2h   | 1,5h | 1h   | 30m  | 20m  | 15m  | 10m  | 5m   | 1m   | 30s  | 5s   | 1s   |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1      | 8,24 | 6,72 | 4,28 | 2,74 | 1,96 | 1,60 | 1,16 | 0,86 | 0,75 | 0,70 | 0,61 | 0,52 | 0,39 | 0,35 | 0,29 | 0,27 |
| 1,05   | 8,31 | 6,75 | 4,31 | 2,76 | 2,03 | 1,61 | 1,23 | 0,98 | 0,83 | 0,76 | 0,70 | 0,61 | 0,43 | 0,38 | 0,33 | 0,30 |
| 1,1    | 8,45 | 6,84 | 4,37 | 2,89 | 2,11 | 1,76 | 1,46 | 1,17 | 0,97 | 0,93 | 0,82 | 0,68 | 0,49 | 0,44 | 0,37 | 0,35 |
| 1,14   | 8,68 | 7,03 | 4,50 | 3,03 | 2,36 | 2,06 | 1,76 | 1,45 | 1,27 | 1,17 | 1,02 | 0,82 | 0,59 | 0,53 | 0,46 | 0,44 |
| 1,16   | 8,92 | 7,31 | 4,88 | 3,24 | 2,78 | 2,57 | 2,08 | 1,67 | 1,46 | 1,40 | 1,25 | 1,01 | 0,69 | 0,62 | 0,55 | 0,52 |