PROGRAM DESCRIPTION
G4

Program: G4MI_1.9.155.1

Belt Conveyor Scale

This description is valid for:

G4 Weighing Instrument with application program **1.9.155.1**

See also the following descriptions

G4 Weighing Instrument, Technical Manual PM/DT/HE
Program version 1.8.0.0, 1.9.0.0 and 1.10.0.0 (http://docs.blhnobel.com/?id=3914)

G4 Weighing Instrument, Operating instructions, Quick installation PM/DT/HE
Program version 1.7.0.0 to 1.10.0.0 (http://docs.blhnobel.com/?id=3884)

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

Application Program Option:

To get the functionality described in this document following program option has to be activated:
Program Option 13: Belt Conveyor Scale.

The code will be delivered in a separate sheet for each CPU Serial Number.

Program options for Batching and Flow is Not enable in this program.

Hardware Requirements

This application program requires to have a module type with digital inputs in slot 1, where input 14 (I4 at module in slot 1) is dedicated for the pulse encoder and is not available for other configurations.

This application program requires to be used in G4 weighing instrument with graphical display (PM/HE).

General

This application software is developed for belt conveyor scale applications and calculates Belt flow rate, Belt speed rate and Total weight of the material that have passed the belt conveyor scale. The program can only be used in G4 weighing instrument with graphical display (PM/HE).

Following functions are added in this program:

- Operating display for belt conveyor that shows Belt flow rate, Gross weight of scale 1, Total weight and Belt speed rate.
- Select Belt flow rate or Belt speed rate as level supervision source, which can be used for digital outputs.
- Level status indication of the four first level supervisions selected as scale 1 in the display.
- Communicate Belt flow rate, Total weight and Belt speed rate via Modbus register and/or Fieldbus.
- Communicate Belt flow rate and Belt speed rate via analog outputs.
- Modbus command to set Total weight to zero.
- Dynamic Zeroing as average for one complete cycle of the belt.
- Zeroing Limits are extended to +-10 % of scale capacity.

Principle of calculation

Some idlers or a mechanically separated section are supported on load cells to get information of how much material that is on the belt. To know if, and how fast, the belt is running a pulse encoder assembled with a measuring wheel is installed and connected to the G4 instrument. For each input pulse the instrument adds gross weight divided by number of pulses per 'Effective Scale Length' to the Total weight. The Belt flow rate is then calculated as the difference in Total weight (Δw) during a derivation time divided by the Derivation time (Δt).

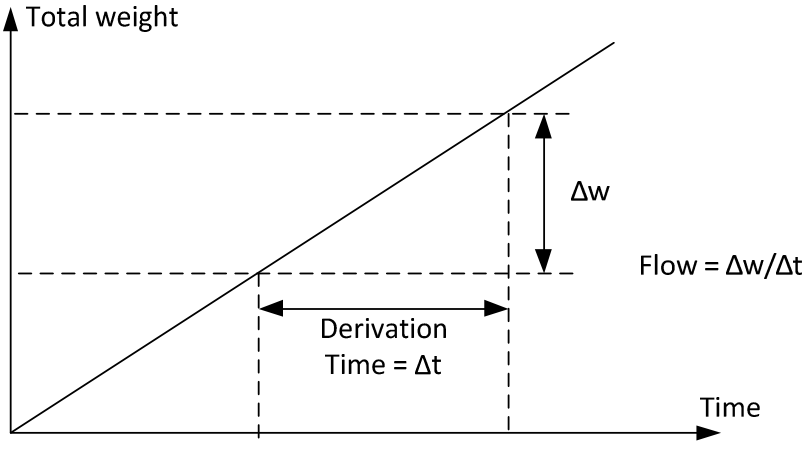

Figure: *Total weight over time.*

Belt conveyor scale mechanically types

There are different types of mechanically installations regarding Belt conveyor scales and for each type the load cells are affected by material on the belt different length. The length where the material on the belt is affecting the load cells is called ‘Effective scale length’. Some examples are shown below.

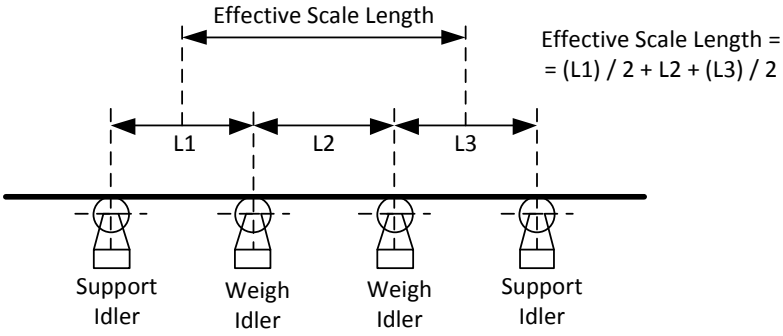

Figure: *Belt conveyor scale with load cells on idlers.*

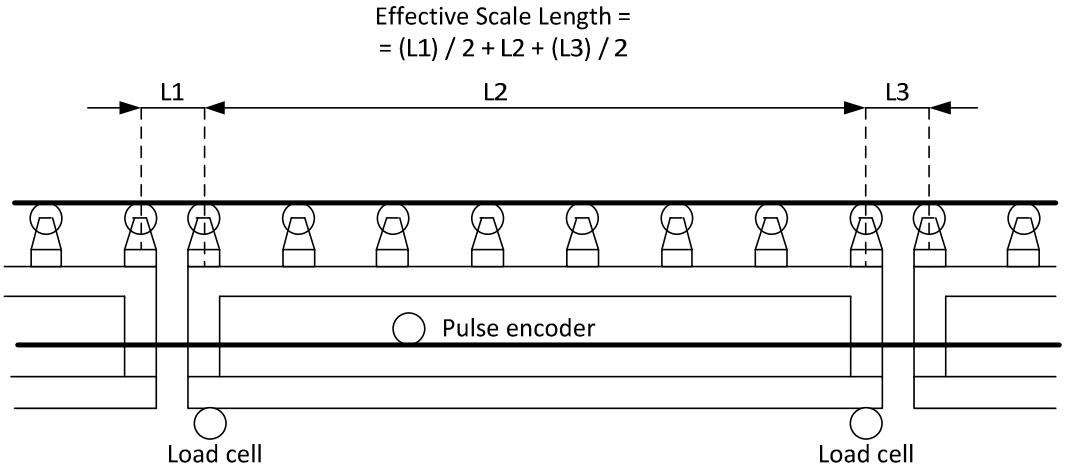

Figure: *Belt conveyor scale with mechanically separated section.*

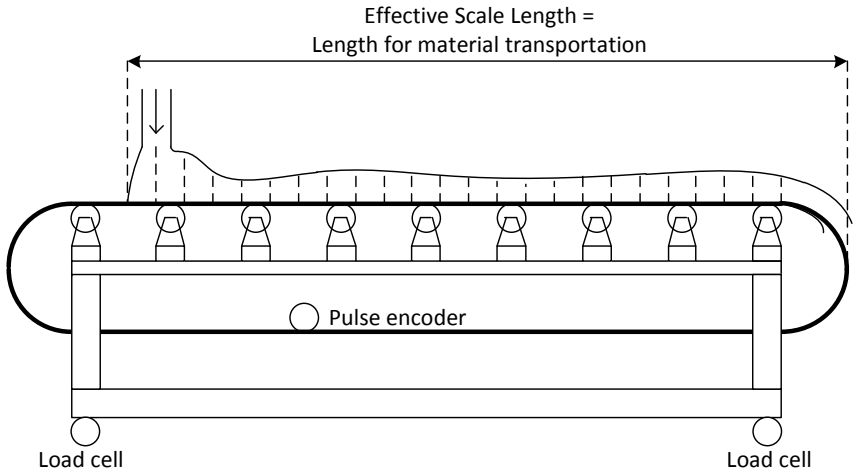

Figure: *Fully supported Belt conveyor scale.*

Connection of load cells

The application program for belt conveyor scale uses the weighing channel that is selected as Scale 1 in the Hardware config. The load cells shall be connected according to the G4 standard manuals.

Pulse Encoder

The pulse encoder shall be installed with a measuring wheel at the belt. When the belt is moving the measuring wheel and the pulse encoder shall rotate. When the pulse encoder is rotating it shall give 24VDC pulses (50% duty cycle) as a signal output. This signal output shall be connected to digital input I4 at slot 1 according to the figure below.

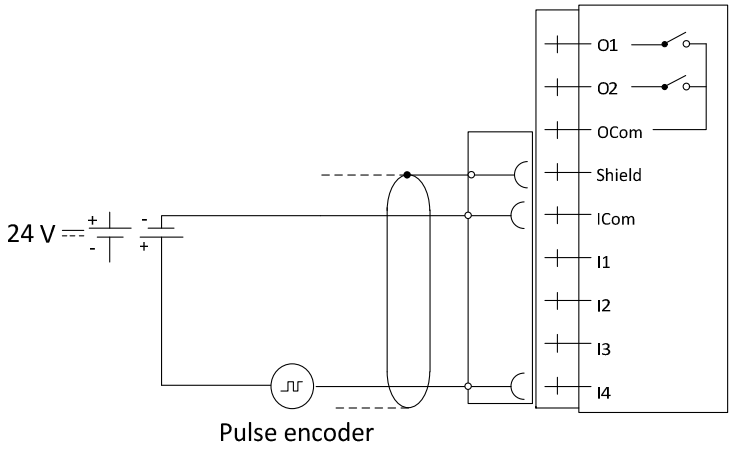

Figure: *Example of pulse encoder connection.*

The pulse encoder should be arranged to give max 80 Hz (50% duty cycle) at maximum belt speed.

Note: The instrument will give error code at frequencies over 80 Hz.

Example to Calculate Max Pulse Encoder PPR

Max Belt speed: 1 m/s

Select Measuring Wheel Circumference: 0,5 m

Pulse Encoder Frequency at max belt speed shall be around: 75 Hz (must be less than 80 Hz)

$$\boldsymbol{Max\ Pulses\ per\ Revolution\ (PPR)\ in\ Pulse\ Encoder} =$$

$$= \frac{\text{Encoder Frequency at max belt speed [Hz] x Measuring Wheel Circumference [m]}}{Max\ Belt\ speed\ [m/s]} =$$

$$= \frac{75\ Hz\ x\ 0{,}5\ m}{1\ m/s} = 37{,}5$$

Select a Pulse Encoder with for example 37 PPR.

Operating display for the Belt conveyor

If the option code (13) for 'Belt Conveyor Scale' function is entered the G4 will start up showing the 'BeltConv' operating display, where the Belt flow rate, Gross weight, Total weight and Belt speed rate are shown.

Four level indicators configured for scale 1 shows level number and level status.

If the weight on the belt conveyor is less than 'Min. Weight Flow Calc.' a status 'Min. Weight' will be displayed.

If the pulse frequency is lower than 1/' Max Time Between Pulses' a status 'LowPulseFreq' will be displayed.

If an error is detected the error codes will be displayed.

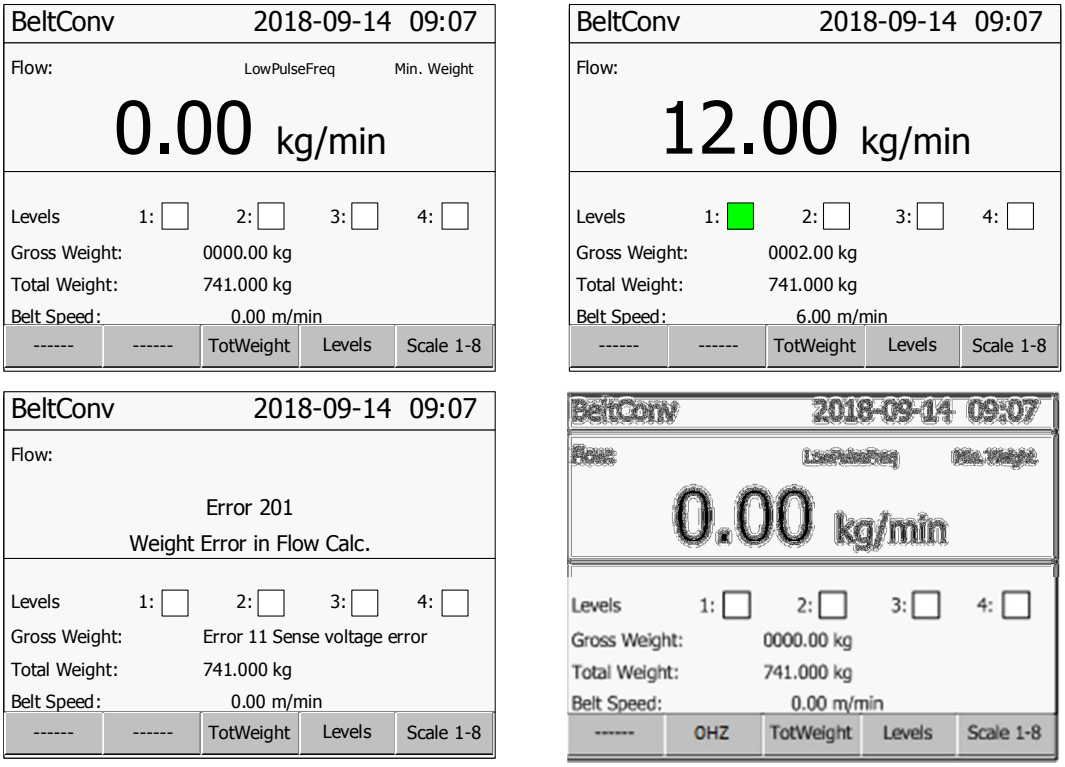

Figure: *Operating Window for Belt conveyor.*

By pressing the key 'TotWeight' (F3) a new window for Total Weight Scale 1 is displayed. In this window it is possible to zero Total weight by pressing the key 'Zero' (F3) or set Total weight to any value by pressing the key 'Edit' (F1) and write the value.

By pressing the key 'Levels' (F4) a window opens where all the configured levels for scale 1 are shown.

By pressing the key 'Scale 1-8' (F5) a window opens where scales are shown in the same way as in a normal weight indicator. The main menu is reached by pressing the 'Info' button when this window is displayed.

In the window for normal weight indicator there is a key 'BeltConv' (F1) that return to the 'BeltConv' operating display. This key and the belt conveyor scale operating display get the same name as the 'Instrument name'. If the 'Instrument name' is not assigned the key and belt conveyor operating display will be 'BeltConv'.

If the constant mode is set to On or IO, the key in position F2 will display the current speed or frequency value. Each buttonpress will increment the value by 10% where 100% is the value set for parameter Const. B. Speed, if the value is att 100%, the value will be set to 0% on next press.

Total Weight

Total weight is updated at every pulse (positive flank), if the weight is less than 'Min. Weight Flow Calc.' and if there are no errors:

$$Total\ weight\ = Total\ weight\ + \frac{Gross\ weight\ on\ belt\ conveyor\ scale}{No\ of\ pules\ at\ Effective\ scale\ lengt}$$

The unit for Total Weight is the same as 'Measurement Unit' for scale 1. The instrument is capable of storing Total Weight values up to 10 000 000 000 units with 3 decimals. When the limit is passed 10 000 000 000 will be subtracted from the value.

It is possible to zero or set any value to the Total Weight through the graphical display or via Modbus register. Total Weight can also be set to zero by a Modbus command written to the command register.

Belt Flow Rate

The belt flow rate is calculated as the difference in total weight during a derivation time divided by the derivation time and can be displayed in different units and resolutions see parameter set-up. The response time is equal to the derivation time and the belt flow rate value is updated ten times every derivation time.

Belt Speed

The belt speed is calculated through the pulses from the pulse encoder. The unit of measurement is m/min and the resolution is 0.05. The response time is 5 seconds and the value is updated every second.

Static Calibration of scale 1

The Belt conveyor scale has Scale 1 as weight source. Scale 1 shall be static calibrated according to G4 standard manuals.

Filter Window should be set to 999999.

Zero should be done when the belt conveyor is completely installed and without any material on the belt.

It is recommended to do a Dynamic Zeroing after the static calibration, see next section.

Dynamic Zeroing

After the static calibration a Dynamic zeroing can be done to set an average zero for a complete cycle of the belt. The belt must be empty and running at normal speed during the complete Dynamic zeroing.

Press the ‘Zero’ key when viewing the Belt Conveyor operator display.
Note that ‘Zero Key’ must be ‘On’ in Parameter Set-up\General menu.

A question “Start Dynamic Zeroing of Belt Scale?” will come up. Press Yes or No.

If Yes, the Dynamic zeroing will start and a progress window will be shown (% of total pulses, actual pulse counter and total number of pulses for one complete cycle).

When the progress is 100% the instrument will try to save the gross weight average for all pulses as a Zero correction. A message will be shown in the display if the value can be saved or not.

If the gross average value is within zeroing limits of +-10% of capacity (parameter) and the instrument is not in calibration mode the value will be saved. Press Ok to close the window.

If the average value is out of zeroing limits of +-10% of capacity (parameter) or in calibration mode it will fail. Press Ok to close the window.

The Dynamic Zeroing can be stopped when the Dynamic Zeroing is running by pressing Cancel.

An error message will be shown directly if a weight error or belt conveyor error will occur when a pulse is detected.

The Zero Correction Value in % can be shown in
Main menu\Maintenance\Diagnostic\Scales at Scale 1.

Following parameters needs to be configured for the actual pulse encoder and belt conveyor before a Dynamic Zeroing can be done correctly:

- Total belt length
- Encoder Pulses Per Revolutions
- Encoder Wheel Circumference

Note:

The value of Dynamic Zeroing (zero correction) will not be included in the Restore and Backup function.

Correction Factor

After the static calibration and the recommended Dynamic Zeroing the belt conveyor scale can be calibrated dynamically with a Correction factor.

The correction factor is the factor between the belt conveyor scale mechanics when the belt is running and the static calibration.

Run a known amount of material over the belt conveyor scale and then read the 'Total weight' value in the G4 instrument after all material have passed.

The correction factor is then calculated manually.

If actual correction factor is equal to 1 (one) the Correction Factor can be calculated as:

$$Correction\ Factor\ = \frac{Known\ amount\ of\ material}{Total\ weight\ value}$$

If the actual correction factor is Not equal to 1 (one) the Correction Factor can be calculated as:

$$New\ Corr.Factor\ = \frac{Known\ amount\ of\ material}{Total\ weight\ \ value}\ x\ Actual\ Corr.Factor$$

It is recommended to set Total Weight to 0 (zero) before running material over the belt scale, otherwise a differential between End value and Start value needs to be calculated.

It is also recommended to write down the old Correction Factor from earlier calibration to be able to go back to the same settings as before.

Parameter Set-up

To configure the belt conveyor functions some new parameters have been added in Parameter Set-up. The Parameter Set-up is reached with the 'Info' button when the instrument displays the weighing scales 'Scale 1-8' (not possible from the 'BeltConv' operating display).
From 'BeltConv' operating display, press key 'Scale 1-8' or 'Esc' and then key 'Info' (or key F11 on a connected USB keyboard.

New and changed parameters in Parameter Set-up

Menu 'Program Options'

Options 01: Flow and 02: Scale Batching have been deleted in the menu for program options and one new choice has been added.

Program Options

03: EtherNet/IP 13: Belt Conveyor Scale	One new choice: **13: Belt Conveyor Scale:** Option code 13 is required to activate the belt conveyor functions.

Parameter 'Calibration/Scale 1\Filter Window'

Parameter Filter Window for Scale 1 has changed default value to use unfiltered weight values all the time.

1:Filter Window

Range: 0 to 999999 Unit: Measurem. unit <999999>	The instrument produces unfiltered and filtered weight internally. If the difference between the filtered an unfiltered weight is less than 'Filter window' the filtered weight is used. This parameter value has one decimal more than parameter Resolution, to allow 'Filter window' to be smaller than the resolution.

Menu 'Calibration/Scale 1'

This menu has been extended with new parameters for the belt conveyor.

1: Belt Conveyor Functions

On Off <On>	Used to turn on and off the belt conveyor functions. ***On:*** *Belt conveyor functions are activated.* ***Off:*** *Belt conveyor functions are deactivated.* .

1: Belt Flow Rate Resolution

0.001 0.002 0.005 0.01 0.02 0.05 1 2 5 10 20 50 <0.02>	Defines the decimal point position and resolution format for the belt flow rate value.

1: Belt Flow Rate Unit

Unit/s Unit /min Unit /h Unit *1000/m Unit *1000/h < Unit /min>	Defines the engineering unit that should be used for the belt flow rate value and for related set-up parameters. Unit is equal to the 'Measurement Unit' for scale 1.

1:Deriv. Time Belt Flow

Range: 1 – 3600 Unit: s <5>	'Deriv. Time Belt Flow' is an abbreviation for Derivation Time Belt Flow. The belt flow rate is calculated as the difference in total weight during a derivation time divided by the derivation time. Longer derivation time gives a more stable and accurate belt flow rate value, but it will also give longer response time. The belt flow rate calculation will perform ten times every derivation time.

1:Total Belt Length

Range: 0.001 – 100000 Unit: m <100>	'Total Belt Length' is the length for one complete cycle of the belt. This parameter is used during the Dynamic Zeroing. The instrument will calculate the number of pulses for one complete cycle based on this and other parameters. Total belt length will normally be written in belt conveyor specification or can be measured at the belt conveyor.

1:Effective Scale Length

Range: 0.001 – 1000 Unit: m <1>	'Effective Scale Length' is the length where material at belt conveyor affects the load cells, see figures in section Belt conveyor scale mechanically types.

1:Encoder Pulses Per Rev.

Range: 0.01 – 10000 <50>	'Encoder Pulses Per Rev' is the number of pulses Per Revolutions (PPR) at the Pulse Encoder. PPR will normally be written on the Pulse Encoder or in the encoder specification.

1:Encoder Wheel Circumfer.

Range: 0.001 – 10 <0.5>	'Encoder Wheel Circumfer.' is the circumference of the measuring wheel assembled with the pulse encoder. Measuring wheel circumference will normally be written in the encoder specification.

1:Max Time Between Pulses

Range: 0.01 – 1 Unit: s <1>	'Max Time Between Pulses' decides when the instrument gives status for Low Frequency (low belt speed rate). If the parameter is set to 0.5 second, the instrument gives Low Pulse Frequency status when the pulse frequency is less than f=1/'Max Time Between Pulses' = 1/0,5 = 2 Hz. Low pulse frequency status will be shown on the Belt conveyor operating display and in the status register

1: Min. Weight Flow Calc.

Range: 0 – 1000 Unit: Measurement Unit' for scale 1. <2>	'Min. Weight Flow Calc' decides when the Total Weight should be accumulated, and thereby the belt flow rate calculation. If the gross weight on the belt conveyor is less than 'Min. Weight Flow Calc' the instrument indicates 'Min Weight' on the graphical display and in the status register It is possible to get signal for min weight on a digital output by setting the same Level as 'Min. Weight Flow Calc' at Level Supervision for Gross Weight and Scale 1

1:Correction factor

Range: 0.01 – 4 <1>	The correction factor is calculated manually by running a known amount of material over the belt conveyor divided by the difference in total weight value when the material has passed the belt conveyor. See also section Correction Factor.

1:Constant belt

Choices:	Defines how the belt speed should be generated.
Off	Off allows calculations as previously described in this document.
On	On allows to set a constant belt speed without needing any physical input signal to determine belt speed.
IO	IO allows for generating a pulse on analog output 1 that can be used to simulate a pulse encoder connected to the conveyor belt.

1:Const. B. Speed

Constant belt = Off	This parameter is not displayed.
Constant belt = On	Set a maximum constant belt speed for flow calculations. Range: 0.0-100.0 m/min
Constant belt = IO	Set a maximum frequency that will be generated on analog output 1 Range: 0-100 HZ

Menu Level Supervision/'Level XX Source'

The sub menus 'Level 1 Source' to 'Level 32 Source' have been added with two new choices. Flow and Abs. flow have been deleted.

Level XX Source

Not in use Net Weight Gross Weight Display Weight Abs.Net Weight Abs.Gross Weight Abs.Disp.Weight Belt Flow Rate Belt Speed Rate < Not in use >	Two new choices: **Belt Flow Rate:** The level operates on the Belt Flow Rate. **Belt Speed Rate:** The level operates on the Belt Speed Rate. **Note:** Belt Flow Rate and Belt Speed Rate are only working when Level XX Scale is 1.

Menu 'Analog Outputs'

The sub menus 'AOUT XX Source' have been added with two new choices. Flow has been deleted.

AOUT 'X' Source

Not in use Gross Weight Net Weight Disp. Weight Belt Flow Rate Belt Speed Rate < Not in use >	Two new choices: **Belt Flow Rate.** **Belt Speed Rate.** **Note:** Belt Flow Rate and Belt Speed Rate is only working when AOUT XX Scale is 1

Menu 'Fieldbus Data Block XX Type'

The sub menus 'Data Block 1 Type' to ' Data Block 12 Type' have been added with three new choices.

Data Block XX Type

Not In Use Gross Weight Net Weight Disp. Weight Flow Rate Input Signal Level Status Setp. Status Input Status Output Status Inp./Outp Status Lev./Setp Status AOUT1-4 Value AOUT1-2 Value AOUT3-4 Value Belt Flow Rate Belt Speed Rate Total Weight < Not In Use >	Three new choices: ***Belt Flow Rate:*** *The belt flow rate is transmitted in this Data Block. Floating point or Integer format.* ***Belt Speed Rate:*** *The belt speed rate is transmitted in this Data Block. Floating point or Integer format.* ***Total Weight:*** *The Total weight is transmitted in this Data Block. Floating point or Integer format.* Note: These parameters are only shown if parameter 'No Of Data Blocks' is set to 1 or greater.

Parameter 'Outputs/Outputs Slot 1\'

1:Output 11 Source (added parameter)

Conveyor Pulse	This parameter allows the Conveyor pulse to be output to the analog output 1.

New Modbus registers

New Modbus registers for Belt Conveyor scale have been added.

Data type: Integer	Data type: float (2 reg./value)	Explanation	R/W
41800 (1 reg)	45800	Belt Conveyor: Error Code	R
41801 (1 reg)	45802	Belt Conveyor: Status	R
41802 (3 reg)	45804	Belt Conveyor: Belt Flow Rate	R
41805 (3 reg)	45806	Belt Conveyor: Belt Speed Rate	R
41808 (2 reg)	45808	Belt Conveyor: current pulse for dynamic Zeroing	R
41810 (2 reg)	45810	Belt Conveyor: pulses for one belt revolution.(100% of pulses, dynamic zero)	R
43800 (3 reg)	47200	Belt Conveyor: Total Weight LOW	R/W
43803 (3 reg)	47202	Belt Conveyor: Total Weight HIGH	R/W

Total Weight is represented by two values (HIGH, LOW). To get the resulting value multiply value HIGH by 10000 and add value LOW. LOW is a value between ±9999.999 with 3 decimals. HIGH is a value without decimals between ±999999. To zero Total Weight, send 0 to both HIGH and LOW.

NOTE!

Both HIGH and LOW must be written in ONE Modbus message on order to change the value.

Status Bits for ‘Belt Conveyor: Status’

One Belt Conveyor Status register has been added to be used in Modbus registers or Fieldbus Data block.

Bits set to 1 in this register have the following meaning:

Bit no	Function	Comment
0	Belt Flow Rate > INT size	The Belt Flow Rate in ‘scaled integer’ format does not fit in one register. (See description of data representation in the standard manual.)
1	Belt Speed Rate > INT size	The Belt Speed Rate in ‘scaled integer’ format does not fit in one register. (See description of data representation in the standard manual.)
2		
3		
4		
5		
6		
7		
8	Min. Weight Flow Calc	Gross weight at Scale 1 is less than ‘Min Weight Flow Calc’.
9	Low Pulse Frequency	Indicates if the pulse frequency is lower than 1/’Max Time Between Pulses’.
10	Dynamic Zeroing Running	Indicates if the Dynamic Zeroing is Running.
11		
12	Belt Flow Rate > 6 digits	The Belt Flow Rate value is out of precision and should normally not be used.
13	Belt Speed Rate > 6 digits	The Belt Speed Rate value is out of precision and should normally not be used.
14		
15		

Note: If this register (bits) is read as float value,
see description of Data representation in the standard manual.

New Error Codes

Three new Error Codes have been added to be used in the Belt Conveyor Error Modbus registers or Fieldbus Data block.

Error code	Explanation
200	**Belt Conveyor Func. Off.** Indicates if the belt conveyor function is Off or if the option code 13: 'Belt Conveyor Scale' is not activated.
201	**Weight Error in Flow Calc.** Indicates if scale 1 has weight error (se error codes for scale 1 in standard manual) during the flow calculation. If this code occurs the Total Weight will not be accumulated and the belt flow rate is not valid.
202	**High Pulse Frequency**. Indicates if the pulse frequency is higher than 80 Hz (50% duty cycle). If this error occurs the Total Weight will not be accumulated and the belt flow rate and belt speed rate are not valid. When pulse frequency is below 50 Hz this error will disappear.

New Modbus command

One new Modbus-command has been added to be used in the command register (Integer 42000 or Float 46000) or as a command on the fieldbus.

Command	Action activated in instrument
220	Set Total Weight to zero, i.e. register for Belt Conveyor: Total Weight LOW and Belt Conveyor: Total Weight HIGH are set to zero.
221	Start the Dynamic zeroing process.
222	Stop the Dynamic zeroing process.

Data to the fieldbus (Inputs in the master)

Three new data block types have been added:

- Belt flow rate data, floating point or integer format
- Belt speed rate data, floating point or integer format
- Total weight data, floating point or integer format

Belt Flow Rate data block

Byte	Floating-point format	Integer format
Offset + 0	Belt Conveyor: Error code MSB	Belt Conveyor: Error code MSB
Offset + 1	Belt Conveyor: Error code	Belt Conveyor: Error code
Offset + 2	Belt Conveyor: Error code	Belt Conveyor: Status MSB
Offset + 3	Belt Conveyor: Error code	Belt Conveyor: Status
Offset + 4	Belt Conveyor: Status MSB	Belt Flow Rate Data, int MSB
Offset + 5	Belt Conveyor: Status	Belt Flow Rate Data, int
Offset + 6	Belt Conveyor Status	Belt Flow Rate Data, int
Offset + 7	Belt Conveyor: Status	Belt Flow Rate Data, int
Offset + 8	Belt Flow Rate Data MSB	Belt Flow Rate Data, dec MSB
Offset + 9	Belt Flow Rate Data	Belt Flow Rate Data, dec
Offset + 10	Belt Flow Rate Data	Not used
Offset + 11	Belt Flow Rate Data	Not used
Offset + 12	Not used	Not used
Offset + 13	Not used	Not used
Offset + 14	Not used	Not used
Offset + 15	Not used	Not used

The table above describes the data block format if the parameter ‘Data Block N Format’ is set to ‘Floating point’ or ‘Integer’ where ‘N‘ stands for the index of the Data Block (1 – 12).

Belt Speed Rate data block

Byte	Floating-point format	Integer format
Offset + 0	Belt Conveyor: Error code MSB	Belt Conveyor: Error code MSB
Offset + 1	Belt Conveyor: Error code	Belt Conveyor: Error code
Offset + 2	Belt Conveyor: Error code	Belt Conveyor: Status MSB
Offset + 3	Belt Conveyor: Error code	Belt Conveyor: Status
Offset + 4	Belt Conveyor: Status MSB	Belt Speed Rate Data, int MSB
Offset + 5	Belt Conveyor: Status	Belt Speed Rate Data, int
Offset + 6	Belt Conveyor Status	Belt Speed Rate Data, int
Offset + 7	Belt Conveyor: Status	Belt Speed Rate Data, int
Offset + 8	Belt Speed Rate Data MSB	Belt Speed Rate Data, dec MSB
Offset + 9	Belt Speed Rate Data	Belt Speed Rate Data, dec
Offset + 10	Belt Speed Rate Data	Not used
Offset + 11	Belt Speed Rate Data	Not used
Offset + 12	Not used	Not used
Offset + 13	Not used	Not used
Offset + 14	Not used	Not used
Offset + 15	Not used	Not used

The table above describes the data block format if the parameter ‘Data Block N Format’ is set to ‘Floating point’ or ‘Integer’ where ‘N‘ stands for the index of the Data Block (1 – 12).

Total Weight data block

Byte	Floating-point format	Integer format
Offset + 0	Total Weight LOW MSB	Total Weight LOW, int MSB
Offset + 1	Total Weight LOW	Total Weight LOW, int
Offset + 2	Total Weight LOW	Total Weight LOW, int
Offset + 3	Total Weight LOW	Total Weight LOW, int
Offset + 4	Total Weight HIGH MSB	Total Weight LOW, dec MSB
Offset + 5	Total Weight HIGH	Total Weight LOW, dec
Offset + 6	Total Weight HIGH	Total Weight HIGH, int MSB
Offset + 7	Total Weight HIGH	Total Weight HIGH, int
Offset + 8	Not used MSB	Total Weight HIGH, int
Offset + 9	Not used	Total Weight HIGH, int
Offset + 10	Not used	Total Weight HIGH, dec MSB
Offset + 11	Not used	Total Weight HIGH, dec
Offset + 12	Not used	Not used
Offset + 13	Not used	Not used
Offset + 14	Not used	Not used
Offset + 15	Not used	Not used

The table above describes the data block format if the parameter 'Data Block N Format' is set to 'Floating point' or 'Integer' where 'N' stands for the index of the Data Block (1 – 12).

Total Weight is represented by two values (HIGH, LOW). To get the resulting value multiply value HIGH by 10000 and add value LOW. LOW is a value between ±9999.999 with 3 decimals. HIGH is a value without decimals between ±999999. To zero Total Weight, send 0 to both HIGH and LOW.

PG4MI_1_9_155_1_E1R0

Vishay Nobel AB

Box 423, SE-691 27 Karlskoga, Sweden

Phone +46 586 63000 · Fax +46 586 63099

blhnobel.se@vpgsensors.com

www.blhnobel.com