

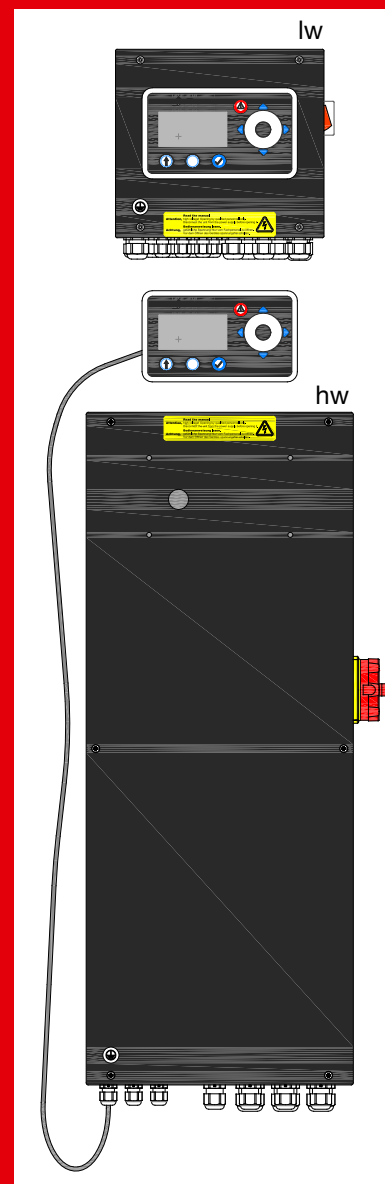


Flamco



Flamcomat, Flexcon M/K Installation and operating instructions supplementary document

ENG SPC RS485, Data protocol



This document is an addition to the manuals:
 Flamcomat: Doc.- Nr.: MC00018/02-2011/eng
 Flexcon M-K: Doc.- Nr.: MC00019/01-2011/eng.
 The installation, data processing and commissioning by qualified personnel (IT). The valid national standards and rules have to be considered.



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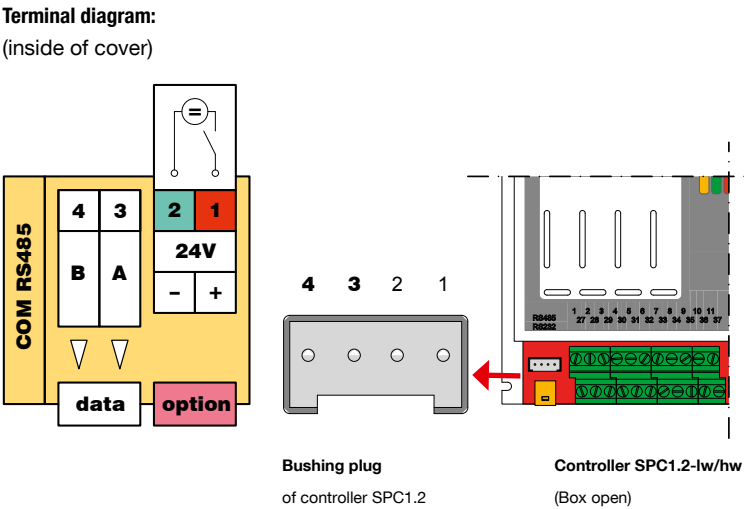
Byte (Index)	Description	Dimension (Byte)	Unit
0	Start byte 1	1	<0x05>
1	Start byte 2	1	<0x64>
2	Identifier target / consignor	1	<0xF0>
3	Length information (complete length, incl. CRC)	1	<87>
4	Set identifier	1	<0x0F>
5	Current working pressure (at pressure sensor)	1	1/10 bar
6	Current level (in vessel)	1	%
7	Not used	1	%
8	Not used	1	%
9	Outputs, state (0 - Off, 1 - On) **)	2	-
	Bit 0: Output Motor 1 (Valve 4) pressure increase		
	Bit 1: Output Motor 2 (Valve 5) pressure increase		
	Bit 2: Output Valve 1 (1.1) pressure reduction		
	Bit 3: Output Valve 2 (2.1) pressure reduction		
	Bit 4: Output Valve 3; Motor 3 refeeding (pressurisation)		
	Bit 5: Output Release valve (Compressor) (only logical, identical with valve 2; 2.1)		
	Bit 8: Degassing On (not active: Flexcon M-K)	2	-
	Bit 9: De-gassing mode (0 - normal, 1 - turbo)		
	Bit 15: Error signal (0 - No, 1 - Yes)		
11	Error message, State (1 - error active) **)	2	-
	Bit 0: Low pressure alarm limit exceeded		
	Bit 1: High pressure alarm limit exceeded		
	Bit 2: Low pressure alarm limit exceeded		
	Bit 3: High pressure alarm limit exceeded		
	Bit 4: Motor protection motor 1 On		
	Bit 5: Motor protection motor 2 On		
	Bit 6: Runtime limit motor 1 exceeded		
	Bit 7: Runtime limit motor 2 exceeded		
	Bit 8: Minimum pressure limiter On		
	Bit 9: Diaphragm rupture sensor On		
	Bit 10: Refeeding after error stopped		
	Bit 11: Pressure maintenance after error stopped		
13	Current number of last error message (0 - no error)	1	-
14	Unit of measurement of refeeding	1	1/100 h Litres
	1 - Time		
	2 - Volume		
	0 - None (no refill)	4	-
15	Value of refeeding *)		
	if Byte 14 = 1 ==> in 1/100 hours		
	if Byte 14 = 2 ==> in Litres		
	(Byte 15 is MSB, Byte 18 is LSB)	4	Minutes
19	Operational hours total *) (Byte 19 is MSB, Byte 22 is LSB)		

Byte (Index)	Description	Dimension (Byte)	Unit
23	Availability (0 - No, 1 - Yes **)	2	-
	Bit 0: Motor 1 / Valve 4 pressure increase		
	Bit 1: Motor 2 / Valve 5 pressure increase		
	Bit 2: Valve 1 (1.1) pressure reduction		
	Bit 3: Valve 2 (2.1) pressure reduction		
	Bit 4: Valve 3; Motor 3 refeeding (pressurisation)		
	Bit 5: Release valve (compressor)		
	Bit 8: Minimum pressure limiter		
	Bit 9: Diaphragm rupture sensor		
	Bit 10: Maximum temperature monitor		
25	Working pressure (set point of pressure maintenance)	1	1/10 bar
26	Low working pressure tolerance (hysteresis)	1	1/10 bar
27	High working pressure tolerance (hysteresis)	1	1/10 bar
28	Minimum pressure alarm limit (absolute)	1	1/10 bar
29	Maximum pressure alarm limit (absolute)	1	1/10 bar
30	Minimum water level (absolute)	1	%
31	Level refeeding On (absolute)	1	%
32	Quantity of refeeding	1	%
33	Level refeeding Off (absolute)	1	%
34	Minimum level alarm limit	1	%
35	Maximum level alarm limit	1	%
36	Max. quantity of refeeding per start *)	2	Litres
38	Max. time of refeeding per start *)	2	Minutes
40	Nominal volume of vessel *)	2	Litres
42	Motor power class of pump-, compressor- ID *)	2	
44	Operational mode (0 - single mode, 1 - back up mode, 2 - load-dependent parallel mode)	1	-
45	Not used	1	-
46	Order number (Flamco GmbH; 9 digits) *) (Byte 46 is MSB, Byte 49 is LSB)	4	-
50	Used code at input of order number	1	-
51	Time at input of order number Year, Month, Day, Hour, Minute (Byte 51 is year, Byte 55 is minute)	16	-
56 - 71	Not used		-
72	Language index	1	-
73	Program version (x.x.x) (Byte 73 is main version number)	3	-
76	Not used	1	-
77	Not used	8	-
85	16 Bit CRC, Low part	1	-
86	16 Bit CRC, High part	1	-
		87	

*) Big Endian (MSB at lowest, LSB at highest memory address)
**) Little Endian (LSB at lowest, MSB at highest memory address)

Technical data:
Transfer rate: 19200 Baud (1 start-, 8 data-, 1 stop bit, no parity). Bushing plug: polarised bushing bar, AMP MODU IV Nr.: 102241-2 (type: Tyco).
Data link: Min. demand LIYCY TP (Cu-flexible wire, isolated, pairwise stranded with Cu- total shield); Recommendation: Avoid cable length of more than 500 m (Data security, parasitic inductions).

Advice:
Consider the termination of the bus cable. Both ends have to be fitted with 120 Ohm resistance between A (3) and B (4) (SPC internally already terminated).





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