



Datasheet



12CP98

Compact-Power Rackline™



preliminary

Technical specifications

Type

12CP98

Part number

7630 0098


Electrical Data

Nominal voltage	12 V	
Number of cells	6	
Rated capacity C ₁₀ to 1.80 Vpc at 20 °C	98 Ah	
Rated capacity C ₈ to 1.75 Vpc at 25 °C	98 Ah	
Current/Power for 0.5 h back-up time 1.67 Vpc 20 °C	126.8 A	1478.4W
Current/Power for 1.0 h back-up time 1.67 Vpc 20 °C	73.9 A	810 W
Current/Power for 2.0 h back-up time 1.80 Vpc 20 °C	39.4 A	469.8 W
Current/Power for 4.0 h back-up time 1.80 Vpc 20 °C	22.1 A	264 W
Current/Power for 8.0 h back-up time 1.80 Vpc 20 °C	11.7 A	143.4 W
Current/Power for 10.0 h back-up time 1.80 Vpc 20 °C	9.8 A	117 W
Current/Power for 20.0 h back-up time 1.80 Vpc 20 °C	5.2 A	61.8 W
Conversion to capacity at 25 °C (77 °F)	20 °C Ah x 1,03 (t > 1 h)	
Internal resistance (± 10%) to IEC/EN 60896-21	≈ 4.1 mΩ	
Short circuit current (± 10%) to IEC/EN 60896-21	≈ 1.6 kA	
Self discharge at 20 °C to IEC/EN 60896-21	max. 3%/month	
Heat loss during float service	≈ 0.61 W	

Mechanical Data

Weight ready for use	≈ 34.5 kg	
Height of monobloc	278 mm	
Height over gas collection system GCS™	287 mm	
Height over terminal connector	314 mm	
Width	105 mm	
Depth	394 mm	
Number of terminals	1⊕/1⊖	
Dimension of connector screw hole	term.: M8	
Suggested/maximum cable cross-section	70 mm ²	
Connection torque	6 Nm	
Terminal insulation class according to IEC/EN 60529	IP20	
Diameter of diagnostic hole for voltage probe	5 mm Ø	
Connector (copper, tin-coated) rigid and insulated	40 mm ²	
Complete connector and terminal connection accessories	available (as 48 V/60 V-Set)	

Environmental Data

Shelves, cabinets and racks	available upon request	
Installation	vertically/horizontally	
Distance for cooling and ventilation (preset with the rigid connectors)	9 mm	
Flame retardancy rating case/cover according to Underwriters Laboratories (UL) USA	ABS-PC – UL 94 V-0 with LOI > 32%, halogen-free	
Flame barriers at vents	installed	
Gas collection system GCS™ UL V-0 quality	available upon request	
UL file number 	MH 26065	
Service life expected at 20 °C	15 years	

Operating specifications

Figure 1



Figure 2

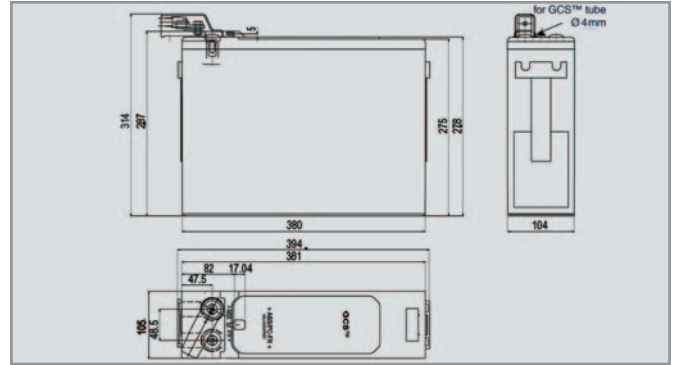
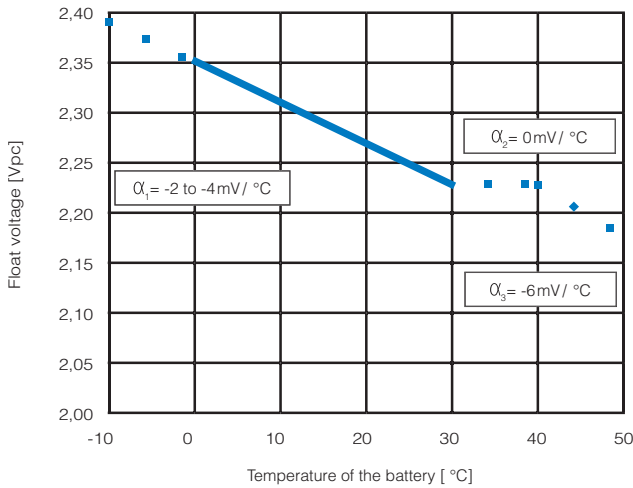


Figure 3



Temperature in °C	Temperature in °F	Percent of the rated capacity
40	104	104.8
35	95	104.2
30	86	103.6
25	77	103.0
20	68	100.0
15	59	97.0
10	50	94.0
5	41	90.0
0	32	84.7
-5	23	77.7
-10	14	69.4
-15	5	60.0
-20	-4	49.6
-25	-13	38.4
-30	-22	25.6
-35	-31	14.1
-40	-40	2.1

Battery installation and operation

Float voltage setting according to DIN 41773

Float voltage with daily discharge cycles

CC-CV charge current according to DIN 41773

Float voltage compensation in function of temperature

Boost charge

Stand-by mode with constant voltage float operation according to EN 50272-2:2001

2.27 Vpc at 20 to 25 °C (68 to 77 °F)

2.29 Vpc - 2.30 Vpc (no correction factor needed)

unlimited, otherwise $3 \cdot I_{10}$ max. if $T > 25$ °C

-2 to -4 mV/°C or with profile as displayed figure 3

Not needed, if desirable then 2.35 Vpc and I_{10} max. for 24 h max. at $t < 30$ °C

Air exchange

As a VRLA battery according to EN 50272-2:2001

$$Q = 0.05 \cdot N_{\text{cells}} \cdot I_{\text{gas}} \cdot C_{\text{Ah}} \cdot 10^{-3} \text{ [m}^3\text{/h]}$$

$$I_{\text{gas}} = 1 \text{ (at 2.27 Vpc)} \quad I_{\text{gas}} = 8 \text{ (at 2.40 Vpc)}$$

$$\text{e.g. 48 V: } 0.1176 \text{ m}^3\text{/h} = 4.15 \text{ cu.ft/h (at 2.27 Vpc)}$$

Preferred operating temperature range

Between 15 °C (68 °F) and 25 °C (77 °F)

Maximum long term operating temperature

+40 °C (104 °F) with ventilation assured (reduced service life)

Maximum short term operating temperature (for hours)

+50 °C (122 °F) with ventilation assured (reduced service life)

Minimum fully charged operating temperature

-40 °C (-40 °F)



Discharge data

Constant current performance (in Amps) to the defined end-of-discharge voltages													
Voltage [Vpc]	Temp	Discharge time [Minutes]											
		15	30	45	60	120	180	240	300	480	600	1200	1440
1.90	20 °C	137.2	94.0	73.2	60.8	36.4	26.7	21.1	17.5	11.3	9.5	5.0	4.1
	25 °C	143.8	98.0	75.2	62.8	37.5	27.5	21.8	18.0	11.6	9.8	5.2	4.1
1.85	20 °C	162.7	105.2	79.6	64.8	38.1	27.5	21.7	17.9	11.6	9.7	5.1	4.1
	25 °C	170.8	110.5	83.6	68.0	39.2	28.3	22.4	18.4	11.9	10.0	5.3	4.3
1.80	20 °C	175.5	111.7	83.9	67.8	39.4	28.2	22.1	18.2	11.7	9.8	5.2	4.1
	25 °C	184.3	117.3	88.1	71.2	40.6	29.0	22.8	18.7	12.1	10.1	5.4	4.3
1.75	20 °C	187.2	117.7	87.7	70.5	40.5	28.8	22.4	18.4	11.9	9.9	5.2	4.1
	25 °C	196.6	123.6	92.1	74.0	41.7	29.7	23.1	19.0	12.3	10.2	5.4	4.2
1.70	20 °C	197.4	122.8	90.8	72.7	41.4	29.3	22.7	18.7	12.0	10.0	5.2	4.1
	25 °C	207.3	128.9	95.3	76.3	42.6	30.2	23.4	19.3	12.4	10.3	5.4	4.2
1.67	20 °C	202.7	125.3	92.5	73.9	41.8	29.5	22.9	18.8	12.0	10.0	5.3	4.1
	25 °C	212.8	131.6	97.1	77.6	43.1	30.4	23.6	19.4	12.4	10.3	5.5	4.1
1.65	20 °C	205.8	126.8	93.4	74.5	42.0	29.7	23.0	18.8	12.0	10.0	5.3	4.1
	25 °C	216.1	133.1	98.1	78.2	43.3	30.6	23.7	19.4	12.4	10.3	5.5	4.3
1.63	20 °C	210.1	129.3	94.3	75.5	42.2	29.8	23.0	18.9	12.0	10.0	5.3	4.1
	25 °C	220.6	135.8	99.0	79.3	44.3	31.3	24.2	19.8	12.6	10.5	5.6	4.3
1.60	20 °C	212.3	129.8	95.2	75.8	42.5	29.9	23.1	19.0	12.0	10.1	5.3	4.2
	25 °C	222.9	136.3	100.0	79.6	43.8	30.8	23.8	19.6	12.4	10.4	5.5	4.3

Constant current performance (in watt per cell) to the defined end-of-discharge voltages													
Voltage [Vpc]	Temp	Discharge time [Minutes]											
		15	30	45	60	120	180	240	300	480	600	1200	1440
1.90	20 °C	239.1	190.2	159.3	114.9	73.1	53.0	42.2	34.9	23.1	18.9	10.1	8.3
	25 °C	250.4	199.3	169.1	121.9	75.4	54.6	43.5	36.0	23.8	19.5	10.4	8.4
1.85	20 °C	279.0	211.0	175.0	124.0	76.2	54.8	43.2	35.6	23.6	19.3	10.2	8.2
	25 °C	293.0	221.6	183.8	130.2	78.5	56.4	44.5	36.7	24.3	19.9	10.5	8.4
1.80	20 °C	297.9	225.0	164.5	128.6	78.3	56.1	44.0	36.2	23.9	19.5	10.3	8.3
	25 °C	312.8	236.3	172.7	135.0	80.7	57.8	45.3	37.3	24.6	20.1	10.6	8.6
1.75	20 °C	319.5	235.4	172.0	132.5	80.2	57.1	44.6	38.7	24.2	19.7	10.4	8.5
	25 °C	335.5	247.2	180.6	139.1	82.6	58.8	45.9	39.9	24.9	20.3	10.7	8.7
1.70	20 °C	333.0	242.7	173.0	135.0	81.7	58.0	45.2	37.1	24.4	19.9	10.4	8.6
	25 °C	349.7	254.8	181.7	141.8	84.2	59.7	46.6	38.2	25.1	20.5	10.7	8.8
1.67	20 °C	345.0	245.1	173.3	135.0	82.5	58.4	45.4	37.3	24.5	19.9	10.5	8.7
	25 °C	362.3	257.4	182.0	141.8	85.0	60.2	46.8	38.4	25.2	20.5	10.8	8.8
1.65	20 °C	349.2	246.4	175.5	136.3	82.9	58.7	45.6	37.4	24.5	20.0	10.5	8.6
	25 °C	366.7	258.7	184.3	143.1	85.4	60.5	47.0	38.5	25.2	20.6	10.8	8.9
1.63	20 °C	352.2	247.6	176.6	136.3	83.4	58.9	45.7	37.5	24.5	20.0	10.5	8.6
	25 °C	369.8	260.0	185.5	143.1	87.6	61.9	48.0	39.4	25.7	21.0	11.0	8.9
1.60	20 °C	355.2	248.8	177.7	136.3	83.7	59.1	45.9	37.6	24.6	20.0	10.5	8.6
	25 °C	373.0	261.2	186.6	143.1	86.2	60.9	47.3	38.7	25.3	20.6	10.8	8.9