

Data Sets for VW1150

(Version 1.2, 24.08.11, © Dr. Westerboer GmbH, Germany)

\$PWES0: Data Output, every second¹

\$PWES0, DD, VVVV, MMMM, NNNN, BBBB, SSSS, AAAAA, QQQQ, IIII, TTTT, UUU, CCCC*CS<CR><LF>

Symbol	Parameter	Units	Range	Example
DD	Device		20=VW1000, 21=VW1010, 22=VW1020, 23=VW1030	20 for VW1000
VVVV	Vario * 10	m/s	-999 .. 999	-22 = -2.2 m/s
MMMM	Averager * 10	m/s	-999 .. 999	22 = +2.2 m/s
NNNN	Nettovario * 10	m/s	-999 .. 999	-22 = -2.2 m/s
BBBB	Aver. Nettovario * 10	m/s	-999 .. 999	2 = +0.2 m/s
SSSS	Speed to Fly Command * 10		-999 .. 999	Negative values: fly faster
AAAAA	STD Altitude	m	0 .. 99999	589 = 589 m
QQQQQ	QNH Altitude	m	0 .. 99999	589 = 589 m
IIII	IAS * 10	km/h	0 .. 9999	1295 = 129.5 km/h
TTTT	TAS * 10	km/h	0 .. 9999	1295 = 129.5 km/h
UUU	Battery * 10	V	0 .. 999	128 = 12.8 V
CCCC	Temperature * 10	°C	-999 .. 999	295 = 29.5 °C

\$PWES1: Data Output, on request or if parameter changed on VW10x0

\$PWES1, DD, MM, S, AAA, F, V, LLL, BB*CS<CR><LF>

Symbol	Parameter	Units	Range	Example
DD	Device		20=VW1000, 21=VW1010, 22=VW1020, 23=VW1030	22 for VW1020
MM	MacCready * 10	m/s	0 .. 60 in steps by 5	25 = 2.5 m/s
S	climb/cruise switch		0 (climb), 1 (cruise)	
AAA	Averager Time	s	2 .. 120	15 = 15 s
F	Damping		1, 2, 3	
V	Audio Volume		0 .. 8	
LLL	Wing loading * 10	Kg/m ²	200 .. 999 in steps by 5	385 = 38.5 kg/m ²
BB	bugs	%	0 .. 20	

¹ Every second for data rates >= 19200 Baud; 2 seconds for data rates >= 4800 Baud; 4 seconds for data rates < 4800 Baud

\$PWES2: Data Output, Device Parameter

\$PWES2, DD, SSSS, YY, FFFF*CS<CR><LF>

Symbol	Parameter	Units	Range	Example
DD	Device		20=VW1000, 21=VW1010, 22=VW1020, 23=VW1030, 60=VW1150	22 for VW1020
SSSS	Serial Number		0 .. 9999	
YY	Year of production		0 .. 99	10 = 2010
FFFF	Firmware * 100		100 .. 9999	101 = 1.01

\$PWES4: Data Input, General Parameter

\$PWES4, S, MM, V, LLL, BB, D, AAA, QQQQ, R*CS<CR><LF>

Symbol	Parameter	Units	Range	Example
S	Request of Dataset		0 or nothing 1-> PWES1 2-> PWES2	2 -> PWES2 of VW1150 <u>and</u> ext VW10x0
MM	MacCready * 10	m/s	0 .. 60 in steps by 5	25 = 2.5 m/s
V	Audio Volume		0 .. 8	
LLL	Wing loading * 10	kg/m ²	200 .. 900 in steps by 5	385 = 38.5 kg/m ²
BB	bugs	%	0 .. 20	
D	Vario damping		1, 2, 3	
AAA	Aver. Time	s	2 .. 120	15 = 15 s
QQQQ	Altitude of start, for QNH	m	0 .. 9999	405 = 405 m
R	Range of the pointer		1= -3 .. 3 2= -6 .. 6 3= -12 .. 12	

If one parameter is omitted, its old value remains in the VW10x0.

Then, no space is allowed between commas.

For example to request only data set \$PWES2, send the following to VW1150:

\$PWES4,2,,,,,,,,*CS<CR><LF>.

Other example: To set MC to 3.0 m/s and damping to value 2:

\$PWES4,,30,,,2,,,*CS<CR><LF>

By a request of data set \$PWES1 or after editing a parameter on the external variometer, only \$PWES1 of the external variometer will be sent. After a request of \$PWES2, VW1150 answers with \$PWES2 of its own parameters and \$PWES2 of the external variometer.

\$PWES5: Data Input, Polar of the Glider

\$PWES5,AAA,BBB,CCC,DDD,EEE,FFF,LLL*CS<CR><LF>

Symbol	Parameter	Units	Range	Example
AAA	V1	km/h	0 .. 250	100 = 100 km/h
BBB	W1 * -100	m/s	0 .. 999	65 = -0.65 m/s
CCC	V2	km/h	0 .. 250	120 = 120 km/h
DDD	W2 * -100	m/s	0 .. 999	92 = -0.92 m/s
EEE	V3	km/h	0 .. 250	150 = 150 km/h
FFF	W3 * -100	m/s	0 .. 999	120 = -1.20m/s
LLL	Wing load for the Polar * 10	kg/m ²	200 .. 600	385 = 38.5 kg/m ²

CS is the checksum. It is calculated by an EXCLUSIVE OR over all bytes between ,'\$ and ,*'. Output as HEX value.

<CR> Carriage return = 0x0D ASCII-Code

<LF> Line feed = 0x0A ASCII-Code