Operating Instructions

for

Counter/Preset Counter

Model: DAG-Z2F80W2

We don't accept warranty and liability claims neither upon this publication nor in case of improper treatment of the described products.

The document may contain technical inaccuracies and typographical errors. The content will be revised on a regular basis. These changes will be implemented in later versions. The described products can be improved and changed at any time without prior notice.

1. Contents

Manufactured and sold by:

Kobold Messring GmbH
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Internet: www.kobold.com

2. Note

Please read these operating instructions before unpacking and putting the unit into operation. Follow the instructions precisely as described herein.
The instruction manuals on our website www.kobold.com are always for currently manufactured version of our products. Due to technical changes, the instruction manuals available online may not always correspond to the product version you have purchased. If you need an instruction manual that corresponds to the purchased product version, you can request it from us free of charge by email (info.de@kobold.com) in PDF format, specifying the relevant invoice number and serial number. If you wish, the operating instructions can also be sent to you by post in paper form against an applicable postage fee.

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

The devices are only to be used, maintained and serviced by persons familiar with these operating instructions and in accordance with local regulations applying to Health & Safety and prevention of accidents.

When used in machines, the measuring unit should be used only when the machines fulfil the EC machinery directive.

3. Instrument Inspection

Instruments are inspected before shipping and sent out in perfect condition.
Should damage to a device be visible, we recommend a thorough inspection of the delivery packaging. In case of damage, please inform your parcel service / forwarding agent immediately, since they are responsible for damages during transit.

Scope of delivery:
The standard delivery includes:
- Counter/Preset Counter model: DAG-Z2F80W2

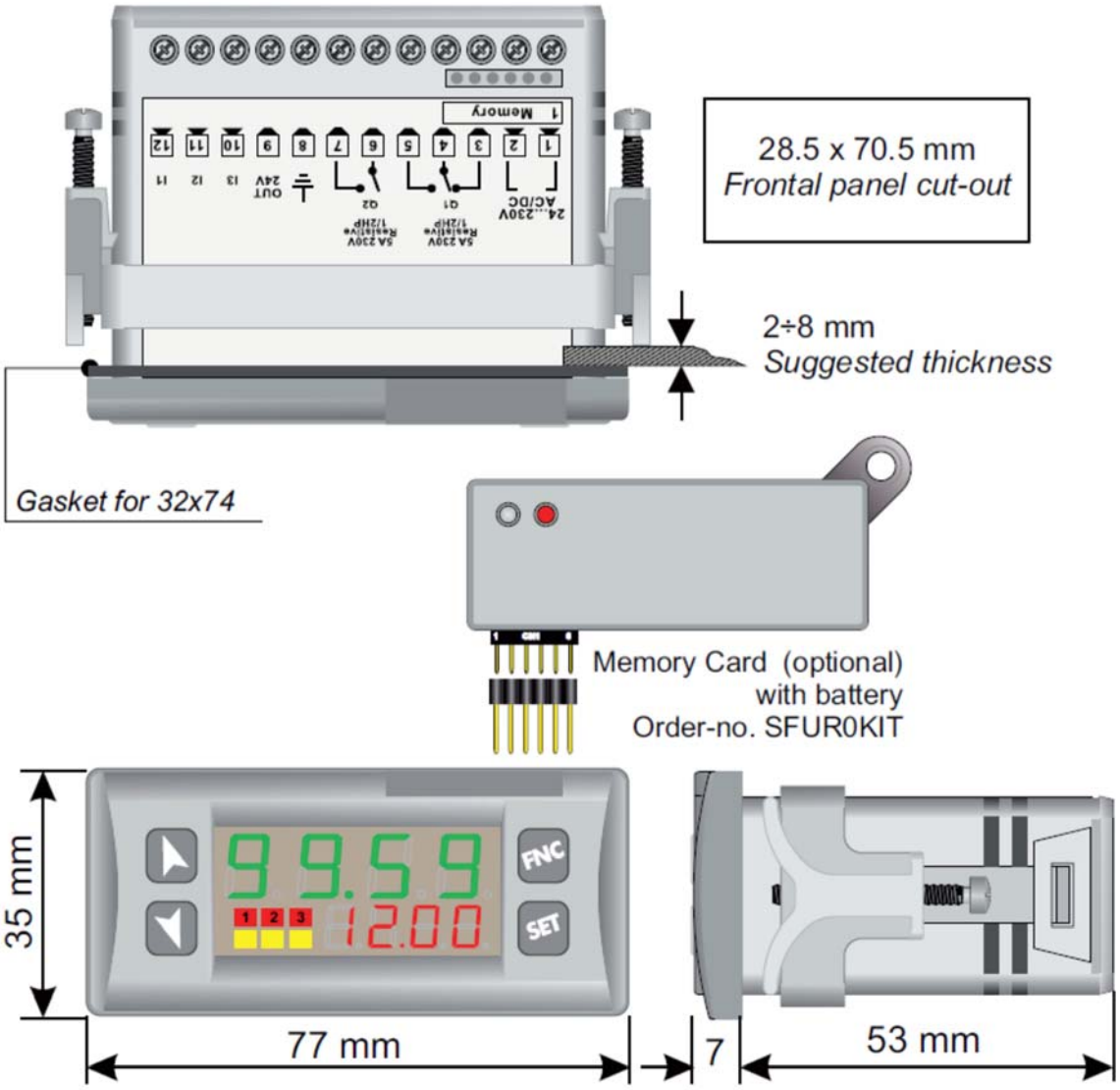
4. Regulation Use

Any use of the device, which exceeds the manufacturer's specification, may invalidate its warranty. Therefore, any resulting damage is not the responsibility of the manufacturer. The user assumes all risk for such usage.

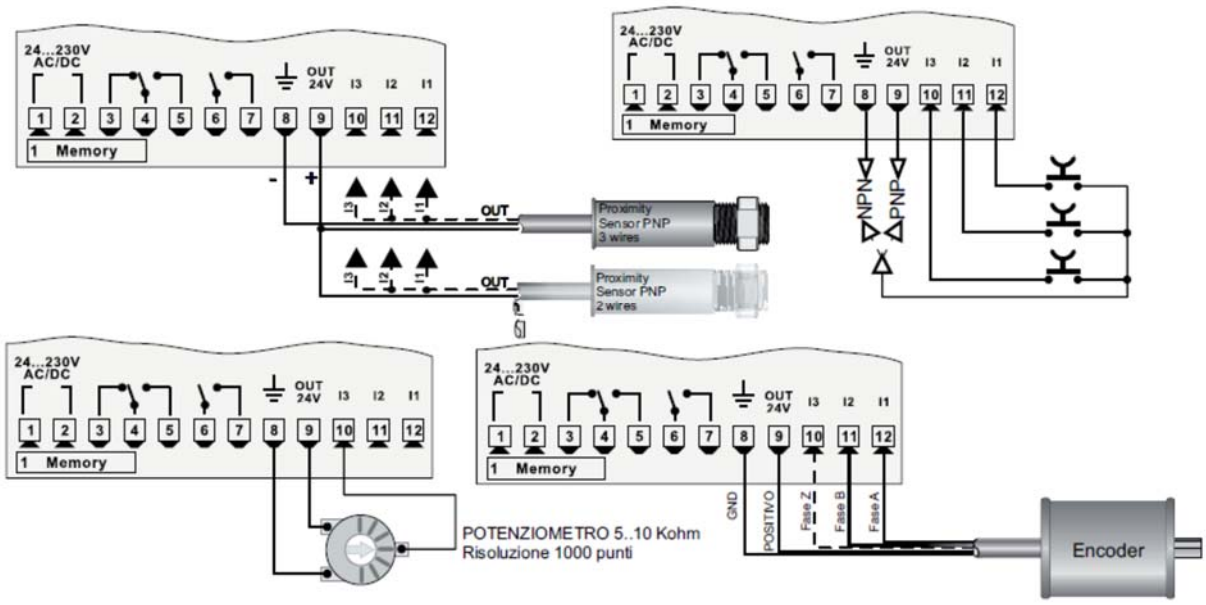
5. Operating Principle

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

6. Installation



7. Electrical Connection



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 pulses 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 S**et2** **P.tAr** as Enable

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

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

8. 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 nEno and display 2 shows ---- (Only if the values stored on Memory Card are correct).
By pressing the key display 2 shows LoAd
Confirm using the 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	SET	Visualizes SETPOINT 1 / 2
2	or	Modify selected SET
2a	FNC	Selects chosen digit
3a	or	Modify blinking digit of selected SET

9. Loading Default Values

This procedure restores the factory settings of the instrument.

LOADING DEFAULT VALUE

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

10. Operating Principle

MODIFY CONFIGURATION PARAMETERS

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

PARAMETERS LIST

FUNCTION CONFIGURATION

Func	P-01 Counter Function	*Counter Functions*	
SinG	Single (1 Counter)	*1 counter functioning*	Default
doub	Double (2 Counters)	*2 counters functioning*	

BACKUP MEMORY CONFIGURATION

PoME	P-02 Power-off Memory	*Power-off memory*	
d.S	Disable	*No counter stored at power-off*	Default
cnt1	Counter 1	*Counter 1 stored at power-off*	
cnt2	Counter 2	*Counter 2 stored at power-off*	
ALL	All Counters	*All counters stored at power-off*	

INPUT CONFIGURATION

H.in1	P-03 Hardware input 1	*Input 1 Hardware configuration*	
H.in2	P-04 Hardware input 2	*Input 2 Hardware configuration*	
H.in3	P-05 Hardware input 3	*Input 3 Hardware configuration*	
nPn	NPN	*NPN (not available on Input 3)*	
PnP	PNP	*PNP*	Default
tEL	TTL	*TTL*	
Pot	Potent.	*Potentiometer (available only for Input 3)*	
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 desabled*	Default
05	0,5 ms	*Filter of 0,5 ms*	
	...	*...(Step 0,5 ms)*	
1000	100,0 ms	*Filter of 100,0 ms*	
A.in1	P-09 Active State Input 1	*Active state Input 1*	
A.in2	P-10 Active State Input 2	*Active state Input 2*	
A.in3	P-11 Active State Input 3	*Active state Input 3*	
HiEu	High Level	*High level (available only for Input 2)*	
LiEu	Low Level	*Low level (available only for Input 2)*	
r.S1	Rising edge	*Rising edge*	Default
FALL	Falling edge	*Falling edge*	
F.in3	P-12 Function Input 3	*Function associated to Input 3*	
d.S	Disable	*Disabled*	
Enc2	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*	
SEt1	Set1	*Set1 setting by potentiometer*	
SEt2	Set2	*Set2 setting by potentiometer*	
FtuP	P-13 Function Key UP	*Function associated to UP (up arrow key)*	
d.S	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*	
PtAr	P-14 Potentiom. Tarature	*Potentiometer calibration procedure*	
d.S	Disable	*Disabled*	Default
En	Enable	*Enabled*	

COUNTER CLOCK CONFIGURATION

CLC.1	P-15 Clock Counter 1	*Counter 1 count mode selection*	
CLC2	P-33 Clock Counter 2	*Counter 2 count mode selection*	
d.S	Disable	*Disabled*	Default C2
Enc	Encoder	*Bidirectional encoder (I1) phase A, (I2) phase B*	
uP--	I1 Up, I2 Off	*UP mode (I1)*	Default C1
do--	I1 Down, I2 Off	*DOWN mode (I1)*	
--uP	I1 Off, I2 Up	*UP mode (I2)*	
--do	I1 Off, I2 Down	*DOWN mode (I2)*	
uPdo	I1 Up, I2 Down	*UP mode (I1) - DOWN mode (I2)*	
uP.d	I1 Up, I2 Incr./Decr.	*UP mode (I1) with reverse direction (I2)*	
uPEL	I1 Up, I2 En./Lock	*UP mode (I1) with count lock (I2)*	
uPEH	I1 Up, I2 En./Hold	*UP mode (I1) with keeping value on display (I2)*	
doEL	I1 Down, I2 En./Lock	*DOWN mode (I1) with count lock (I2)*	
doEH	I1 Down, I2 En./Hold	*DOWN mode (I1) with keeping value on display (I2)*	
oc2	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*	
d.C2	P-34 Display Counter 2	*Counter 2 visualization selection*	
d.S	Disable	*Counter value not visualized*	Default C2
U.Su	Visualized	*Counter value visualized*	Default C1
dPC1	P-17 Decimal Point Counter 1	*Counter 1 visualization format*	
dPC2	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*	
inC.1	P-18 Counter 1 input counts	*Counter 1 input counts (1 to 9999)*	Default 1
inC2	P-36 Counter 2 input counts	*Counter 2 input counts (1 to 9999)*	Default 1
u.C.1	P-19 Counter 1 Visualized Counts	*Counter 1 visualized counts (1 to 9999)*	Default 1
u.C2	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.S2	P-38 Display Set 2	*Counter 2 setpoint visualization selection*	
d.S	Disable	*Setpoint value not visualized*	Default C2
U.Su	Visualized	*Setpoint value visualized*	
Mod	Modifiable	*Setpoint value visualized and modifiable*	Default C1
LoS.1	P-21 Lower Limit Set 1	*Set 1 minimum value (0 to 9999)*	Default 0
LoS2	P-39 Lower Limit Set 2	*Set 2 minimum value (0 to 9999)*	Default 0
uPS.1	P-22 Upper Limit Set 1	*Set 1 maximum value (0 to 9999)*	Default 999
uPS2	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*	
ALC2	P-23 Automatic Load Counter 1	*Counter 1 automatic loading*	
d.S	Disable	*Automatic loading disabled*	Default C2
SEt1	Counter = Set 1	*Loading if counter = Set1*	Default C1
SEt2	Counter = Set 2	*Loading if counter = Set2*	
Sod1	Counter = Set 1 + adU1	*Relay active = Set1 for Time1*	
Sod2	Counter = Set 2 + adU2	*Relay active = Set2 for Time2*	
u.C1	Counter = Set 1 for adU1 (counts) (down)	*Loading Value1 when reached 0*	
u.C2	Counter = Set 2 for adU2 (counts) (down)	*Loading Value2 when reached 0*	
S-d1	Counter = Set 1 for adU1 (time) (down)	*Loading = Set1 - Output duration1*	
S-d2	Counter = Set 2 for adU2 (time) (down)	*Loading = Set1 - Output duration1*	
Sdt1	Counter = Set 1 for adU1 (time)	*Loading if counter = Set1 Output Duration 1*	
Sdt2	Counter = Set 1 for adU2 (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
CLd2	P-42 Counter Load Value 2	*Counter 2 loading value*	Default 0

COUNTER OUTPUT MODE CONFIGURATION

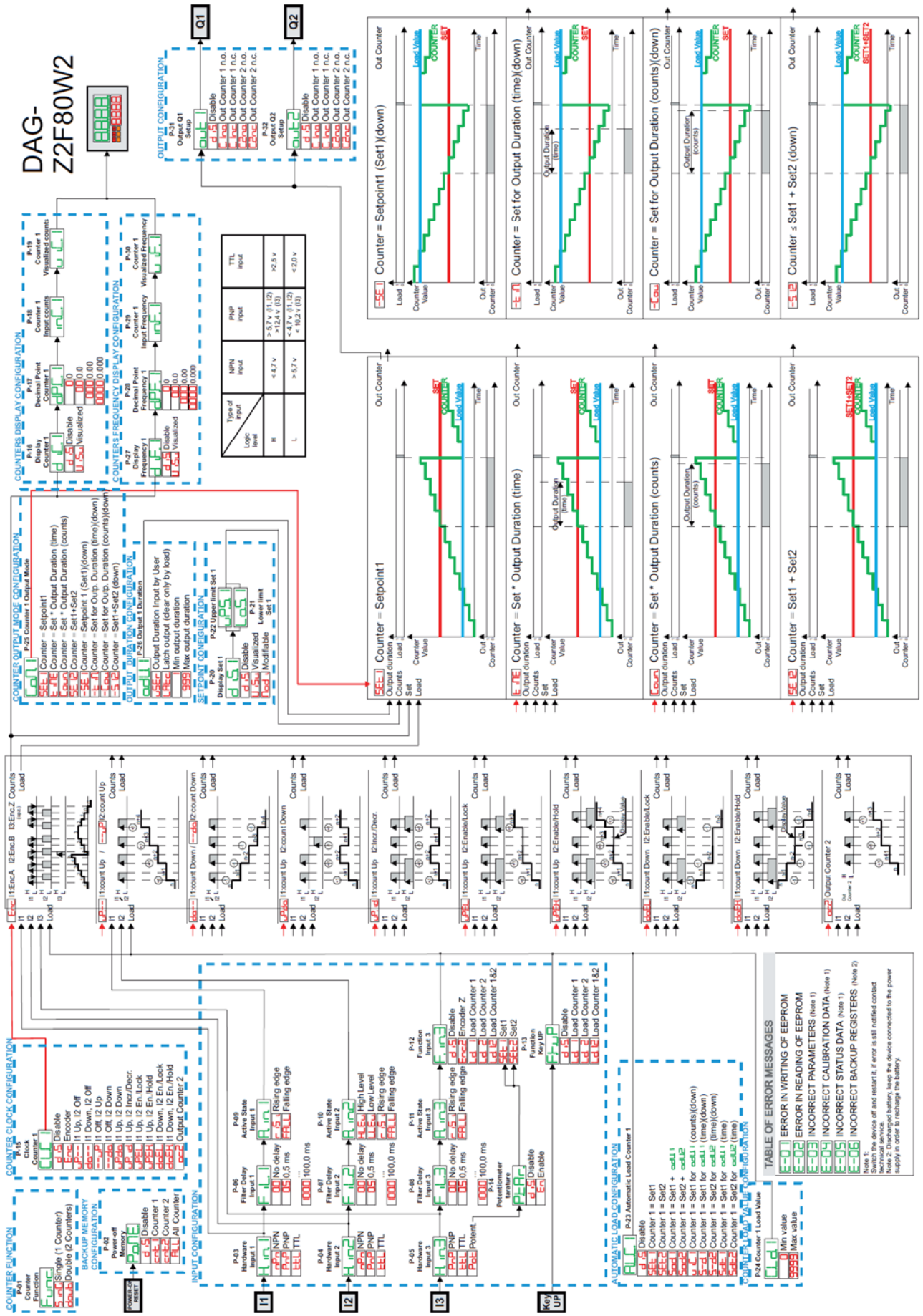
CoM.1	P-25 Counter 1 Output Mode	*Counter 1 output mode*	
CoM2	P-43 Counter 2 Output Mode	*Counter 2 output mode*	
SEt1	Counter = Set1	Output active if Counter=Set	Default C1
SEt2	Counter = Set2	Output active if Counter=Set	Default C2
t.nE	Counter = Set * Output Durarion (time)	Output active for Output Duration (time)	
Coun	Counter = Set * Output Durarion (counts)	Output active for Output Duration (counts)	
SE12	Counter = Set1 + Set2	Output active if Set1+Set2	
-SE1	Counter = Set1 (down)	Output active if Set1+Set2	Only P-25
-SE2	Counter = Set2 (down)	Output active if Set1+Set2	Only P-43
-t.n	Counter = Set * Output Duration (time)(down)	Output active for Output Duration (time)	
-Cou	Counter = Set * Output Duration (counts)(down)	Output active for Output Duration (counts)	
-S12	Counter = Set1 + Set2 (down)	Output active if Set1+Set2	

OUTPUT DURATION CONFIGURATION

adU1	P-26 Output 1 Duration	*Counter 1 output duration*	Default 1,0
adU2	P-44 Output 2 Duration	*Counter 2 output duration*	Default 10
uSEr	Output Duration Input by User	*Value modifiable by user*	
LAtc	Latch output (clear only by load)	*Latch output, resettable by counter loading*	
1	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.F2	P-45 Display Frequency Counter 2	*Counter 2 frequency visualization*	
d.S	Disable	Counter frequency value not visualized	Default
U.Su	Visualized	Counter frequency value visualized	
dPF.1	P-28 Decimal Point Frequency Counter 1	*Counter 1 frequency format*	
dPF2	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	
inF.1	P-29 Counter 1 Input frequency	*Counter 1 input frequency (1...9999Hz)*	Default 1
inF2	P-47 Counter 2 Input frequency	*Counter 2 input frequency (1...9999Hz)*	Default 1
u.F.1	P-30 Counter 1 Visualized Frequency	*Counter 1 visualized frequency*	Default 1
u.F2	P-48 Counter 2 Visualized Frequency	*Counter 2 visualized frequency*	Default 1
out1	P-31 Output Q1 Setup	*Output Q1 setting*	
out2	P-32 Output Q2 Setup	*Output Q2 setting*	
d.S	Disable	*Disabled output*	Default C2
C1no	Out Counter 1 n.o.	*Counter 1 output on n.o. contact*	Default C1
C1nc	Out Counter 1 n.c.	*Counter 1 output on n.c. contact*	
C2no	Out Counter 2 n.o.	*Counter 2 output on n.o. contact*	
C2nc	Out Counter 2 n.c.	*Counter 2 output on n.c. contact*	


DAG-
Z2F80W2
Q1
Q2
OUTPUT CONFIGURATION
COUNTERS DISPLAY CONFIGURATION
COUNTERS FREQUENCY DISPLAY CONFIGURATION
COUNTER OUTPUT MODE CONFIGURATION
OUTPUT DURATION CONFIGURATION
SETPOINT CONFIGURATION
COUNTER CLOCK CONFIGURATION
COUNTER FUNCTION
BACKUP MEMORY CONFIGURATION
INPUT CONFIGURATION
AUTOMATIC LOAD CONFIGURATION
COUNTER OUTPUT DURATION
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 = Setpoint1
Counter = Set * Output Duration (time)
Counter = Set * Output Duration (counts)
Counter = Set1 + Set2
Counter = Setpoint1 (Set1)(down)
Counter = Set for Output Duration (time)(down)
Counter = Set for Output Duration (counts)(down)
Counter ≤ Set1 + Set2 (down)
Type of input
Logic level
NPN input
PNP input
TTL input
I1
I2
I3
Key UP

11. Technical Information

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

12. Order Codes

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

13. Dimensions

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

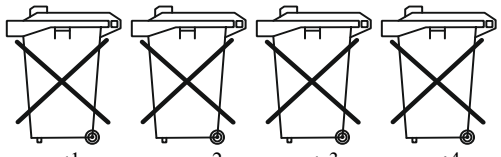
14. Disposal

Note!

- Avoid environmental damage caused by media-contaminated parts
- Dispose of the device and packaging in an environmentally friendly manner
- Comply with applicable national and international disposal regulations and environmental regulations.

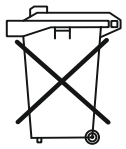
Batteries

Batteries containing pollutants are marked with a sign consisting of a crossed-out garbage can and the chemical symbol (Cd, Hg, Li or Pb) of the heavy metal that is decisive for the classification as containing pollutants:



1. „Cd" stands for cadmium
2. „Hg" stands for mercury
3. „Pb" stands for lead
4. „Li" stands for lithium

Electrical and electronic equipment



15. EU Declaration of Conformance

We, KOBOLD Messring GmbH, Nordring 22-24, 65719 Hofheim, Germany, declare under our sole responsibility that the product

Counter/Preset Counter: DAG-Z2F80W2

to which this declaration relates is in conformity with the following EU directives stated below

2014/30/EU	**EMC Directive**
2014/35/EU	**Low Voltage Directive**
2011/65/EU	**RoHS** (category 9)

Also, the following standards are fulfilled

EN 61000-6-4
EN 55011:2009+A1:2010

EN 61000-6-2
EN 61000-4-2
EN 61000-4-3
EN 61000-4-4
EN 61000-4-5
EN 61000-4-6
EN 61000-4-8

EN 61000-4-11

EN 61010-1

Hofheim, 21 May 2024

H. Volz
General Manager

J. Burke
Compliance Manager