PROGRAM DESCRIPTION
G5

Application software Prog ver: 118.0.0 (PM/RM) and 119.0.0 (RMD)

Loss In Weight

This description is valid for:
G5 Weighing Instrument with application program 118.0.0 and 119.0.0

See also the following description:
Publication no. 601401
Technical Manual PM , RM and RMD types, G5 Weighing Instrument, Program version 1.4.X(PM and RM) and 3.4.X (RMD).

If these descriptions in any case are contradictory, this description is valid.

General

This program is using the functions for flow rate measuring in G5 and adds functions to handle continuos discharge of material out of a vessel and filling the vessel at the same time as discharging is in progress.
This program is intended for an application where material is discharged from a scale vessel with a constant flow rate, and where the vessel during short periods is filled with material (the flow out of the vessel continuos also during the filling). This program adds the following functions to G5:

- Flow rate measurement. G5 calculates the flow of material out of the vessel all the time. During the filling period and a short time thereafter the flow value is frozen to the value when filling started.
- The weight of all discharged material from the vessel is accumulated in a register in G5 (Discharged weight). The weight taken out of the vessel during filling is calculated with the flow value when the filling started and the time used by the filling. Display, printout, and clearing this register is done as described in G5 Technical Manual.
- Control signal for filling the scale vessel can be achieved (low level is set in Level 3 and high level in Level 4.
- Control signal indicating that the flow rate value is frozen can be achieved.

Indications

A frozen flow rate value is indicated by the text ”(F)” after the flow rate value on the display (after the unit).

Following indications will be displayed in the same position as the indicator for ”Print” (in the top right corner at normal weight/flow display), if no printing is in progress.

The frozen flow status can be read at bit no 14 in the scale status from any fieldbus (See 5-7 in Fieldbus option manual) and from the Modbus register for scale status (See 6-9 in G5 Technical Manual).

INACT.	The input signal “Discharge in progress” is active
DISCH.	Discharge in progress. The input signal “Discharge in progress” is active and the input signal “Filling in progress” is inactive.
FILL.	Filling in progress. The input signals “Discharge in progress” and Filling in progress” is active (including throughout the time after deactivation of “Filling in progress” until the flow rate is thawed).

Discharged weight

The discharged weight can be found in menu ”Accumulated weight” from where it can be printed and cleared.

The discharged weight can also be handled via serial communication and can be found in Modbus register 40089 - 40094 (integer) and 44090 - 44093 (float).

See also G5 Technical Manual chapter 5 and 6 for more information about accumulated weight.

Flow rate measurement

See chapter 3,5 and 6 in G5 Technical Manual.

Changed set-up parameters

Following set-up paratmeters is changed (new default values or choices).

Menu “Parameter Set-up->Level Supervision”

Level 3 Source	
<Gross Weight>	New default value.
Level 3 Output	
<Active Below>	New default value.
Level 3 Hystereses	
<0.0>	New default value.
Level 4 Source	
<Gross Weight>	New default value.

Level 4 Output

<Active Below>	New default value.

Level 4 Hystereses

<0.0>	New default value.

Menu “Parameter Set-up->Digital Inputs” (New choices)

Digital Input 1 Use

<Discharge>	Discharge: “Discharge in progress”, signal from external equipment indicating that discharge of materials is in progress.

Digital Input 2 Use

<Filling>	Filling: “Filling in progress”, signal from external equipment indicating that filling of materials is in progress.

Menu “Parameter Set-up->Digital Outputs”

Digital Output 1 Source

<Control Fill>	Controll Fill: Signal from G5 that can be used to control the filling of material into the scale vessel

Digital Output 1 Source

<Flow Freezed>	Flow Freezed: Signal from G5 that indicates that the flow rate value is freezed due to filling.

Menu “Parameter Set-up->Calibration Parameters”

Delay Factor

<2.0>	Delay after filling is finished. The value is a factor that is multiplied with the derivation time for flow measurement. This is used to get a delay time after filling in order to have a correct flow value when the freezed flow value is thawed again. E.g. The Value 2.0 means that freezing of the flow rate value is thawed (2.0 x Derivation time) after that the input signal “Filling in progress” is deactivated.

Inputs

Following inputs are used for the functions described above.

Discharge in progress

(Discharge) — This input signal should be activated when material is taken out of the scale vessel. When this signal is deactivated, all material that has been discharged since last accumulation will be added to the accumulated weight register.

Filling in progress

(Filling) — This input signal should be activated when filling starts and stay activated until filling is stopped.

Outputs

Following outputs are used for the functions described above.

Control fill

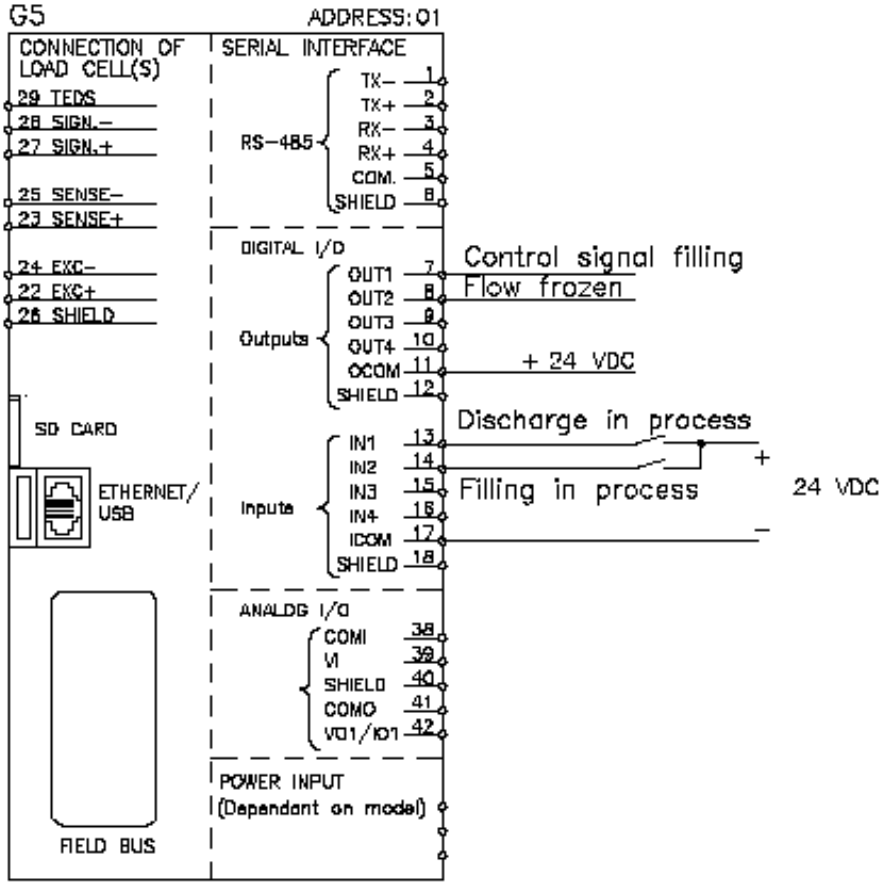
(Control fill) — This output signal is activated when the gross weight in the scale vessel goes below level 3 (low level). It will remain active until the weight goes above level 4 (high level).

This signal can be used to fill up the scale vessel when the gross weight goes below level 3.

Flow freezed

(Flow freezed) — This output signal is activated when the flow rate value in the instrument is frozen.

This signal can be used as an input signal to an external regulator to inform it that the flow rate value is frozen and therefore regulation can temporarly be turned off.



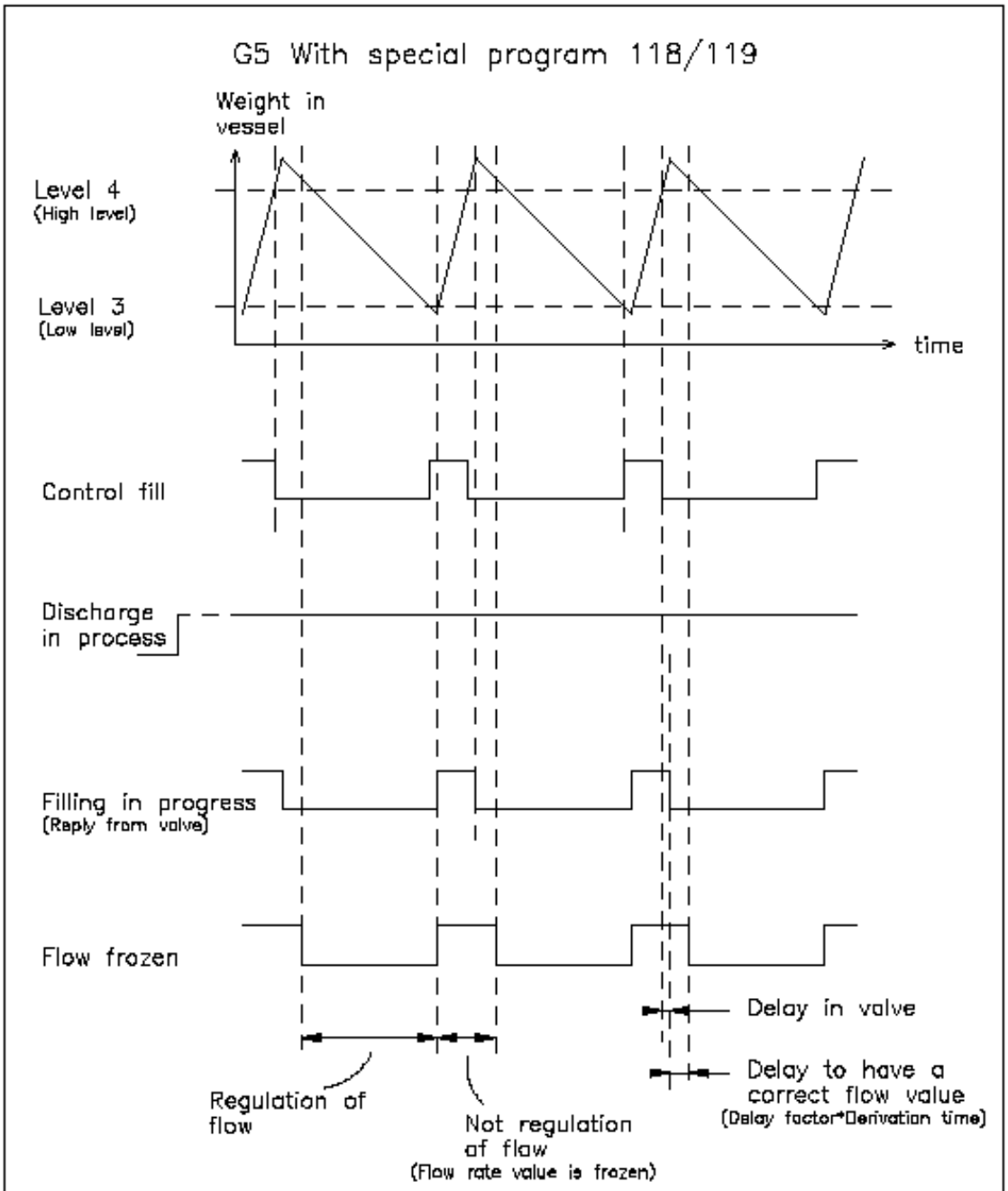
Parameter settings for above connections of digital in/outputs

Inputs: Input 1 use = Discharge
Input 2 use = Filling

Outputs: Output 1 use = Control fill
Output 2 use = Flow frozen

Date	Drawn	Revision date	Rev.	File name
2021–09–16	Btm/EAW			U1495137R0.DWG
Customer	Customer order no	Nobel order no		Scale

Denomination	BLH NOBEL A VPG Brand
G5 with continous discharge and flow measurement CONNECTION EXAMPLE	Drawing no U1495137R0



Date	Drawn	Revision date	Rev.	File name
2021-09-16	Btm/EAW			U1496137R0.DWG
Customer	Customer order no	Nobel order no		Scale

Denomination G5 with continuous discharge and flow rate measuring. SEQUENCE CHART	BLH NOBEL A VPG Brand Drawing no U1496137R0

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