

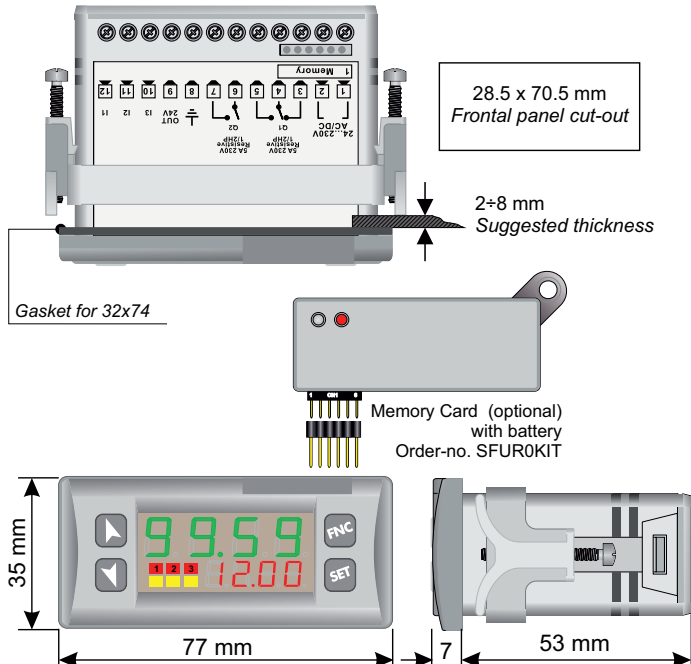
**Operating Instructions
for
Counter/Preset Counter**

Model: DAG-Z2F80W2





SIZE AND INSTALLATION



TECHNICAL DATA

Operating conditions Operating temperature 0-40°C, humidity 35..95uR%

Sealing Front panel IP65 (with optional gasket), Box IP30, Terminal blocks IP20

Material PC ABS UL94V0 self-extinguishing

Digital Inputs 3 x 13 PNP/NPN configurable as analogue for potentiometers. (max 28 VDC in PNP mode)

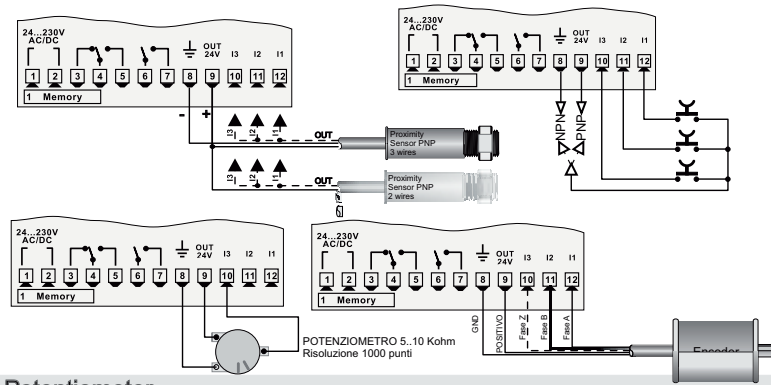
Outputs 2 relays 5A resistive charge

OUT 24V 30mA (at 24 VAC supply), 40 mA (at 24 VDC supply), 60 mA (at 110 to 230 VAC)

Back-UP Rechargeable battery, approx. 7days autonomy

Power Supply 24 to 230VAC/VDC +/-15% 50/60Hz / 2W

WIRING DIAGRAM



Potentiometer

To modify Set1 or Set2 by external potentiometer follow the steps below:

1-use potentiometers 0 to 5/10kohm

2-connect cursor to pin I3; a wrong connection may damage the potentiometer and lead to lock of the device.

3-accuracy on input is max 1000 points, therefore set the parameters "Upper limit" and "Lower limit" with a max difference of 1000 units.

(Ex.: LoS1 to 50,0 and uPS1 to 150,0 to modify preset value related to Set1 between 50 and 150 pulsess with steps of one tenth). Greater differences would make unstable the less significant digit.

4-To calibrate the scale of potentiometer enter the configuration mode and select:

Hin.3 as Pot Fin.3 as Set1 or Set2 P.tAr as Enable

Exit configuration mode and place potentiometer at minimum level and press **ESC** key, then place potentiometer at max level and press **PREMERE** key: the device automatically exit the calibration procedure.

N.B.: A switch-off of the device would interrupt the calibration.

MEMORY CARD (optional)

Parameters and setpoint values can be copied from one device to another using the Memory card. Attention: Pls. perform first an update of the memory card.

There are two methods:

With the device connected to the power supply:

Insert the memory card when the controller is off.

On activation display 1 shows **MEM** and display 2 shows **----**.

(Only if the values stored on Memory Card are correct).

By pressing the **ESC** key display 2 shows **Load**.

Confirm using the **PREMERE** key.

The device loads the new data and starts again.

With the controller disconnected from the power supply: The memory card is equipped with an internal battery with a life of about 1000 uses. Insert the memory card and press the programming button.

When writing the parameters, the LED turns red and on completing the procedure it changes to green. It is possible to repeat the procedure.

UPDATING MEMORY CARD.

To update the memory card values, follow the procedure described in the first method, setting display 2 to **----** so as not to load the parameters on controller.

Enter configuration and change at least one parameter.

Exit configuration. Changes are saved automatically.

LED	MEANING
	Report the activation of Q1
	Report the activation of Q2
	Report serial transmission by the DAG-Z2

SETPOINT MODIFICATION

	PRESS	DISPLAY
1		Visualizes SETPOINT 1 / 2
2	or	Modify selected SET
2a		Selects chosen digit
3a	or	Modify blinking digit of selected SET

LOADING DEFAULT VALUES

This procedure restores the factory settings of the instrument.

	PRESS	DISPLAY	FUNCTION
1	for 3 seconds	Display 1 shows 0000 and 1st digit flashes. Display 2 shows PRSS	
2	or	Modify flashing digit and pass to the next one pressing	Enter password 9999
3	to confirm	Device loads default settings	Switch-off and restart the device

INTRODUCTIONINTRODUCTION

Thanks for choosing a KOBOLD device. The DAG-Z2 can be set in 2 different modes: Single or Double counter, all with independent settings. 3 universal digital inputs are available (NPN/PNP/Potential free contact) and can be used for bidirectional encoders reading, UP/DOWN counter function, LOCK/HOLD to lock or hold current visualization. One input is also analogue in order to allow setpoint modification by an external



Read carefully the safety guidelines and programming instructions contained in this manual before using/connecting the device. Disconnect power supply before proceeding to hardware settings or electrical wirings. Only qualified personnel should be allowed to use the device and/or service it and in accordance to technical data and environmental conditions listed in this manual. Do not dispose electric tools together with household waste materials in observance of European Directive 2002/96/CE.

MODIFY CONFIGURATION PARAMETERS			
PRESS		DISPLAY	Function
1		Display 1 shows 0000 and 1st digit flashes. Display 2 shows PASS	
2		Modify flashing digit and pass to the next one pressing	Enter password 1234
3		Display shows first parameter of configuration table Func	
4		Scroll parameters	
5		Increase or decrease visualized value by pressing and an arrow key.	Enter the new data which will be stored releasing the keys
6		End configuration, controller exits from programming mode.	

PARAMETERS LIST

FUNCTION CONFIGURATION

Func	P-01 Counter Function	Counter Functions	
S in 0	Single (1 Counter)	1 counter functioning	Default
double	Double (2 Counters)	2 counters functioning	

BACKUP MEMORY CONFIGURATION

Power	P-02 Power-off Memory	Power-off memory	
d is	Disable	No counter stored at power-off	Default
cnt 1	Counter 1	Counter 1 stored at power-off	
cnt 2	Counter 2	Counter 2 stored at power-off	
all	All Counters	All counters stored at power-off	

INPUT CONFIGURATION

H in 1	P-03 Hardware input 1	Input 1 Hardware configuration	
H in 2	P-04 Hardware input 2	Input 2 Hardware configuration	
H in 3	P-05 Hardware input 3	Input 3 Hardware configuration	
n Pn	NPN	NPN (not available on Input 3)	
Pn P	PNP	PNP	Default
t t l	TTL	TTL	
Pot b	Potent.	Potentiometer (available only for Input 3)	

INPUT CONFIGURATION

F il 1	P-06 Filter Delay Input 1	Input 1 digital filter configuration	
F il 2	P-07 Filter Delay Input 2	Input 2 digital filter configuration	
F il 3	P-08 Filter Delay Input 3	Input 3 digital filter configuration	
00	No delay	Input filter disabled	Default
05	0,5 ms	Filter of 0,5 ms	
...(Step 0,5 ms)	
1000	100,0 ms	Filter of 100,0 ms	

INPUT CONFIGURATION

A in 1	P-09 Active State Input 1	Active state Input 1	
A in 2	P-10 Active State Input 2	Active state Input 2	
A in 3	P-11 Active State Input 3	Active state Input 3	
H LEv	High Level	High level (available only for Input 2)	
L LEv	Low Level	Low level (available only for Input 2)	
r is	Rising edge	Rising edge	Default
F ALL	Falling edge	Falling edge	

INPUT CONFIGURATION

F in 3	P-12 Function Input 3	Function associated to Input 3	
d is	Disable	Disabled	Default
enc Z	Encoder Z	Loading encoder Z	
Ld 1	Load Counter 1	Loading counter 1	Default
Ld 2	Load Counter 2	Loading counter 2	
Ld 12	Load Counter 1&2	Loading counters 1 and 2	
SEt 1	Set1	Set1 setting by potentiometer	
SEt 2	Set2	Set2 setting by potentiometer	

INPUT CONFIGURATION

F F u P	P-13 Function Key UP	Function associated to UP (up arrow key)	
d is	Disable	Disabled	Default
Ld 1	Load Counter 1	Loading counter 1	
Ld 2	Load Counter 2	Loading counter 2	
Ld 12	Load Counter 1&2	Loading counters 1 and 2	

INPUT CONFIGURATION

Pt AR	P-14 Potentiom. Tarature	Potentiometer calibration procedure	
d is	Disable	Disabled	Default
En	Enable	Enabled	

COUNTER CLOCK CONFIGURATION

CLOCK COUNTER 1

CLC 1	P-15 Clock Counter 1	Counter 1 count mode selection	
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CLOCK COUNTER 2

CLC 2	P-33 Clock Counter 2	Counter 2 count mode selection	
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d is	Disable	Disabled	Default C2
Enc	Encoder	Bidirectional encoder (I1) phase A, (I2) phase B	
u P --	I1 Up, I2 Off	UP mode (I1)	Default C1
da --	I1 Down, I2 Off	DOWN mode (I1)	
-- u P	I1 Off, I2 Up	UP mode (I2)	
-- da	I1 Off, I2 Down	DOWN mode (I2)	
u P da	I1 Up, I2 Down	UP mode (I1) - DOWN mode (I2)	
u P d	I1 Up, I2 Incr./Decr.	UP mode (I1) with reverse direction (I2)	
u P EL	I1 Up, I2 En./Lock	UP mode (I1) with count lock (I2)	
u P EH	I1 Up, I2 En./Hold	UP mode (I1) with keeping value on display (I2)	
da EL	I1 Down, I2 En./Lock	DOWN mode (I1) with count lock (I2)	
da EH	I1 Down, I2 En./Hold	DOWN mode (I1) with keeping value on display (I2)	
oc 2	Output Counter 2/1	UP count on rising edge of counter 2/1 output	

COUNTER DISPLAY CONFIGURATION

d C 1	P-16 Display Counter 1	Counter 1 visualization selection	
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d C 2	P-34 Display Counter 2	Counter 2 visualization selection	
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d is	Disable	Counter value not visualized	Default C2
U su	Visualized	Counter value visualized	Default C1
d P C 1	P-17 Decimal Point Counter 1	Counter 1 visualization format	
d P C 2	P-35 Decimal Point Counter 2	Counter 2 visualization format	
0	0	No decimal digit visualization	Default C1/C2
00	0.0	1 decimal digit visualization	
000	0.00	2 decimal digits visualization	
0000	0.000	3 decimal digits visualization	
in C 1	P-18 Counter 1 input counts	Counter 1 input counts (1 to 9999)	Default 1
in C 2	P-36 Counter 2 input counts	Counter 2 input counts (1 to 9999)	Default 1
u v C 1	P-19 Counter 1 Visualized Counts	Counter 1 visualized counts (1 to 9999)	Default 1
u v C 2	P-37 Counter 2 Visualized Counts	Counter 2 visualized counts (1 to 9999)	Default 1
SETPOINT CONFIGURATION			
d S 1	P-20 Display Set 1	Counter 1 setpoint visualization selection	
d S 2	P-38 Display Set 2	Counter 2 setpoint visualization selection	
d is	Disable	Setpoint value not visualized	Default C2
U su	Visualized	Setpoint value visualized	
Mod i	Modifiable	Setpoint value visualized and modifiable	Default C1
Lo S 1	P-21 Lower Limit Set 1	Set 1 minimum value (0 to 9999)	Default 0
Lo S 2	P-39 Lower Limit Set 2	Set 2 minimum value (0 to 9999)	Default 0
u P S 1	P-22 Upper Limit Set 1	Set 1 maximum value (0 to 9999)	Default 999
u P S 2	P-40 Upper Limit Set 2	Set 2 maximum value (0 to 9999)	Default 999
AUTOMATIC LOAD CONFIGURATION			
ALC 1	P-23 Automatic Load Counter 1	Counter 1 automatic loading	
ALC 2	P-23 Automatic Load Counter 1	Counter 1 automatic loading	
d is	Disable	Automatic loading disabled	Default C2
SEt 1	Counter = Set 1	Loading if counter = Set 1	Default C1
SEt 2	Counter = Set 2	Loading if counter = Set 2	
So d 1	Counter = Set 1 + adU 1	Relay active = Set1 for Time1	
So d 2	Counter = Set 2 + adU 2	Relay active = Set2 for Time2	
u v C 1	Counter = Set 1 for adU 1 (counts) (down)	Loading Value1 when reached 0	
u v C 2	Counter = Set 2 for adU 2 (counts) (down)	Loading Value2 when reached 0	
S-d 1	Counter = Set 1 for adU 1 (time) (down)	Loading = Set1 - Output duration1	
S-d 2	Counter = Set 2 for adU 2 (time) (down)	Loading = Set1 - Output duration1	
So d 1	Counter = Set 1 for adU 1 (time)	Loading if counter = Set1 Output Duration 1	
So d 2	Counter = Set 1 for adU 2 (time)	Loading if counter = Set1 Output Duration 2	
COUNTER LOAD VALUE CONFIGURATION			
CLd 1	P-24 Counter Load Value 1	Counter 1 loading value	Default 0
CLd 2	P-42 Counter Load Value 2	Counter 2 loading value	Default 0
COUNTER OUTPUT MODE CONFIGURATION			
Co n 1	P-25 Counter 1 Output Mode	Counter 1 output mode	
Co n 2	P-43 Counter 2 Output Mode	Counter 2 output mode	
SEt 1	Counter = Set 1	Output active if Counter=Set	Default C1
SEt 2	Counter = Set 2	Output active if Counter=Set	Default C2
t i NE	Counter = Set * Output Duration (time)	Output active for Output Duration (time)	
Co n	Counter = Set * Output Duration (counts)	Output active for Output Duration (counts)	
SE 12	Counter = Set1 + Set2	Output active if Set1+Set2	
-SE 1	Counter = Set1 (down)	Output active if Set1+Set2	Only P-25
-SE 2	Counter = Set2 (down)	Output active if Set1+Set2	Only P-43
-t i n	Counter = Set * Output Duration (time)(down)	Output active for Output Duration (time)	
-Co n	Counter = Set * Output Duration (counts)(down)	Output active for Output Duration (counts)	
-S 12	Counter = Set1 + Set2 (down)	Output active if Set1+Set2	
OUTPUT DURATION CONFIGURATION			
adU 1	P-26 Output 1 Duration	Counter 1 output duration	Default 1,0
adU 2	P-44 Output 2 Duration	Counter 2 output duration	Default 10
u SEr	Output Duration Input by User	Value modifiable by user	
LA t c	Latch output (clear only by load)	Latch output, resettable by counter loading	
l	Min output duration	Output duration minimum value	
999	Max output duration	Output duration maximum value	
COUNTER FREQUENCY DISPLAY CONFIGURATION			
d F 1	P-27 Display Frequency Counter 1	Counter 1 frequency visualization	
d F 2	P-45 Display Frequency Counter 2	Counter 2 frequency visualization	
d is	Disable	Counter frequency value not visualized	Default
U su	Visualized	Counter frequency value visualized	
d P F 1	P-28 Decimal Point Frequency Counter 1	Counter 1 frequency format	
d P F 2	P-46 Decimal Point Frequency Counter 2	Counter 2 frequency format	
0	0	Visualization with no decimal digit	Default
00	0.0	Visualization with 1 decimal digit	
000	0.00	Visualization with 2 decimal digits	
0000	0.000	Visualization with 3 decimal digits	
in F 1	P-29 Counter 1 Input frequency	Counter 1 input frequency (1...9999Hz)	Default 1
in F 2	P-47 Counter 2 Input frequency	Counter 2 input frequency (1...9999Hz)	Default 1
u v F 1	P-30 Counter 1 Visualized Frequency	Counter 1 visualized frequency	Default 1
u v F 2	P-48 Counter 2 Visualized Frequency	Counter 2 visualized frequency	Default 1
out 1	P-31 Output Q1 Setup	Output Q1 setting	
out 2	P-32 Output Q2 Setup	Output Q2 setting	
d is	Disable	Disabled output	Default C2
C in 1	Out Counter 1 n.o.	Counter 1 output on n.o. contact	Default C1
C in 2	Out Counter 1 n.c.	Counter 1 output on n.c. contact	
C n 1	Out Counter 2 n.o.	Counter 2 output on n.o. contact	
C n 2	Out Counter 2 n.c.	Counter 2 output on n.c. contact	

COUNTER FUNCTION

P-01 Counter Function

5 inc Single (1 Counter)
doub Double (2 Counters)

BACKUP MEMORY CONFIGURATION

P-02 Power-off Memory

d.5 Disable
c1 Counter 1
c2 Counter 2
ALL All Counter

COUNTER CLOCK CONFIGURATION

P-15 Clock Counter 1

d.5 Disable
Enc Encoder
I1 Up, I2 Off
d.11 Down, I2 Off
d.12 Off, I2 Up
d.13 Off, I2 Down
d.14 Up, I2 Down
d.15 Up, I2 Incr./Decr.
d.16 Up, I2 En./Lock
d.17 Down, I2 En./Lock
d.18 Up, I2 Hold
d.19 Down, I2 En./Hold

INPUT CONFIGURATION

P-03 Hardware Input 1

NPN PNP TTL

P-04 Hardware Input 2

NPN PNP TTL

P-05 Hardware Input 3

PNP TTL Potent.

P-06 Filter Delay Input 1

No delay 0.5 ms 100.0 ms

P-07 Filter Delay Input 2

No delay 0.5 ms 100.0 ms

P-08 Filter Delay Input 3

No delay 0.5 ms 100.0 ms

P-09 Active State Input 1

Rising edge Falling edge

P-10 Active State Input 2

High Level Low Level Rising edge Falling edge

P-11 Active State Input 3

Rising edge Falling edge

P-12 Function Input 3

d.5 Disable
Enc Z Encoder Z
Ld 1 Load Counter 1
Ld 2 Load Counter 2
Ld 1&2 Load Counter 1&2
Set1 Set2

P-13 Function Key UP

d.5 Disable
Ld 1 Load Counter 1
Ld 2 Load Counter 2
Ld 1&2 Load Counter 1&2

AUTOMATIC LOAD CONFIGURATION

P-23 Automatic Load Counter 1

d.5 Disable
SET1 Counter 1 = Set1
SET2 Counter 1 = Set2
Sod1 Counter 1 = Set1 + odU1
Sod2 Counter 1 = Set2 + odU2
U.L1 Counter 1 = Set1 for odU1 (counts)(down)
U.L2 Counter 1 = Set1 for odU2 (time)(down)
S.E1 Counter 1 = Set2 for odU1 (time)(down)
S.E2 Counter 1 = Set2 for odU2 (time)

COUNTER LOAD VALUE CONFIGURATION

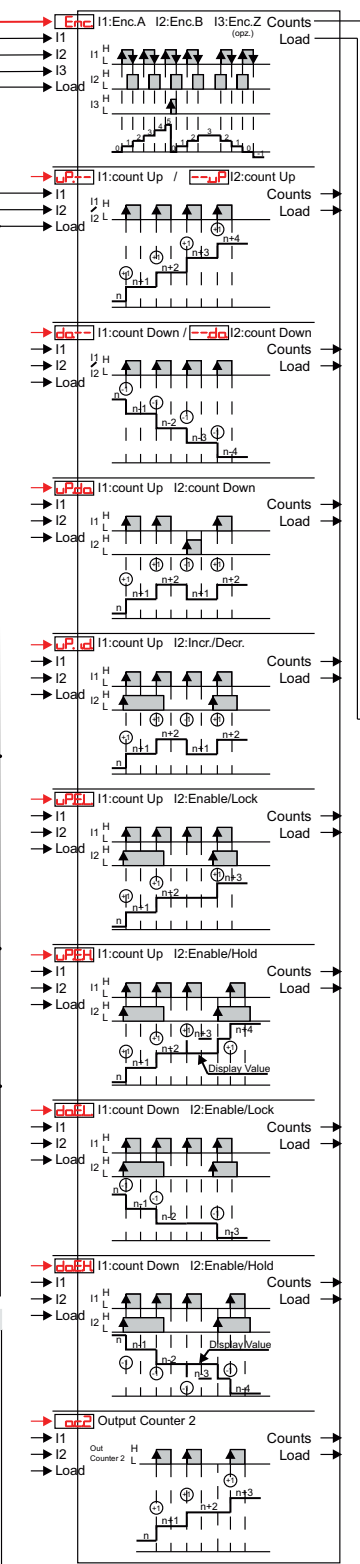
P-24 Counter 1 Load Value

0 Min value
9999 Max value

TABLE OF ERROR MESSAGES

E-01 ERROR IN WRITING OF EEPROM
E-02 ERROR IN READING OF EEPROM
E-03 INCORRECT PARAMETERS (Note 1)
E-04 INCORRECT CALIBRATION DATA (Note 1)
E-05 INCORRECT STATUS DATA (Note 1)
E-06 INCORRECT BACKUP REGISTERS (Note 2)

Note 1: Switch the device off and restart it, if error is still notified contact technical service.
Note 2: Discharged battery, keep the device connected to the power supply in order to recharge the battery.



COUNTER OUTPUT MODE CONFIGURATION

P-25 Counter 1 Output Mode

SET1 Counter = Setpoint1
E.TE Counter = Set * Output Duration (time)
L.Cou Counter = Set * Output Duration (counts)
S.E1 Counter = Setpoint 1 (Set1)(down)
E.L1 Counter = Set for Outp. Duration (time)(down)
L.Co Counter = Set for Outp. Duration (counts)(down)
S.E2 Counter = Set1+Set2 (down)

OUTPUT DURATION CONFIGURATION

P-26 Output 1 Duration

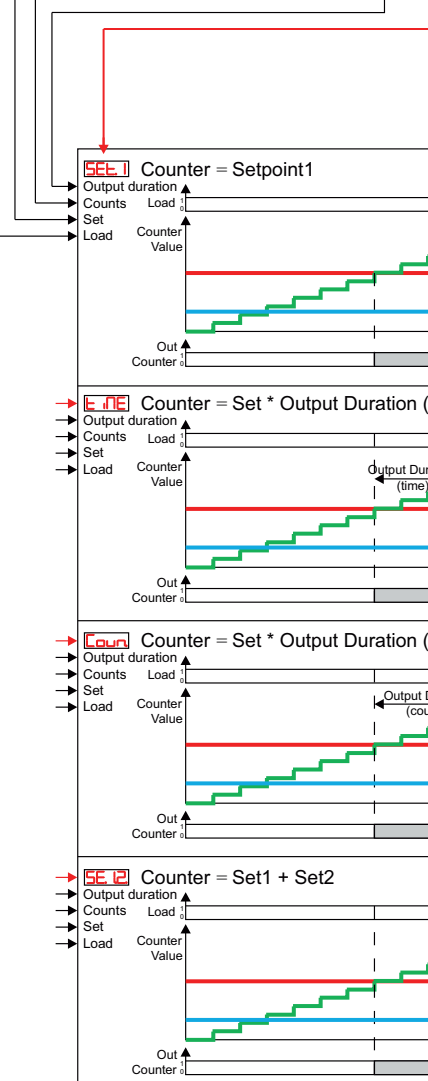
USEF Output Duration Input by User
L.Latch Latch output (clear only by load)
Min output duration
999 Max output duration

SETPOINT CONFIGURATION

P-20 Display Set 1 P-22 Upper limit Set 1

d.5 Disable
U.S. Visualized
Modifiable

P-21 Lower limit Set 1



COUNTERS DISPLAY CONFIGURATION

P-16 Display Counter 1 P-17 Decimal Point Counter 1 P-18 Counter 1 Input counts P-19 Counter 1 Visualized counts

d.5 Disable
U.S. Visualized

P-27 Display Frequency 1 P-28 Decimal Point Frequency 1 P-29 Counter 1 Input Frequency P-30 Counter 1 Visualized Frequency

d.5 Disable
U.S. Visualized

COUNTERS FREQUENCY DISPLAY CONFIGURATION

P-27 Display Frequency 1 P-28 Decimal Point Frequency 1 P-29 Counter 1 Input Frequency P-30 Counter 1 Visualized Frequency

d.5 Disable
U.S. Visualized

Logic level	NPN input	PNP input	TTL input
H	< 4,7 v	> 5,7 v (I1, I2) > 12,4 v (I3)	> 2,5 v
L	> 5,7 v	< 4,7 v (I1, I2) < 10,2 v (I3)	< 2,0 v

DAG-Z2F80W2

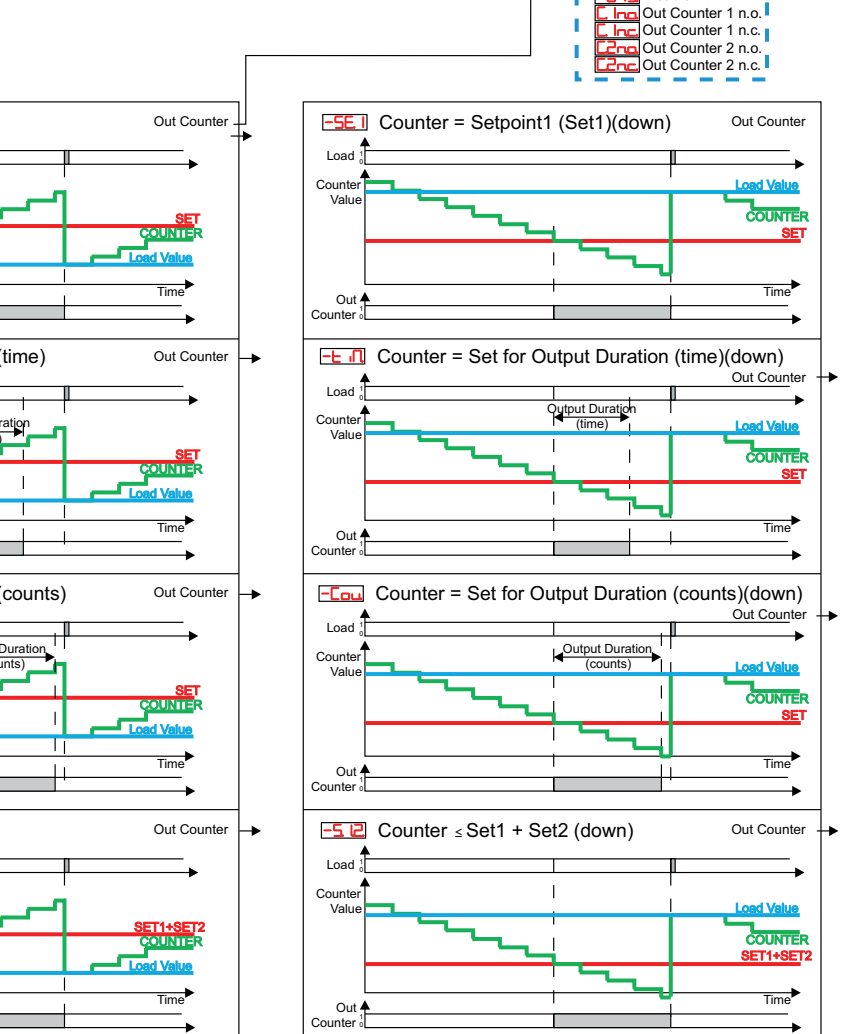
OUTPUT CONFIGURATION

P-31 Output Q1 Setup

d.5 Disable
c1 Out Counter 1 n.o.
c2 Out Counter 1 n.c.
c3 Out Counter 2 n.o.
c4 Out Counter 2 n.c.

P-32 Output Q2 Setup

d.5 Disable
c1 Out Counter 1 n.o.
c2 Out Counter 1 n.c.
c3 Out Counter 2 n.o.
c4 Out Counter 2 n.c.



Declaration of Conformance

We, KOBOLD Messring GmbH, Hofheim-Ts, Germany, declare under our sole responsibility that the product:

Counter/Preset Counter: DAG-Z2F80W2

to which this declaration relates is in conformity with the standards noted below:

EN61000-6-3
EN61000-6-4
EMV emission

EN61000-6-2
EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11
EMV immunity


EN61010-1
Safety Extra Low Voltage

Also the following EWG guidelines are fulfilled:

2006/95/EC Low Voltage Directive
2004/108/EC EMC Directive

Hofheim, 17. Feb. 2014


H. Peters
General Manager


M. Wenzel
Proxy Holder