oerlikon batteries

Datasheet

6CP115

Compact-Power Blockline™

Technical specifications

Type	6CP115	
Part number	63020115	
Electrical Data		
Nominal voltage	6 V	
Number of cells	3	
Rated capacity C_{10} to 1.80 Vpc at 20 °C	115 Ah	
Rated capacity C_8 to 1.75 Vpc at 25 °C	115 Ah	
Current/Power for 0.5 h back-up time 1.65 Vpc 20 °C	146 A	804 W
Current/Power for 1.0 h back-up time 1.67 Vpc 20 °C	83.6 A	468 W
Current/Power for 2.0 h back-up time 1.80 Vpc 20 °C	45.2 A	260.1 W
Current/Power for 4.0 h back-up time 1.80 Vpc 20 °C	25.2 A	146.1 W
Current/Power for 8.0 h back-up time 1.80 Vpc 20 °C	13.9 A	80.1 W
Current/Power for 10.0 h back-up time 1.80 Vpc 20 °C	11.5 A	66 W
Current/Power for 20.0 h back-up time 1.80 Vpc 20 °C	6.3 A	35.1 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	2.0 mΩ	
Short circuit current (± 10%) to IEC/EN 60896-21	3.0 kA	
Self discharge at 20 °C to IEC/EN 60896-21	max. 3%/month	
Heat loss during float service at 20 °C	≈ 0.35 W	
Mechanical Data		
Weight ready for use	32.6 kg	
Height of monobloc	283 mm	
Height over terminal connector	298 mm	
Width	177 mm	
Depth	282 mm	
Number of terminals	1⊕/1⊖	
Dimension of connector screw hole	M8	
Suggested/maximum cable cross-section	70 mm²/185 mm² *)	
Connection torque	11 Nm	
Terminal insulation class according to IEC/EN 60529	IP20	
Diameter of diagnostic hole for voltage probe	2 mm Ø	
Connector (copper, tin-coated) rigid and insulated	90 mm²	
Complete connector and terminal connection accessoires	available	
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 – UL 94 HB (std.) ABS-PC – UL 94 V-0 with LOI > 32%, halogen-free	
Flame barriers at vents	installed	
UL file number	MH 26065	
Service life expected at 20 °C	15 years	

*) for UPS duties the connecting cables must be dimensioned specially

Operating specifications

Figure 1

Figure 2

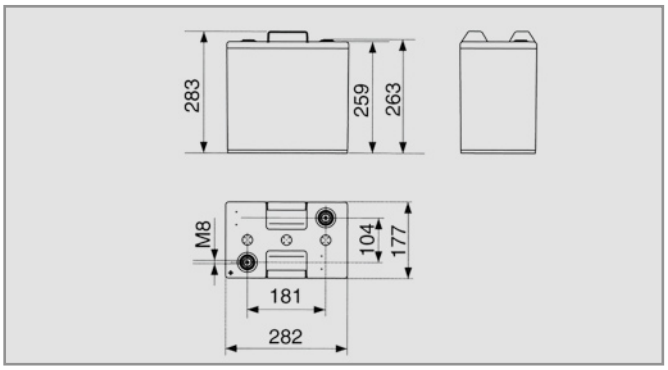
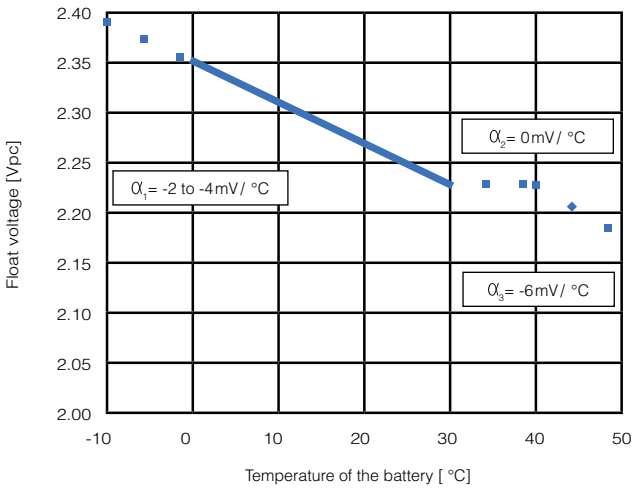


Figure 3



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	Stand-by mode with constant voltage float operation according to EN 50272-2:2001
Float voltage setting according to DIN 41773	2.25 Vpc ± 1% at 20 to 25 °C (68 to 77 °F)
Float voltage with daily discharge cycles	2.29 Vpc - 2.30 Vpc (no correction factor needed)
CC-CV charge current according to DIN 41773	unlimited, otherwise 3 · I_{10} max. if T > 25 °C
Float voltage compensation in function of temperature	-2 to -4 mV/°C or with profile as displayed figure 3
Boost charge	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 $Q=0.05 \cdot N_{cells} \cdot I_{gas} \cdot C_{Ah\,C10} \cdot 10^{-3}$ [m³/h] I_{gas}= 1 (at 2.25 Vpc) I_{gas} = 8 (at 2.40 Vpc) e.g. 48 V: 0.138 m³/h = 4.87 cu.ft/h (at 2.25 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	242	231	213	197	177	151	133	119	107	90.5	78.5	69.5	52.1	42.0	30.5	24.2	20.1	17.3	13.6	11.3	9.7	6.3	5.4
	25 °C	249	238	219	203	182	156	137	123	110	93.2	80.9	71.6	53.7	43.3	31.4	24.9	20.7	17.8	14.0	11.6	10.0	6.5	5.6
1.87	20 °C	294	278	252	230	203	170	147	130	116	96.9	83.3	73.2	54.2	43.3	31.2	24.6	20.4	17.5	13.7	11.4	9.7	6.3	5.4
	25 °C	303	286	260	237	209	175	151	134	119	100	85.8	75.4	55.8	44.6	32.1	25.3	21.0	18.0	14.1	11.7	10.0	6.5	5.6
1.85	20 °C	329	310	278	251	219	182	155	136	122	101	86.0	75.3	55.3	44.0	31.6	24.8	20.6	17.6	13.8	11.4	9.8	6.3	5.4
	25 °C	339	319	286	259	226	187	160	140	126	104	88.6	77.6	57.0	45.3	32.5	25.5	21.2	18.1	14.2	11.7	10.1	6.5	5.6
1.84	20 °C	347	325	291	261	227	187	159	139	124	102	87.1	76.1	55.7	44.3	31.7	24.9	20.7	17.7	13.8	11.4	9.8	6.3	5.4
	25 °C	357	335	300	269	234	193	164	143	128	105	89.7	78.4	57.4	45.6	32.7	25.6	21.3	18.2	14.2	11.7	10.1	6.5	5.6
1.83	20 °C	364	341	303	271	234	192	163	142	126	104	88.2	77.0	56.2	44.6	31.9	25.0	20.7	17.7	13.9	11.4	9.8	6.3	5.4
	25 °C	375	351	312	279	241	198	168	146	130	107	90.8	79.3	57.9	45.9	32.9	25.8	21.3	18.2	14.3	11.7	10.1	6.5	5.6
1.82	20 °C	382	356	315	281	241	196	166	145	128	105	89.2	77.7	56.6	44.8	32.0	25.1	20.8	17.8	13.9	11.5	9.8	6.3	5.4
	25 °C	393	366	324	289	249	202	171	149	132	108	91.8	80.0	58.3	46.2	33.0	25.9	21.4	18.3	14.3	11.8	10.1	6.5	5.6
1.80	20 °C	415	384	337	298	254	205	172	149	132	107	90.9	79.0	57.3	45.2	32.2	25.2	20.9	17.8	13.9	11.5	9.8	6.3	5.4
	25 °C	428	396	347	307	262	211	177	154	136	111	93.6	81.4	59.0	46.6	33.2	26.0	21.5	18.4	14.3	11.8	10.1	6.5	5.6
1.77	20 °C	461	424	367	321	271	216	180	155	136	110	92.9	80.5	58.1	45.7	32.5	25.4	21.0	17.9	14.0	11.5	9.8	6.4	5.4
	25 °C	475	437	378	331	279	222	185	159	140	113	95.7	83.0	59.8	47.1	33.5	26.2	21.6	18.5	14.4	11.9	10.1	6.5	5.6
1.75	20 °C	490	448	385	335	280	222	184	158	138	112	94.0	81.4	58.5	46.0	32.6	25.5	21.0	18.0	14.0	11.5	9.9	6.4	5.4
	25 °C	505	461	396	345	289	228	190	163	143	115	96.8	83.8	60.2	47.4	33.6	26.2	21.6	18.5	14.4	11.9	10.2	6.5	5.6
1.72	20 °C	529	480	408	353	293	229	189	162	141	114	95.0	82.0	59.0	46.3	32.8	25.6	21.1	18.0	14.0	11.6	9.9	6.4	5.4
	25 °C	545	494	420	364	302	236	195	167	145	117	97.9	84.5	60.8	47.7	33.8	26.4	21.7	18.5	14.4	11.9	10.2	6.6	5.6
1.70	20 °C	553	500	423	363	300	234	192	164	143	115	96.1	82.9	59.3	46.5	32.9	25.6	21.1	18.0	14.0	11.6	9.9	6.4	5.4
	25 °C	570	515	435	374	309	241	198	169	147	118	99.0	85.4	61.1	47.9	33.8	26.4	21.8	18.6	14.5	11.9	10.2	6.6	5.6
1.67	20 °C	586	527	442	377	310	239	196	167	145	116	97.1	83.6	59.7	46.7	33.0	25.7	21.2	18.1	14.1	11.6	9.9	6.4	5.4
	25 °C	604	543	455	389	319	247	202	172	150	120	100	86.2	61.4	48.1	34.0	26.5	21.8	18.6	14.5	11.9	10.2	6.6	5.6
1.65	20 °C	606	543	453	386	315	243	198	168	146	117	97.6	84.0	59.9	46.8	33.0	25.7	21.2	18.1	14.1	11.6	9.9	6.4	5.5
	25 °C	625	559	467	397	325	250	204	173	151	120	101	86.6	61.7	48.3	34.0	26.5	21.8	18.6	14.5	11.9	10.2	6.6	5.6
1.63	20 °C	625	558	463	393	320	246	200	170	147	118	98.1	84.4	60.0	47.0	33.1	25.8	21.2	18.1	14.1	11.6	9.9	6.4	5.5
	25 °C	644	575	477	405	330	253	206	175	152	121	101	86.9	61.8	48.4	34.1	26.5	21.9	18.6	14.5	11.9	10.2	6.6	5.6
1.60	20 °C	650	578	477	403	326	249	203	171	149	118	98.7	84.8	60.3	47.1	33.2	25.8	21.2	18.1	14.1	11.6	9.9	6.4	5.5
	25 °C	669	595	491	415	336	257	209	177	153	122	102	87.4	62.1	48.5	34.1	26.6	21.9	18.7	14.5	12.0	10.2	6.6	5.6

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	467	445	410	378	338	289	253	225	204	172	150	133	100	80.7	59.0	47.0	39.0	33.3	26.0	21.7	18.3	11.7	9.7
	25 °C	481	458	422	389	348	297	260	232	210	178	154	137	103	83.1	60.8	48.4	40.2	34.3	26.8	22.3	18.9	12.0	10.0
1.87	20 °C	559	528	479	436	384	321	277	245	220	183	158	139	104	83.3	60.3	47.7	39.7	34.0	26.3	21.7	18.3	11.7	9.7
	25 °C	576	544	493	449	395	331	286	252	227	189	163	144	107	85.8	62.1	49.1	40.9	35.0	27.1	22.3	18.9	12.0	10.0
1.85	20 °C	620	582	523	472	412	341	292	256	229	189	163	143	106	84.3	61.0	48.0	39.7	34.0	26.7	21.7	18.3	11.7	9.7
	25 °C	639	599	539	486	424	351	300	264	236	195	168	147	109	86.9	62.8	49.4	40.9	35.0	27.5	22.3	18.9	12.0	10.0
1.84	20 °C	650	608	544	489	425	349	298	261	233	192	164	144	106	85.0	61.2	48.2	39.9	34.1	26.6	21.8	18.5	11.6	9.8
	25 °C	669	627	560	504	437	360	307	269	240	198	169	149	110	87.5	63.1	49.7	41.1	35.2	27.4	22.5	19.1	12.0	10.1
1.83	20 °C	679	634	564	505	437	358	304	265	236	195	166	146	107	85.4	61.5	48.4	40.0	34.2	26.6	21.8	18.5	11.6	9.8
	25 °C	699	653	581	521	450	368	313	273	243	200	171	150	110	88.0	63.3	49.8	41.2	35.2	27.4	22.5	19.1	12.0	10.1
1.82	20 °C	707	658	584	521	448	365	310	270	240	197	168	147	108	86.0	61.7	48.7	40.0	34.3	26.7	22.0	18.7	11.7	9.7
	25 °C	728	678	601	536	462	376	319	278	247	203	173	151	111	88.6	63.5	50.1	41.2	35.4	27.5	22.7	19.2	12.0	10.0
1.80	20 °C	760	704	619	549	469	379	319	277	245	201	171	149	109	86.7	62.0	48.7	40.3	34.3	26.7	22.0	18.7	11.7	9.7
	25 °C	783	725	638	565	483	390	329	285	253	207	176	153	112	89.3	63.9	50.1	41.5	35.4	27.5	22.7	19.2	12.0	10.0
1.77	20 °C	831	764	666	585	495	396	331	286	252	205	174	152	110	87.3	62.7	49.0	40.3	34.7	26.7	22.0	18.7	11.7	10.0
	25 °C	856	787	686	603	510	408	341	295	260	211	179	156	114	90.0	64.5	50.5	41.5	35.7	27.5	22.7	19.2	12.0	10.3
1.75	20 °C	873	800	692	606	510	405	338	291	256	208	176	153	111	88.0	62.7	49.0	40.7	34.7	27.0	22.0	18.7	11.7	10.0
	25 °C	899	824	713	624	525	417	348	299	264	214	181	158	114	90.6	64.5	50.5	41.9	35.7	27.8	22.7	19.2	12.0	10.3
1.72	20 °C	928	845	726	631	528	416	346	297	261	211	178	154	112	88.3	63.0	49.3	40.7	34.7	27.0	22.0	18.7	11.7	10.0
	25 °C	955	871	748	650	543	429	356	306	268	217	183	159	115	91.0	64.9	50.8	41.9	35.7	27.8	22.7	19.2	12.0	10.3
1.70	20 °C	960	872	745	646	538	423	350	300	263	212	179	155	112	88.7	63.0	49.3	40.7	34.7	27.0	22.0	18.7	11.7	10.0
	25 °C	988	898	768	665	554	435	361	309	271	219	184	160	116	91.3	64.9	50.8	41.9	35.7	27.8	22.7	19.2	12.0	10.3
1.67	20 °C	1001	906	770	665	551	430	355	304	266	214	181	156	113	89.0	63.3	49.7	40.7	34.7	27.0	22.0	18.7	11.7	10.0
	25 °C	1031	933	793	685	567	443	366	313	274	221	186	161	116	91.7	65.2	51.2	41.9	35.7	27.8	22.7	19.2	12.0	10.3
1.65	20 °C	1024	925	784	675	558	435	358	306	268	215	181	157	113	89.3	63.3	49.7	40.7	34.7	27.0	22.0	18.7	11.7	10.0
	25 °C	1055	952	808	695	574	448	369	315	276	222	187	162	116	92.0	65.2	51.2	41.9	35.7	27.8	22.7	19.2	12.0	10.3
1.63	20 °C	1044	941	795	683	564	438	361	308	269	216	182	157	113	89.3	63.3	49.7	41.0	34.7	27.0	22.0	18.7	11.7	10.0
	25 °C	1076	969	819	704	581	451	371	317	277	223	187	162	117	92.0	65.2	51.2	42.2	35.7	27.8	22.7	19.2	12.0	10.3
1.60	20 °C	1069	961	810	694	571	442	363	310	271	217	183	158	114	89.7	63.7	49.7	41.0	35.0	27.0	22.0	18.7	11.7	10.0
	25 °C	1101	989	834	714	588	456	374	319	279	224	188	163	117	92.4	65.6	51.2	42.2	36.1	27.8	22.7	19.2	12.0	10.3