

Datasheet



12CP105


Compact-Power Rackline™



Technical specifications

Type

12CP105

Part number	6630 0105	
Electrical Data		
Nominal voltage	12 V	
Number of cells	6	
Rated capacity C ₁₀ to 1.80 Vpc at 20 °C	105 Ah	
Rated capacity C ₈ to 1.75 Vpc at 25 °C	106.4 Ah	
Current/Power for 0.5 h back-up time 1.65 Vpc 20 °C	131 A	1464 W
Current/Power for 1.0 h back-up time 1.67 Vpc 20 °C	75.3 A	900 W
Current/Power for 2.0 h back-up time 1.80 Vpc 20 °C	41.1 A	518.4 W
Current/Power for 4.0 h back-up time 1.80 Vpc 20 °C	23.1 A	297.6 W
Current/Power for 8.0 h back-up time 1.80 Vpc 20 °C	12.8 A	157.8 W
Current/Power for 10.0 h back-up time 1.80 Vpc 20 °C	10.5 A	126.6 W
Current/Power for 20.0 h back-up time 1.80 Vpc 20 °C	5.8 A	63.6 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	5.4 mΩ	
Short circuit current (± 10%) to IEC/EN 60896-21	2.3 kA	
Self discharge at 20 °C to IEC/EN 60896-21	max. 3%/month	
Heat loss during float service	≈ 0.64 W	
Mechanical Data		
Weight ready for use	40.1 kg	
Height of monobloc	230 mm	
Height over gas collection system GCS™	245 mm	
Height over terminal connector (standard)	258 mm	
Width	125 mm	
Depth	558 mm	
Number of terminals	1⊕/1⊖	
Dimension of connector screw hole	M8	
Suggested 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	2.5/5 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)	10 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

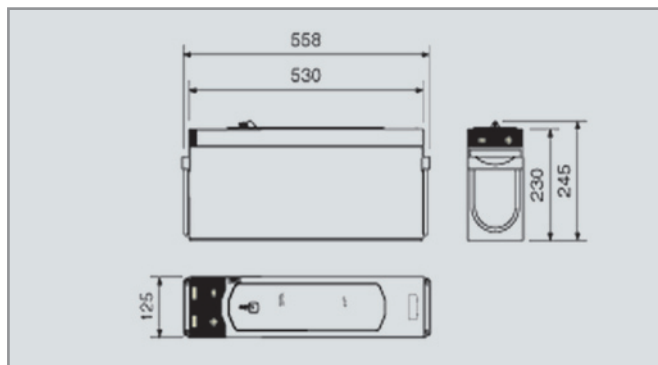
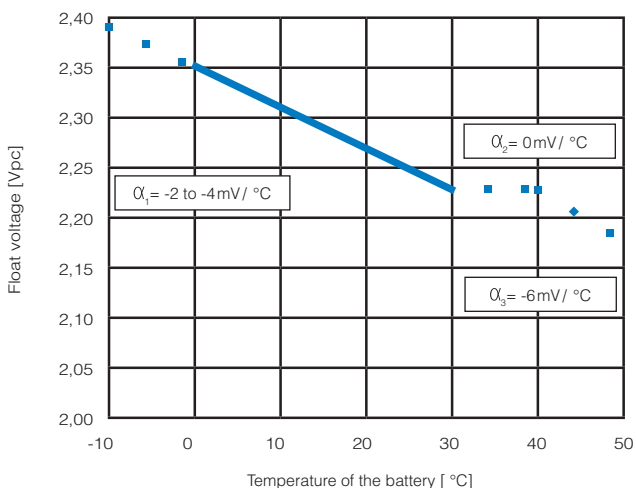


Figure 3



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

$$Q = 0.05 \cdot N_{\text{cells}} \cdot I_{\text{gas}} \cdot C_{\text{Ah C10}} \cdot 10^{-3} \text{ [m}^3\text{/h]}$$

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

e.g. 48 V: 0.126 m³/h = 4.44 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 voltage																								
voltage [Vpc]	Temp	Discharge time [Minutes]																						
		1-2	3	5	7	10	15	20	25	30	40	50	60	90	120	180	240	300	360	480	600	720	1200	1440
1.90	20 °C	221	210	193	179	160	136	120	107	97	82	71	63	47	38.2	27.9	22.1	18.5	15.9	12.4	10.3	8.9	5.8	4.9
	25 °C	232	221	203	188	168	143	126	112	102	86	75	66	49	39.3	28.7	22.8	19.1	16.4	12.8	10.6	9.2	6.0	5.0
1.87	20 °C	266	251	227	206	181	152	132	116	104	87	75	66	49	39.3	28.4	22.5	18.8	16.1	12.6	10.4	9.0	5.8	5.0
	25 °C	279	264	238	216	190	160	139	122	109	92	79	69	51	40.5	29.3	23.2	19.4	16.6	13.0	10.7	9.3	6.0	5.2
1.85	20 °C	296	278	249	225	196	161	139	122	109	90	77	68	50	39.9	28.8	22.7	18.9	16.1	12.7	10.4	9.0	5.8	5.0
	25 °C	311	292	261	236	206	169	146	128	114	95	81	71	52	41.1	29.7	23.4	19.5	16.6	13.1	10.7	9.3	6.0	5.2
1.84	20 °C	312	292	259	233	202	167	142	124	111	92	78	69	50	40.2	29.0	22.7	18.9	16.3	12.7	10.4	9.0	5.8	5.0
	25 °C	328	307	272	245	212	175	149	130	117	96	82	72	52	41.4	29.9	23.4	19.5	16.8	13.1	10.7	9.3	6.0	5.2
1.83	20 °C	327	305	270	241	208	171	145	127	113	93	79	69	51	40.5	29.1	22.9	18.9	16.3	12.7	10.4	9.0	5.8	5.0
	25 °C	343	320	284	253	218	180	152	133	119	97	83	73	52	41.7	30.0	23.6	19.5	16.8	13.1	10.7	9.3	6.0	5.2
1.82	20 °C	342	318	280	249	214	175	148	129	114	94	80	70	51	40.7	29.2	23.0	19.0	16.3	12.8	10.5	9.0	5.8	5.0
	25 °C	359	334	294	261	225	184	155	135	120	99	84	74	53	41.9	30.1	23.7	19.6	16.8	13.2	10.8	9.3	6.0	5.2
1.80	20 °C	371	343	300	265	225	182	153	133	118	96	82	71	52	41.1	29.4	23.1	19.1	16.4	12.8	10.5	9.0	5.8	5.0
	25 °C	390	360	315	278	236	191	161	140	124	101	86	75	53	42.3	30.3	23.8	19.7	16.9	13.2	10.8	9.3	6.0	5.2
1.77	20 °C	412	378	326	285	240	191	160	138	121	99	83	73	53	41.5	29.6	23.2	19.2	16.4	12.8	10.5	9.1	5.9	5.0
	25 °C	433	397	342	299	252	201	168	145	127	104	88	76	54	42.7	30.5	23.9	19.8	16.9	13.2	10.8	9.4	6.1	5.2
1.75	20 °C	438	399	342	297	248	197	164	141	124	100	84	73	53	41.8	29.7	23.3	19.2	16.5	12.9	10.5	9.1	5.9	5.0
	25 °C	460	419	359	312	260	207	172	148	130	105	89	77	54	43.1	30.6	24.0	19.8	17.0	13.3	10.8	9.4	6.1	5.2
1.72	20 °C	473	428	362	312	259	204	168	144	126	102	86	74	53	42.1	29.9	23.4	19.3	16.5	12.9	10.6	9.1	5.8	5.0
	25 °C	497	449	380	328	272	214	176	151	132	107	90	78	55	43.4	30.8	24.1	19.9	17.0	13.3	10.9	9.4	6.0	5.2
1.70	20 °C	495	446	375	322	266	207	171	146	128	103	86	75	54	42.2	30.0	23.4	19.3	16.5	12.9	10.6	9.1	5.9	5.0
	25 °C	520	468	394	338	279	217	180	153	134	108	91	78	55	43.5	30.9	24.1	19.9	17.0	13.3	10.9	9.4	6.1	5.2
1.67	20 °C	524	470	392	334	274	212	174	148	130	104	87	75	54	42.4	30.1	23.5	19.4	16.6	12.9	10.7	9.1	5.9	5.0
	25 °C	550	494	412	351	288	223	183	155	137	109	92	79	56	43.7	31.0	24.2	20.0	17.1	13.3	11.0	9.4	6.1	5.2
1.65	20 °C	542	484	402	341	279	215	176	150	131	105	88	76	54	42.6	30.1	23.5	19.4	16.6	12.9	10.7	9.1	5.9	5.0
	25 °C	569	508	422	358	293	226	185	158	138	110	92	79	56	43.9	31.0	24.2	20.0	17.1	13.3	11.0	9.4	6.1	5.2
1.63	20 °C	558	497	411	348	283	218	178	151	132	105	88	76	54	42.6	30.2	23.6	19.4	16.6	12.9	10.7	9.1	5.9	5.0
	25 °C	586	522	432	365	297	229	187	159	139	110	93	80	56	43.9	31.1	24.3	20.0	17.1	13.3	11.0	9.4	6.1	5.2
1.60	20 °C	580	514	422	356	289	221	180	153	133	106	89	76	55	42.8	30.2	23.6	19.5	16.6	12.9	10.7	9.1	5.9	5.0
	25 °C	609	540	443	374	303	232	189	161	140	111	93	80	56	44.1	31.1	24.3	20.1	17.1	13.3	11.0	9.4	6.1	5.2

Constant power performance (in watt per cell) to the defined end-of-discharge voltage																								
voltage [Vpc]	Temp	Discharge time [Minutes]																						
		1-2	3	5	7	10	15	20	25	30	40	50	60	90	120	180	240	300	360	480	600	720	1200	1440
1.90	20 °C	435	413	379	348	311	265	232	208	189	161	141	127	98	80.5	59.8	47.5	39.3	33.5	25.7	20.7	17.3	10.5	8.8
	25 °C	457	434	398	365	327	278	244	218	198	169	148	133	101	82.9	61.6	48.9	40.5	34.5	26.5	21.3	17.8	10.8	9.1
1.87	20 °C	518	488	441	400	351	293	254	225	203	171	149	133	102	83.0	61.1	48.5	39.9	33.9	25.9	20.9	17.4	10.6	8.9
	25 °C	544	512	463	420	369	308	267	236	213	180	156	140	105	85.5	62.9	50.0	41.1	34.9	26.7	21.5	17.9	10.9	9.2
1.85	20 °C	573	537	481	432	376	311	267	235	211	177	154	136	104	84.3	61.9	48.9	40.3	34.1	26.1	20.9	17.5	10.6	8.9
	25 °C	602	564	505	454	395	327	280	247	222	186	162	143	107	86.8	63.8	50.4	41.5	35.1	26.9	21.5	18.0	10.9	9.2
1.84	20 °C	600	560	499	448	387	318	272	239	215	179	155	138	104	84.7	62.1	49.1	40.4	34.3	26.1	20.9	17.5	10.6	8.9
	25 °C	630	588	524	470	406	334	286	251	226	188	163	145	107	87.2	64.0	50.6	41.6	35.3	26.9	21.5	18.0	10.9	9.2
1.83	20 °C	626	583	518	462	398	325	278	243	218	182	157	139	105	85.3	62.5	49.3	40.4	34.3	26.1	21.1	17.5	10.6	8.9
	25 °C	657	612	544	485	418	341	292	255	229	191	165	146	108	87.9	64.4	50.8	41.6	35.3	26.9	21.7	18.0	10.9	9.2
1.82	20 °C	651	604	534	475	408	332	282	247	221	184	159	140	106	85.7	62.7	49.3	40.6	34.3	26.3	21.1	17.6	10.6	8.9
	25 °C	684	634	561	499	428	349	296	259	232	193	167	147	109	88.3	64.6	50.8	41.8	35.3	27.1	21.7	18.1	10.9	9.2
1.80	20 °C	697	644	565	499	425	343	291	253	226	187	161	142	107	86.4	63.1	49.6	40.8	34.5	26.3	21.1	17.6	10.6	8.9
	25 °C	732	676	593	524	446	360	306	266	237	196	169	149	110	89.0	65.0	51.1	42.0	35.5	27.1	21.7	18.1	10.9	9.2
1.77	20 °C	756	693	603	529	446	357	300	261	232	191	164	145	108	87.4	63.4	49.8	41.0	34.7	26.3	21.1	17.6	10.6	8.9
	25 °C	794	728	633	555	468	375	315	274	244	201	172	152	111	90.0	65.3	51.3	42.2	35.7	27.1	21.7	18.1	10.9	9.2
1.75	20 °C	787	720	623	544	457	364	305	265	235	193	166	146	109	87.8	63.6	50.0	41.0	34.7	26.3	21.1	17.6	10.6	8.9
	25 °C	826	756	654	571	480	382	320	278	247	203	174	153	112	90.4	65.5	51.5	42.2	35.7	27.1	21.7	18.1	10.9	9.2
1.72	20 °C	827	753	647	563	470	372	311	269	238	196	167	147	110	88.2	64.0	50.2	41.2	34.7	26.5	21.3	17.7	10.6	8.9
	25 °C	868	791	679	591	494	391	327	282	250	206	175	154	113	90.8	65.9	51.7	42.4	35.7	27.3	21.9	18.2	10.9	9.2
1.70	20 °C	850	772	661	573	478	375	314	271	240	197	168	148	110	88.6	64.0	50.2	41.2	34.9	26.5	21.3	17.7	10.6	8.9
	25 °C	893	811	694	602	502	394	330	285	252	207	176	155	113	91.3	65.9	51.7	42.4	35.9	27.3	21.9	18.2	10.9	9.2
1.67	20 °C	881	798	680	587	487	376	316	272	241	199	171	150	116	88.7	64.2	50.4	41.2	34.9	26.5	21.3	17.7	10.7	8.9
	25 °C	925	838	714	616	511	395	332	286	253	209	180	158	119	91.4	66.1	51.9	42.4	35.9	27.3	21.9	18.2	11.0	9.2
1.65	20 °C	902	815	692	596	494	387	321	276	244	199	170	149	111	88.9	64.4	50.4	41.4	34.9	26.5	21.3	17.7	10.7	8.9
	25 °C	947	856	727	626	519	406	337	290															