

\*Table 1 Program

01 :1 Execution interval (seconds)

1: Batt Voltage (P10)

1: 1 Loc [ batterie ]

2: If time is (P92)

1: 0 Minutes (Seconds --) into a

2: 600 Interval (same units as above)

3: 30 Then Do

3: Signature (P19)

1: 2 Loc [ Prog\_sig ]

4: End (P95)

5: Volt (Diff) (P2)

1: 1 Reps

2: 25 2500 mV 60 Hz Rejection Range

3: 1 DIFF Channel

4: 3 Loc [ Sonde1 ]

5: 0.00062 Multiplier

6: 0.75 Offset

6: Volt (Diff) (P2)

1: 1 Reps

2: 25 2500 mV 60 Hz Rejection Range

3: 2 DIFF Channel

4: 4 Loc [ Sonde2 ]

5: 0.00062 Multiplier

6: 0.75 Offset

7: Volt (Diff) (P2)

1: 1 Reps

2: 25 2500 mV 60 Hz Rejection Range

3: 3 DIFF Channel

4: 5 Loc [ Sonde3 ]

5: 0.00062 Multiplier

6: 0.75 Offset

8: Volt (Diff) (P2)

1: 1 Reps

2: 25 2500 mV 60 Hz Rejection Range

3: 4 DIFF Channel

4: 6 Loc [ Sonde4 ]

5: 0.00062 Multiplier

6: 0.75 Offset

**;Probe 1 (psi to mm)**

9:  $Z=F \times 10^n$  (P30)

1: 0.9986 F

2: 0 n, Exponent of 10

3: 7 Z Loc [ Sonde1\_Z ]

10:  $Z=X-Y$  (P35)

1: 3 X Loc [ Sonde1 ]

2: 7 Y Loc [ Sonde1\_Z ]

3: 8 Z Loc [ sonde1psi ]

11:  $Z=X \times F$  (P37)

1: 8 X Loc [ sonde1psi ]

2: 703.07 F

3: 9 Z Loc [ sonde1\_mm ]

**;Probe 2 (psi to mm)**

12:  $Z=F \times 10^n$  (P30)

1: 0.9976 F

2: 0 n, Exponent of 10

3: 10 Z Loc [ Sonde2\_Z ]

13:  $Z=X-Y$  (P35)

1: 4 X Loc [ Sonde2 ]

2: 10 Y Loc [ Sonde2\_Z ]

3: 11 Z Loc [ Sonde2psi ]

14:  $Z=X \times F$  (P37)

1: 11 X Loc [ Sonde2psi ]

2: 703.07 F

3: 12 Z Loc [ Sonde2\_mm ]

**;Probe 3 (psi to mm)**

15:  $Z=F \times 10^n$  (P30)

1: 0.9979 F

2: 0 n, Exponent of 10

3: 13 Z Loc [ Sonde3\_Z ]

16:  $Z=X-Y$  (P35)

1: 5 X Loc [ Sonde3 ]

2: 13 Y Loc [ Sonde3\_Z ]

3: 14 Z Loc [ Sonde3psi ]

17: Z=X\*F (P37)  
1: 14 X Loc [ Sonde3psi ]  
2: 703.07 F  
3: 15 Z Loc [ Sonde3\_mm ]

**;Probe 4 (psi to mm)**

18: Z=F x 10^n (P30)  
1: 0.99645 F  
2: 0 n, Exponent of 10  
3: 16 Z Loc [ Sonde4\_Z ]

19: Z=X-Y (P35)  
1: 6 X Loc [ Sonde4 ]  
2: 16 Y Loc [ Sonde4\_Z ]  
3: 17 Z Loc [ Sonde4psi ]

20: Z=X\*F (P37)  
1: 17 X Loc [ Sonde4psi ]  
2: 703.07 F  
3: 18 Z Loc [ Sonde4\_mm ]

**;System stabilisation every 24 hours**

21: If time is (P92)  
1: 0 Minutes (Seconds --) into a  
2: 1440 Interval (same units as above)  
3: 30 Then Do

**;Calculation of the difference between the two probes**

22: Z=X-Y (P35)  
1: 9 X Loc [ sonde1\_mm ]  
2: 12 Y Loc [ Sonde2\_mm ]  
3: 19 Z Loc [ diff ]

**;Flag 4 controls pump 1**

23: If (X<=>F) (P89)  
1: 19 X Loc [ diff ]  
2: 4 <  
3: -5 F  
4: 30 Then Do

24: Do (P86)  
1: 14 Set Flag 4 High

25: Z=X+F (P34)  
1: 19 X Loc [ diff ]  
2: 5.0 F  
3: 27 Z Loc [ CptTmp1 ]

26: Z=ABS(X) (P43)  
1: 27 -- X Loc [ CptTmp1 ]  
2: 26 Z Loc [ CptTmp ]

27: End (P95)

**;Flag 5 controls pump 2**

28: If (X<=>F) (P89)  
1: 19 X Loc [ diff ]  
2: 3 >=  
3: 5 F  
4: 30 Then Do

29: Do (P86)  
1: 15 Set Flag 5 High

30: Z=X+F (P34)  
1: 19 X Loc [ diff ]  
2: -5.0 F  
3: 26 Z Loc [ CptTmp ]

31: End (P95)

32: Z=X\*F (P37)  
1: 28 X Loc [ CmpTmp ]  
2: 28.0 F  
3: 25 Z Loc [ Cpt ]

33: End (P95)

## **;Pump 1**

**;If the flag 4 is high, the pump 1 microprogram starts.**

34: If time is (P92)

1: 0     Minutes (Seconds --) into a  
2: 1     -- Interval (same units as above)  
3: 30     Then Do

35: If Flag/Port (P91)

1: 14     Do if Flag 4 is High  
2: 30     Then Do

**;If the counter is greater than zero, the system runs normally.**

36: If (X<=>F) (P89)

1: 25     X Loc [ Cpt     ]  
2: 3     >=  
3: 0     F  
4: 30     Then Do

37: Z=X+F (P34)

1: 25     X Loc [ Cpt     ]  
2: -1.0   F  
3: 26     Z Loc [ CptTmp   ]

38: Z=X (P31)

1: 26     -- X Loc [ CptTmp   ]  
2: 25     Z Loc [ Cpt     ]

39: Do (P86)

1: 41     Set Port 1 High

**;Otherwise the system is off until the next day.**

40: Else (P94)

41: Do (P86)

1: 51     Set Port 1 Low

42: Do (P86)

1: 24     Set Flag 4 Low

43: End (P95)

44: End (P95)

45: End (P95)

**;Pump 2**

**;If the flag 5 is high, the pump 2 microprogram starts.**

46: If time is (P92)

1: 0     Minutes (Seconds --) into a  
2: 1     -- Interval (same units as above)  
3: 30    Then Do

47: If Flag/Port (P91)

1: 15    Do if Flag 5 is High  
2: 30    Then Do

**;If the counter is greater than zero, the system runs normally.**

48: If (X<=>F) (P89)

1: 25    X Loc [ Cpt    ]  
2: 3     >=  
3: 0     F  
4: 30    Then Do

49: Z=X+F (P34)

1: 25    X Loc [ Cpt    ]  
2: -1.0   F  
3: 26    Z Loc [ CptTmp ]

50: Z=X (P31)

1: 26    -- X Loc [ CptTmp ]  
2: 25    Z Loc [ Cpt    ]

51: Do (P86)

1: 42    Set Port 2 High

**;Otherwise the system is off until the next day.**

52: Else (P94)

53: Do (P86)

1: 52    Set Port 2 Low

54: Do (P86)

1: 25    Set Flag 5 Low

55: End (P95)

56: End (P95)

57: End (P95)

**;End of balancing.**

**;Rain Gauge**

58: Pulse (P3)

- 1: 1 Reps
- 2: 1 Pulse Channel 1
- 3: 2 Switch Closure, All Counts
- 4: 24 Loc [ rain\_mm ]
- 5: 0.254 Multiplier
- 6: 0.0 Offset

59: If time is (P92)

- 1: 0 Minutes (Seconds --) into a
- 2: 15 Interval (same units as above)
- 3: 10 Set Output Flag High (Flag 0)

**;Data recording every 15 minutes.**

60: Set Active Storage Area (P80)

- 1: 1 Final Storage Area 1
- 2: 28 Array ID

61: Real Time (P77)

- 1: 1110 Year/Day,Hour/Minute (midnight = 0000)

62: Sample (P70)

- 1: 1 Reps
- 2: 9 Loc [ sonde1\_mm ]

63: Sample (P70)

- 1: 1 Reps
- 2: 12 Loc [ Sonde2\_mm ]

64: Sample (P70)

- 1: 1 Reps
- 2: 15 Loc [ Sonde3\_mm ]

65: Sample (P70)

1: 1 Reps  
2: 18 Loc [ Sonde4\_mm ]

66: Sample (P70)

1: 1 Reps  
2: 19 Loc [ diff ]

67: Totalize (P72)

1: 1 Reps  
2: 24 Loc [ rain\_mm ]

68: Do (P86)

1: 20 Set Output Flag Low (Flag 0)

69: Minimum (P74)

1: 1 Reps  
2: 0 Value Only  
3: 1 Loc [ batterie ]

\*Table 2 Program

02 : 0.0000 Execution Interval (seconds)

\*Table 3 Subroutines

End Program

### **;Input locations**

1 [batterie]  
2 [Prog\_sig]  
3 [Sonde1]  
4 [Sonde2]  
5 [Sonde3]  
6 [Sonde4]  
7 [Sonde1\_Z]  
8 [Sonde1psi]  
9 [Sonde1\_mm]  
10 [Sonde2\_Z]  
11 [Sonde2psi]  
12 [Sonde2\_mm]  
13 [Sonde3\_Z]  
14 [Sonde3psi]  
15 [Sonde3\_mm]  
16 [Sonde4\_Z]  
17 [Sonde4psi]  
18 [Sonde4\_mm]



19 [diff]  
20 -  
21 -  
22 -  
23 -  
24 [rain\_mm]  
25 [Cpt]  
26 [CptTmp]  
27 [CptTmp1]  
28 [CmpTmp]