DF406_V5 Universal Display (panel mounting)

Can be used and is developed for almost every sensor.
As well frequency as an analog output of the sensor can be used as input for the display.
Rate or total flow can be seen on the display.

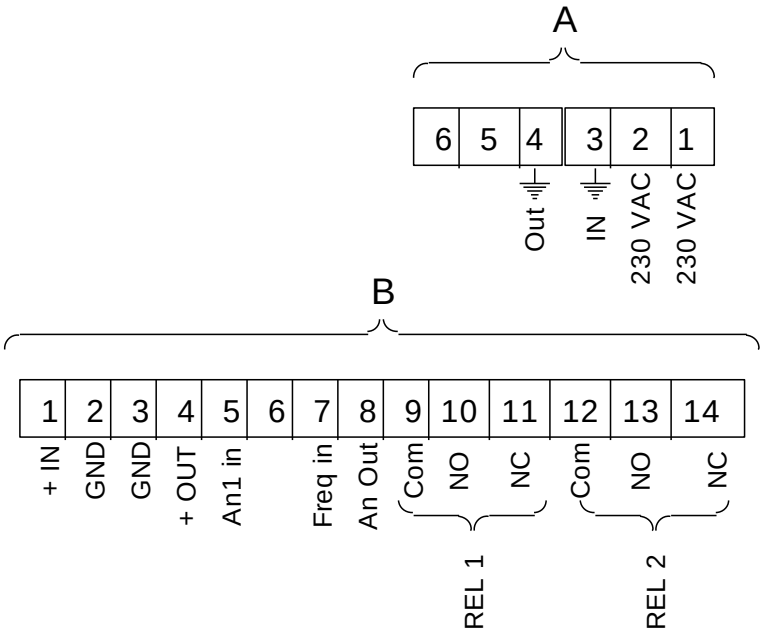
The incoming signal can be scaled in the DF406, so that the customer can adjust (or calibrate) the instrument in place.
The DF406 has an analog output, that can be connected to a SPS (central computer) system.
This output can be scaled and can be related to the input.

The DF406 has two programmable independent relays

Technical specification

Supply voltage in	:	230 VAC / 50Hz of 24 VDC	
Current consumption	:	230 VAC ⇒	max 70 mA
	:	24 VDC ⇒	max 650 mA
Supply voltage out	:	24 VDC < 5VA	
Dimension	:	96 x 96 x 120 mm	
Display	:	LED 8 digits, 7 segment	
Color	:	green	
Character height	:	7mm	
Accuracy	:	0,1% of the calibrated flowrange	
Input signal	:	- 0 – 5V	
	:	- 0 – 10V	
	:	- 0 – 20 mA	
	:	- 4 – 20 mA	
	:	- Frequency	
Volumetric units	:	- m^3/h	
	:	- l/h	
	:	- l/min	
	:	- m/s	
	:	- option	
Output	:	- display :	- rate (actual flow)
			- total (total flow) (resetable)
		- analog signal:	- 0 – 20 mA
			- 4 – 20 mA
			- 0 – 5V
Relays	:	two free to program and independent of each other 230VAC – 6A	

Wiring diagram



Block A
1 = 230VAC Power supply in
2 = 230VAC Power supply in
3 = ⏚ (ground) in } if necessary
4 = ⏚ (ground) out }
5 =
6 =

Block B
1 = Power 24 VDC + in
2 = Power 24 VDC - in
3 = 24 VDC – out } power
4 = 24 VDC + out } sensor
5 = Analog + in
6 =
7 = Frequency in
8 = Analog + out

9 = Relay 1 } C(ommon)
10 = Relay 1 } N(ormally) O(pen)
11 = Relay 1 } N(ormally) C(losed)

12 = Relay 2 } C(ommon
13 = Relay 2 } N(ormally) O(pen)
14 = Relay 2 } N(ormally) C(losed)

Installation

1. Connect the power supply 230 VAC
A1 = blue
A2 = brown
A3 = ground in } if
A4 = ground out } necessary
or
B1 = 24 VDC +
B2 = 24 VDC –

2. **Sensors**: a) Frequency sensors
b) Analog sensors

a) **Frequency sensors**
B3 = 24 VDC -
B4 = 24 VDC +
B7 = Π signal in

b) Analog sensors

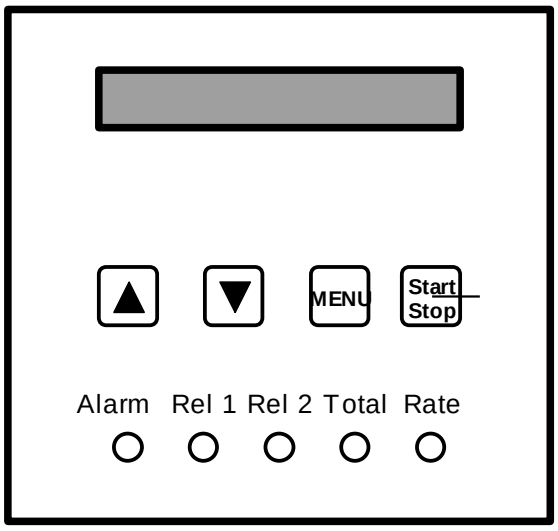
3 wire system	2 wire system
B3 = 24 VDC -	
B4 = 24 VDC +	B4 = 24 VDC +
B5 = mA (V) signal	B5 = mA signal

2 analog sensors can be connected (B5 and B6)

3. **Relays (2x)**

B9 = C(ommon)	relay 1
B10 = N(ormally) O(pen)	relay 1
B11 = N(ormally) C(losed)	relay 1
B12 = C(ommon)	relay 2
B13 = N(ormally(O(pen)	relay 2
B14 = N(ormally) C(losed)	relay 2

Display (working principle)



1. Connect the power supply (230 VAC or 24 VDC)
2. Connect the used sensor. Sensor with analog output or frequency.
3. As soon as the power supply is connected, the display shows:
   0.00
   and the red LED by Rate lights up.
4. Push the button S(tart) / S(top) and the display shows:
   INEL
5. Push the button M(enu) and the display shows:
   INPUT
6. Push again on S/S and the display shows:
   IN 0 - 20
   Up ▲
   IN 4 - 20
   Up ▲
   IN 0 - 5
   Up ▲
   IN 0 – 10
   Up ▲
   IN freq
7. As soon as you have the right input signal push the button S/S.
   The display shows:
   EENHEID
8. Activate with the button S/S.
9. The display shows:
   m^3/h

10. Push the Up button ▲. The following possibilities are shown.

m^3/h
Up ▲
l/h
Up ▲
l/m
Up ▲
m/s
Up ▲
option
Up ▲
m^3/h

11. Confirm your choice by pushing the S/S button.
12. The display shows: (if the sensor is an analog sensor)
    SCAL ANA
13. Analog signal, give in the maximum value of 20 mA.
    By frequency the PPL value (pulse pro liter) is given in.
    See the list attached (PPL is different for each diameter)
14. Push the button S/S and the display shows:
    INPUT
15. Push the button M and the display shows
    OUTPUT
16. Confirm with the button S/S. The display shows:
17. Out 4 - 20
    Up ▲
    Out 0 - 5
    Up ▲
    Out 0 - 20
    Up ▲
    Out 4 – 20
18. Confirm your choice with the button S/S.
19. The display shows:
    SCAL OUT
    Confirm this with the button S/S and the display shows:
    MAX Analog Signal (example 20 mA = the value in the display)
    You can change this value with the Up and Down button.
    The cursor can be moved with the M button.
20. Confirm this with the button S/S. The display shows
    OUTPUT
21. Push the button M and the display shows:
    RELAY 1
22. Confirm with the button S/S. The display shows:
    0000800.0, with the cursor on the last position (blinking).
    The cursor can be moved by pushing the Menu button.
    Give in the wanted value and confirm this with de button S/S.
    The display shows:
    RELAY 1
23. Push the button Menu and the display shows:
    RELAY 2

24. Confirm this with the button S/S and the display shows:

0000400.0
The cursor can be moved with the Menu button.

25. Give in the value wanted and confirm this with S/S. The display shows:
    RELAY 2
26. Push again on the Menu button and the display shows:
    INEL
27. Push the S/S button and the system will be activated with the values given in.
28. The display shows 000 and the red LED Rate is burning.
29. To get from actual flow to total flow push the button Menu one time.
30. To reset the total flow, if the red LED by total is burning, push the Up button one time .
31. If you want a total reset, the power supply of the display must be taken off. By reconnecting the power supply you have to push on the Up button.

Alarm LED

When the output is more than the maximum (5V or 20 mA), the alarm LED will light on.

Schematic Program