



# 6CP60

## Compact-Power Blockline™



# Technical specifications

## Type

## 6CP60

Part number

63010060


### Electrical Data

Nominal voltage	6 V	
Number of cells	3	
Rated capacity C <sub>10</sub> to 1.80 Vpc at 20 °C	60 Ah	
Rated capacity C <sub>8</sub> to 1.75 Vpc at 25 °C	60 Ah	
Current/Power for 0.5 h back-up time 1.65 Vpc 20 °C	74.1 A	405 W
Current/Power for 1.0 h back-up time 1.67 Vpc 20 °C	42.7 A	239.1 W
Current/Power for 2.0 h back-up time 1.80 Vpc 20 °C	23.3 A	134.1 W
Current/Power for 4.0 h back-up time 1.80 Vpc 20 °C	13.1 A	75.9 W
Current/Power for 8.0 h back-up time 1.80 Vpc 20 °C	7.2 A	42 W
Current/Power for 10.0 h back-up time 1.80 Vpc 20 °C	6.0 A	35.1 W
Current/Power for 20.0 h back-up time 1.80 Vpc 20 °C	3.3 A	18.9 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	3.4 mΩ	
Short circuit current (± 10%) to IEC/EN 60896-21	1.8 kA	
Self discharge at 20 °C to IEC/EN 60896-21	max. 3%/month	
Heat loss during float service at 20 °C	≈ 0.18 W	

### Mechanical Data

Weight ready for use	19.2 kg	
Height of monobloc	283 mm	
Height over terminal connector	298 mm	
Width	177 mm	
Depth	205 mm	
Number of terminals	1⊕/1⊖	
Dimension of connector screw hole	M8	
Suggested/maximum cable cross-section	70 mm <sup>2</sup> /185 mm <sup>2</sup> *)	
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 mm <sup>2</sup>	
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

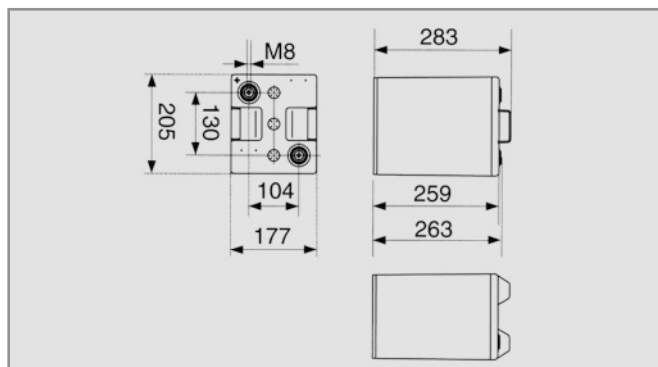
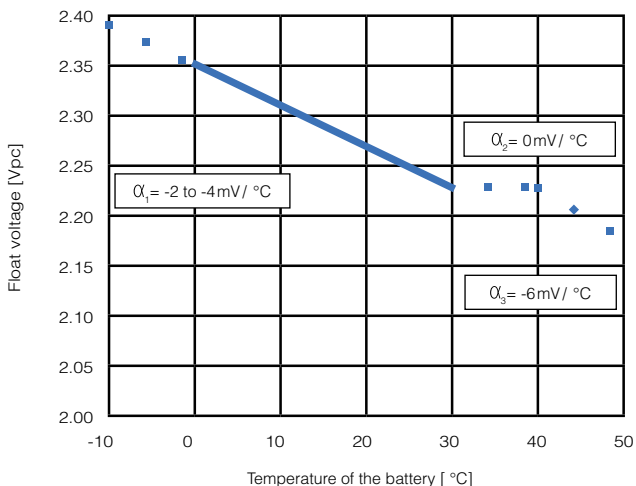


Figure 3



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

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

Air exchange

Preferred operating temperature range

Maximum long term operating temperature

Maximum short term operating temperature (for hours)

Minimum fully charged operating temperature

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

2.25 Vpc ± 1% at 20 to 25 °C (68 to 77 °F)

2.29 Vpc - 2.30 Vpc (no correction factor needed)

unlimited, otherwise 3 · I<sub>10</sub> 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<sub>10</sub> max. for 24 h max. at t < 30 °C

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

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

I<sub>gas</sub> = 1 (at 2.25 Vpc) I<sub>gas</sub> = 8 (at 2.40 Vpc)

e.g. 48 V: 0.072 m<sup>3</sup>/h = 2.54 cu.ft/h (at 2.25 Vpc)

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

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

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

-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	125	120	110	101	90.6	77.4	67.9	60.6	54.9	46.4	40.3	35.7	26.8	21.7	15.8	12.5	10.5	9.0	7.1	5.9	5.0	3.3	2.8
	25 °C	129	124	113	104	93.3	79.7	69.9	62.4	56.5	47.8	41.5	36.8	27.6	22.4	16.3	12.9	10.8	9.3	7.3	6.1	5.2	3.4	2.9
1.87	20 °C	151	142	129	117	103	86.4	74.7	66.0	59.3	49.4	42.6	37.5	27.8	22.3	16.1	12.8	10.6	9.1	7.1	5.9	5.1	3.3	2.8
	25 °C	156	146	133	121	106	89.0	76.9	68.0	61.1	50.9	43.9	38.6	28.6	23.0	16.6	13.2	10.9	9.4	7.3	6.1	5.3	3.4	2.9
1.85	20 °C	168	158	141	127	111	91.8	78.7	69.1	61.8	51.2	43.8	38.5	28.4	22.7	16.3	12.9	10.7	9.2	7.2	5.9	5.1	3.3	2.8
	25 °C	173	163	145	131	114	94.6	81.1	71.2	63.7	52.7	45.1	39.7	29.3	23.4	16.8	13.3	11.0	9.5	7.4	6.1	5.3	3.4	2.9
1.84	20 °C	177	165	147	132	115	94.3	80.6	70.5	62.9	51.9	44.4	38.9	28.6	22.8	16.4	12.9	10.7	9.2	7.2	5.9	5.1	3.3	2.8
	25 °C	182	170	151	136	118	97.1	83.0	72.6	64.8	53.5	45.7	40.1	29.5	23.5	16.9	13.3	11.0	9.5	7.4	6.1	5.3	3.4	2.9
1.83	20 °C	185	173	153	137	118	96.7	82.3	71.9	64.0	52.7	44.9	39.3	28.8	22.9	16.5	13.0	10.7	9.2	7.2	6.0	5.1	3.3	2.8
	25 °C	191	178	158	141	122	100	84.8	74.1	65.9	54.3	46.2	40.5	29.7	23.6	17.0	13.4	11.0	9.5	7.4	6.2	5.3	3.4	2.9
1.82	20 °C	194	180	159	141	122	99.0	83.9	73.1	64.9	53.3	45.4	39.7	29.0	23.1	16.5	13.0	10.8	9.2	7.2	6.0	5.1	3.3	2.8
	25 °C	200	186	164	146	125	102	86.5	75.3	66.9	54.9	46.8	40.9	29.9	23.8	17.0	13.4	11.1	9.5	7.4	6.1	5.3	3.4	2.9
1.80	20 °C	210	195	170	150	128	103	86.9	75.4	66.7	54.5	46.3	40.3	29.4	23.3	16.7	13.1	10.8	9.3	7.2	6.0	5.1	3.3	2.8
	25 °C	217	200	175	155	132	106	89.5	77.6	68.7	56.1	47.7	41.5	30.3	24.0	17.2	13.5	11.1	9.5	7.5	6.2	5.3	3.4	2.9
1.77	20 °C	234	214	185	162	136	108	90.6	78.2	68.9	56.0	47.3	41.1	29.8	23.5	16.8	13.2	10.9	9.3	7.3	6.0	5.1	3.3	2.8
	25 °C	241	221	190	166	140	112	93.4	80.5	71.0	57.6	48.7	42.4	30.7	24.3	17.3	13.6	11.2	9.6	7.5	6.2	5.3	3.4	2.9
1.75	20 °C	248	226	194	168	141	111	92.7	79.7	70.1	56.7	47.9	41.5	30.0	23.7	16.9	13.2	10.9	9.3	7.3	6.0	5.1	3.3	2.8
	25 °C	256	233	200	173	145	115	95.5	82.1	72.2	58.4	49.3	42.8	30.9	24.4	17.4	13.6	11.2	9.6	7.5	6.2	5.3	3.4	2.9
1.72	20 °C	268	243	206	177	147	115	95.0	82.0	72.0	58.0	49.0	42.0	30.3	23.9	16.9	13.3	10.9	9.4	7.3	6.0	5.1	3.3	2.8
	25 °C	276	250	212	182	151	118	97.9	84.5	74.2	59.7	50.5	43.3	31.2	24.6	17.4	13.7	11.2	9.7	7.5	6.2	5.3	3.4	2.9
1.70	20 °C	281	253	213	183	151	118	96.9	82.8	72.4	58.3	49.0	42.4	30.4	24.0	17.0	13.3	11.0	9.4	7.3	6.0	5.1	3.3	2.8
	25 °C	289	261	219	188	155	121	100	85.3	74.6	60.0	50.4	43.6	31.4	24.7	17.5	13.7	11.3	9.6	7.5	6.2	5.3	3.4	2.9
1.67	20 °C	297	267	222	190	155	120	98.8	84.2	73.5	59.0	49.5	42.7	30.6	24.1	17.1	13.3	11.0	9.4	7.3	6.0	5.2	3.3	2.8
	25 °C	306	275	229	195	160	124	102	86.7	75.7	60.7	50.9	44.0	31.5	24.8	17.6	13.7	11.3	9.7	7.5	6.2	5.3	3.4	2.9
1.65	20 °C	307	275	228	194	158	122	100	85.0	74.1	59.4	49.7	42.9	30.7	24.1	17.1	13.3	11.0	9.4	7.3	6.0	5.2	3.3	2.8
	25 °C	317	283	235	199	163	126	103	87.5	76.3	61.1	51.2	44.2	31.7	24.9	17.6	13.7	11.3	9.7	7.5	6.2	5.3	3.4	2.9
1.63	20 °C	316	282	233	197	161	123	101	85.6	74.6	59.7	50.0	43.1	30.8	24.2	17.1	13.4	11.0	9.4	7.3	6.0	5.2	3.3	2.8
	25 °C	326	290	240	203	165	127	104	88.2	76.9	61.5	51.5	44.4	31.7	24.9	17.6	13.8	11.3	9.7	7.5	6.2	5.3	3.4	2.9
1.60	20 °C	329	292	239	202	164	125	102	86.5	75.3	60.1	50.3	43.3	30.9	24.3	17.1	13.4	11.0	9.4	7.3	6.0	5.2	3.3	2.8
	25 °C	339	300	247	208	169	129	105	89.1	77.6	61.9	51.8	44.6	31.9	25.0	17.7	13.8	11.4	9.7	7.6	6.2	5.3	3.4	2.9

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	242	230	211	194	173	148	129	115	104	88.0	76.7	68.0	51.7	41.7	30.7	24.3	20.3	17.7	13.7	11.3	9.7	6.3	5.3
	25 °C	250	237	218	200	179	152	133	119	107	90.6	79.0	70.0	53.2	42.9	31.6	25.1	20.9	18.2	14.1	11.7	10.0	6.5	5.5
1.87	20 °C	287	270	244	222	195	163	141	124	112	93.3	80.7	71.3	53.3	43.0	31.3	25.0	20.7	17.7	14.0	11.3	9.7	6.3	5.3
	25 °C	296	278	252	229	201	168	145	128	115	96.1	83.1	73.5	54.9	44.3	32.3	25.8	21.3	18.2	14.4	11.7	10.0	6.5	5.5
1.85	20 °C	317	297	266	239	208	172	148	130	116	96.3	83.0	73.0	54.3	43.7	31.7	25.0	21.0	18.0	14.0	11.7	9.7	6.3	5.3
	25 °C	326	306	274	247	215	178	152	134	119	99.2	85.5	75.2	56.0	45.0	32.6	25.8	21.6	18.5	14.4	12.0	10.0	6.5	5.5
1.84	20 °C	331	309	276	247	214	176	151	132	118	97.7	83.8	73.7	54.7	43.9	31.8	25.2	20.9	17.9	14.0	11.6	9.8	6.2	5.3
	25 °C	341	319	284	255	221	182	155	136	121	101	86.3	75.9	56.3	45.2	32.8	25.9	21.5	18.5	14.4	11.9	10.1	6.4	5.4
1.83	20 °C	345	322	285	255	220	180	154	134	120	98.9	84.7	74.4	55.0	44.1	31.9	25.3	21.0	18.0	14.0	11.6	9.9	6.2	5.3
	25 °C	356	331	294	263	227	186	158	138	123	102	87.2	76.6	56.7	45.4	32.9	26.0	21.6	18.5	14.5	11.9	10.1	6.4	5.4
1.82	20 °C	359	334	295	263	226	184	156	136	121	100	85.7	75.0	55.3	44.3	32.0	25.3	21.0	18.0	14.0	11.7	10.0	6.3	5.3
	25 °C	370	344	304	271	232	190	161	140	125	103	88.2	77.3	57.0	45.7	33.0	26.1	21.6	18.5	14.4	12.0	10.3	6.5	5.5
1.80	20 °C	385	356	312	276	236	191	161	140	124	102	87.0	76.0	56.0	44.7	32.3	25.3	21.0	18.0	14.0	11.7	10.0	6.3	5.3
	25 °C	397	367	322	285	243	196	166	144	128	105	89.6	78.3	57.7	46.0	33.3	26.1	21.6	18.5	14.4	12.0	10.3	6.5	5.5
1.77	20 °C	421	386	335	294	249	199	167	144	128	104	88.7	77.3	56.7	45.0	32.3	25.7	21.3	18.0	14.0	11.7	10.0	6.3	5.3
	25 °C	433	398	345	303	256	205	172	149	131	107	91.3	79.7	58.4	46.4	33.3	26.4	22.0	18.5	14.4	12.0	10.3	6.5	5.5
1.75	20 °C	442	404	348	304	256	204	170	147	129	105	89.7	78.0	57.0	45.3	32.7	25.7	21.3	18.3	14.3	11.7	10.0	6.3	5.3
	25 °C	455	416	359	313	264	210	175	151	133	108	92.4	80.3	58.7	46.7	33.6	26.4	22.0	18.9	14.8	12.0	10.3	6.5	5.5
1.72	20 °C	470	427	366	317	265	209	174	150	132	107	90.7	79.0	57.3	45.7	32.7	25.7	21.3	18.3	14.3	11.7	10.0	6.3	5.3
	25 °C	484	440	377	327	273	216	179	154	136	110	93.8	81.4	59.1	47.0	33.6	26.4	22.0	18.9	14.8	12.0	10.3	6.5	5.5
1.70	20 °C	486	441	375	325	270	212	176	151	133	108	91.3	79.3	57.7	45.7	32.7	25.7	21.3	18.3	14.3	11.7	10.0	6.3	5.3
	25 °C	500	454	387	334	278	219	182	156	137	111	94.1	81.7	59.4	47.0	33.6	26.4	22.0	18.9	14.8	12.0	10.3	6.5	5.5
1.67	20 °C	507	458	388	334	277	216	179	153	135	109	92.0	79.7	58.0	46.0	33.0	26.0	21.3	18.3	14.3				