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Dynacontrol v6 Profinet solution

(Part No. 121436)

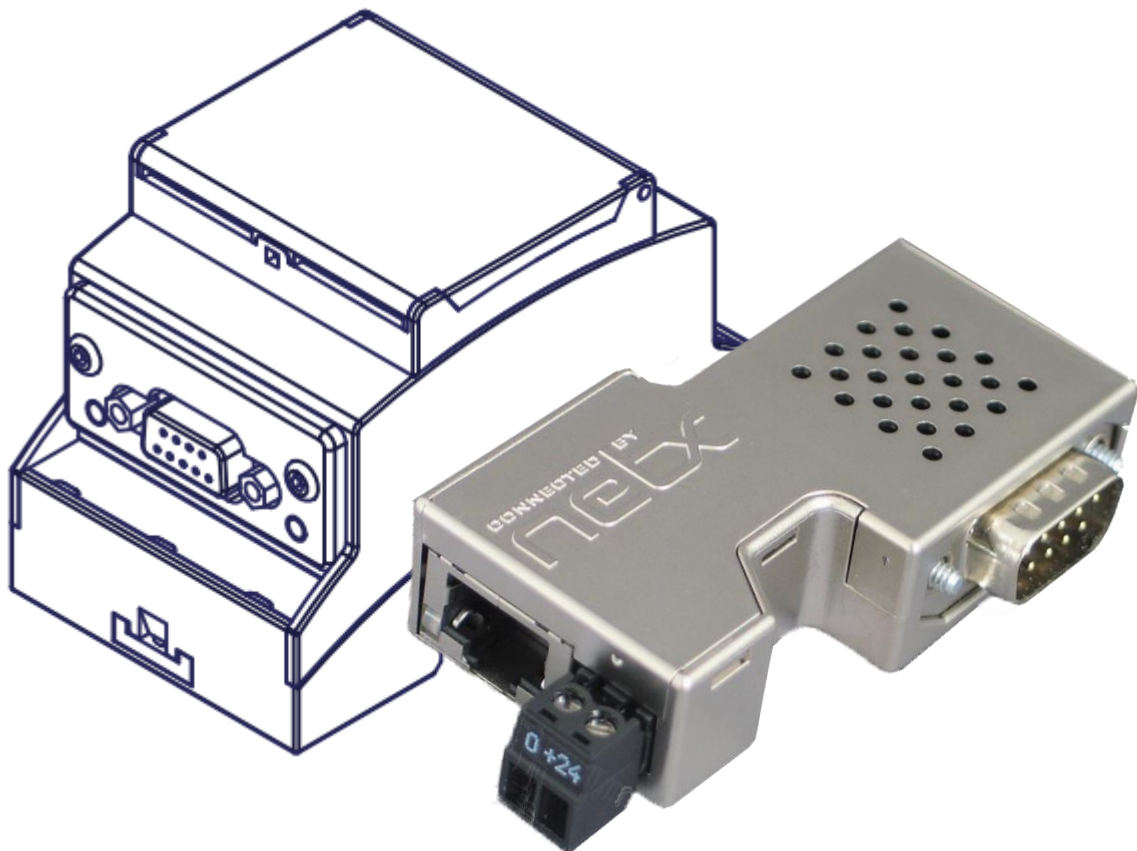


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System Description

The Dynacontrol v6 Profinet solution via Hilscher Gateway allows all Dynacontrol v6 based melt units to be integrated into bigger systems by remote control of the melt unit.

Hardware Installation

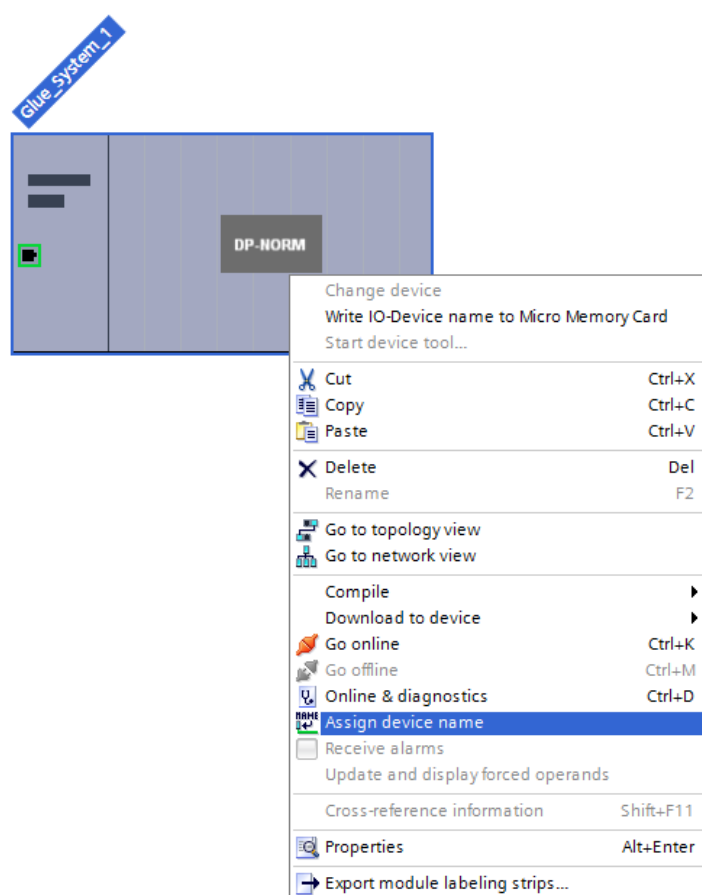
The Dynacontrol v6 Profibus Module is attached to the Dynacontrol v6 Series modular system. The Hilscher Gateway is attached to this Profibus Gateway via a 270° connector (9 pin Sub-D). With the Profinet connector the Gateway can be connected with a Profinet compatible PLC.

Software Installation

Please use the settings in the Dynacontrol Menu to select the Profibus address (it's always 7).
Please wait 1 minute after entering the new address and recycle main power for the new address to be accepted.

Refer to your Dynacontrol manual for further information where to find the menu entry as this is dependent on the equipped HMI.

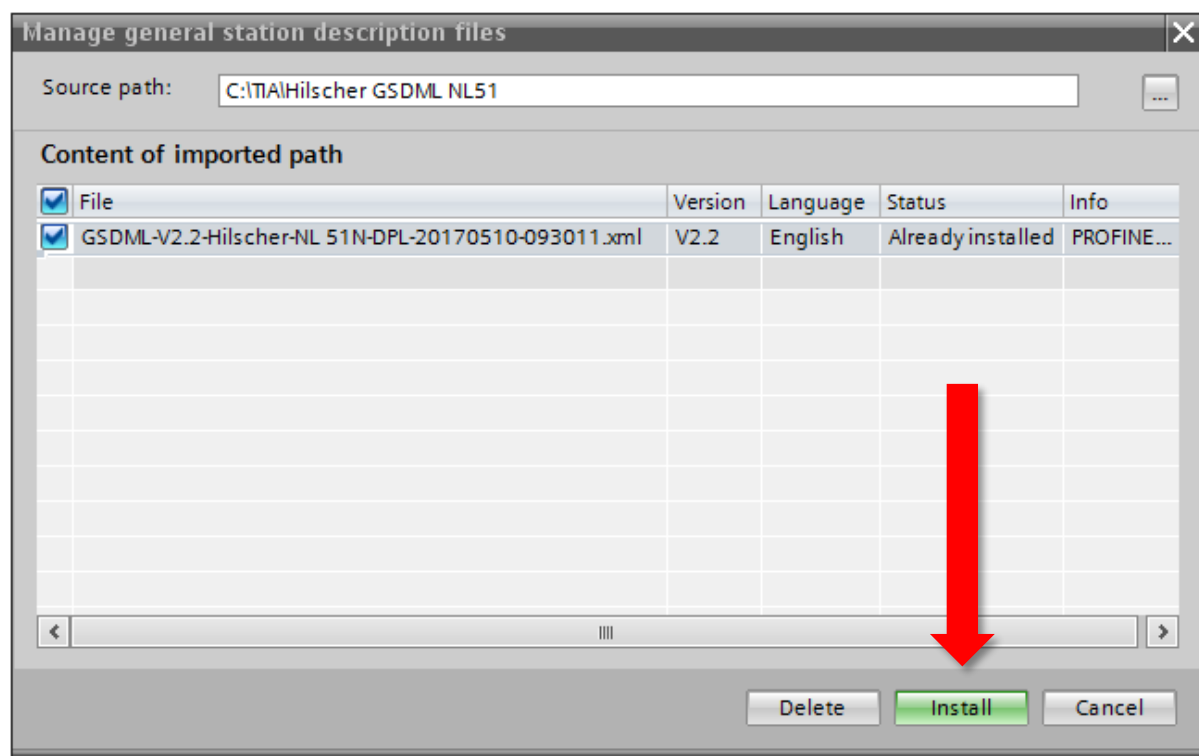
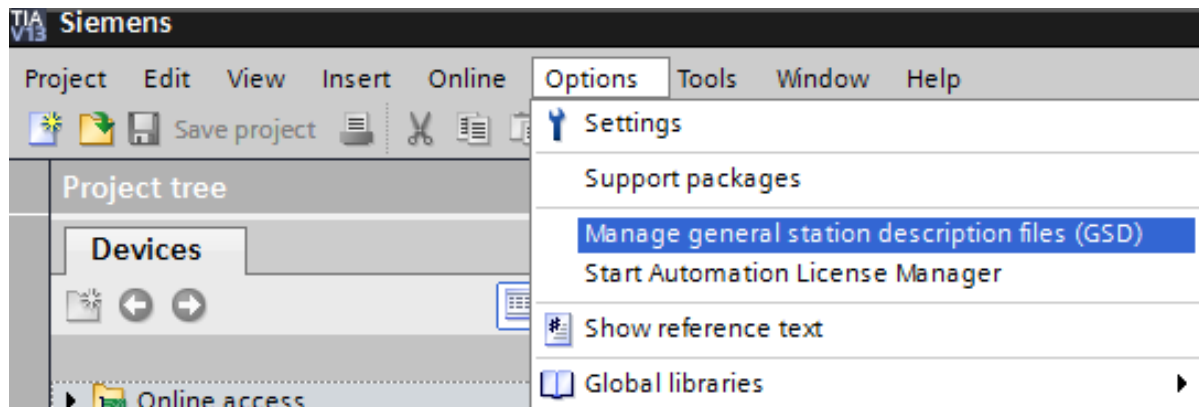
The IP-Address and the Profinet name for the Gateway can be assigned with TIA Portal or classic Step 7 software.



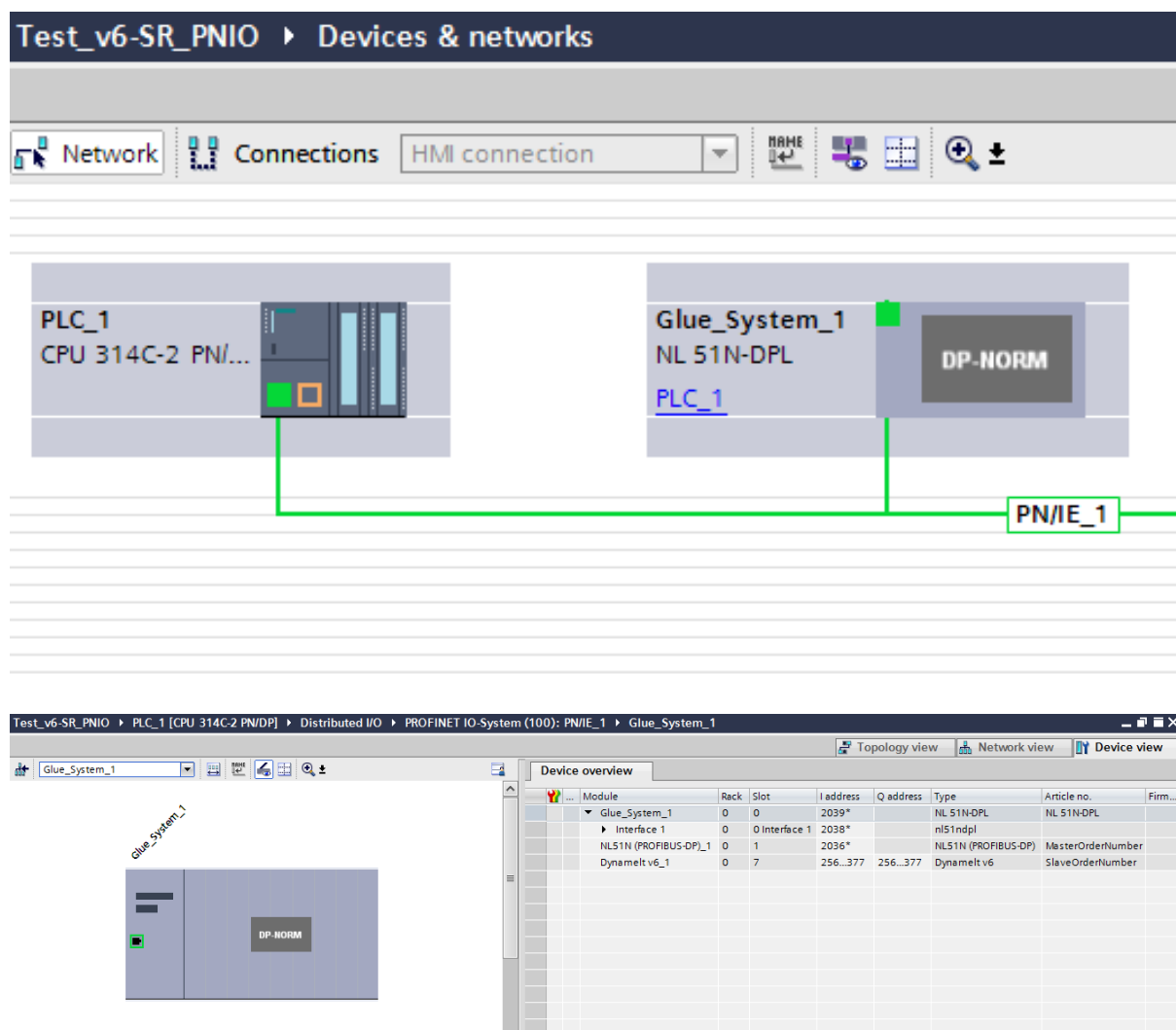
Setting up Communication

TIA Portal V13 Hardware Manager

To use the Dynatec v6 Template, please import the GSD file that comes with the Profinet kit.



The module can then be placed in the hardware project and attached to the Profinet net.



The overall data size of the module is 61 words (122 bytes) input and output.

When you insert the Hilscher NL 51 device into your project and assign them to your PLC, everything sets up automatically.

PLC Functionality

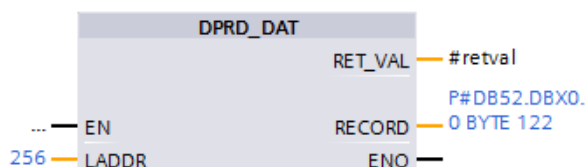
Introduction

The easiest way to start is to open the supplied sample program and see, how the system works. Most of the upcoming questions can be answered by importing structures or parts of the sample application.

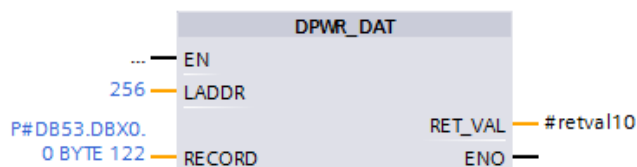
Getting and Sending Data

To send and get data from the Dynacontrol v6 unit, the DPRD_DAT and DPWR_DAT communication blocks have to be used and called in the main loop.

The used addresses have to reflect the addresses in the Hardware Configuration settings.



The same goes for the writing of the data back to the unit.



The source/destination address areas have to have enough room for the transmitted/received data. The easiest way is to copy the UDT structures (UDT V6IN/V6OUT) from the supplied sample program into the project as the naming of the parameters is still in place.

Received Data Block

The received data (from the Dynacontrol v6) is automatically transferred into a data block (DB). The structure of the data block is defined by UDT_V6IN. Not all of the values might be used depending on the current system configuration. If – for example – the level sensor is not equipped, the content of the level sensor status has to be ignored.

DB_Read-Data								
	Name	Data type	Offset	Start value	Retain	Visible in HMI	Setpoint	Comment
1	Static				☐	☐	☐	
2	DATA_IN	"UDT_V6IN"	0.0		☒	☒	☐	
3	RES0	Word	0.0	16#0	☒	☒	☐	Reserved
4	RES1	Word	2.0	16#0	☒	☒	☐	Reserved
5	RUN2	Bool	4.0	false	☒	☒	☐	Pump 2 Running
6	RUN3	Bool	4.1	false	☒	☒	☐	Pump 3 Running
7	RUN4	Bool	4.2	false	☒	☒	☐	Pump 4 Running
8	RUN5	Bool	4.3	false	☒	☒	☐	Pump 5 Running
9	RUN6	Bool	4.4	false	☒	☒	☐	Pump 6 Running
10	RUN7	Bool	4.5	false	☒	☒	☐	Pump 7 Running
11	RUN8	Bool	4.6	false	☒	☒	☐	Pump 8 Running
12	RUN9	Bool	4.7	false	☒	☒	☐	Pump 9 Running
13	W_DOG	Bool	5.0	false	☒	☒	☐	Watchdog
14	RDY	Bool	5.1	false	☒	☒	☐	System in Ready Condition
15	FAULT	Bool	5.2	false	☒	☒	☐	System in Fault Condition
16	ALM	Bool	5.3	false	☒	☒	☐	System in Alarm Condition
17	SYS_ON	Bool	5.4	false	☒	☒	☐	System in On Condition
18	STDBY	Bool	5.5	false	☒	☒	☐	System in Standby Condition
19	LOW	Bool	5.6	false	☒	☒	☐	Adhesive Low
20	RUN1	Bool	5.7	false	☒	☒	☐	Pump 1 Running

The first two words are reserved and should not be used.
They are reserved for other fieldbus protocols and exist for compatibility reasons.

Pump Activity Bits

Bits DBX 4.0-4.7 and DBX 5.7 give the current pump status.
"TRUE" means that the pump is running, "FALSE" means it is not running.

Watchdog

Bit DBX 5.0 is toggled from the Dynacontrol v6 every 0.5s. This can be evaluated in the PLC to guarantee a working field bus link. The same signal has also to be transferred back to the Dynacontrol v6 to allow monitoring of the other field bus direction (see ***).

Status Bits

Bits DBX 5.1-5.6 show certain status from the Dynacontrol v6. The meaning of the different status is given in the comment line and self-explaining. A "TRUE" of the ready signal means, that all zones of the system are heated up according to the set points and alarm windows and the system is ready to run.

22			LINESPEED	Int	8.0	0				Global System Linespeed (0..1000 = 0..100%)
23			PRESS_ACT1	Int	10.0	0				Actual Pressure (0..1000 = 0..100,0 bar/0..1000 psi), BIT15=FAULT
24			PRESS_ACT2	Int	12.0	0				Actual Pressure (0..1000 = 0..100,0 bar/0..1000 psi), BIT15=FAULT
25			PRESS_ACT3	Int	14.0	0				Actual Pressure (0..1000 = 0..100,0 bar/0..1000 psi), BIT15=FAULT
26			PRESS_ACT4	Int	16.0	0				Actual Pressure (0..1000 = 0..100,0 bar/0..1000 psi), BIT15=FAULT
27			PRESS_ACT5	Int	18.0	0				Actual Pressure (0..1000 = 0..100,0 bar/0..1000 psi), BIT15=FAULT
28			PRESS_ACT6	Int	20.0	0				Actual Pressure (0..1000 = 0..100,0 bar/0..1000 psi), BIT15=FAULT
29			PRESS_ACT7	Int	22.0	0				Actual Pressure (0..1000 = 0..100,0 bar/0..1000 psi), BIT15=FAULT
30			PRESS_ACT8	Int	24.0	0				Actual Pressure (0..1000 = 0..100,0 bar/0..1000 psi), BIT15=FAULT
31			PRESS_ACT9	Int	26.0	0				Actual Pressure (0..1000 = 0..100,0 bar/0..1000 psi), BIT15=FAULT
32			RES28	Word	28.0	16#0				Reserved
33			MOTOR_ACT1	Int	30.0	0				Motor Actual Speed (0..1000 = 0..100rpm)
34			MOTOR_ACT2	Int	32.0	0				Motor Actual Speed (0..1000 = 0..100rpm)
35			MOTOR_ACT3	Int	34.0	0				Motor Actual Speed (0..1000 = 0..100rpm)
36			MOTOR_ACT4	Int	36.0	0				Motor Actual Speed (0..1000 = 0..100rpm)
37			MOTOR_ACT5	Int	38.0	0				Motor Actual Speed (0..1000 = 0..100rpm)
38			MOTOR_ACT6	Int	40.0	0				Motor Actual Speed (0..1000 = 0..100rpm)
39			MOTOR_ACT7	Int	42.0	0				Motor Actual Speed (0..1000 = 0..100rpm)
40			MOTOR_ACT8	Int	44.0	0				Motor Actual Speed (0..1000 = 0..100rpm)
41			MOTOR_ACT9	Int	46.0	0				Motor Actual Speed (0..1000 = 0..100rpm)

Linespeed

DBW 8 holds the current global line speed value. This value is given in %x10 meaning that a maximum value of 1000 equals to 100.0% of main machine line speed. Please remember, that global line speed might be ignored for certain pumps if attached to a local analog input or remotely controlled via field bus.

Actual Pressure (Primary Pressure Ports)

Every pump has a primary pressure port. The DBW 10-26 hold the actual values of these pressure ports. The unit can be either bar (x10) or psi depending on the setting inside the transmitted data block. If the unit is set to bar, the value is 10x the actual value (1000 = 100.0 bar). If the highest bit is set (BIT15), the sensor is not responding (the sensor is 4-20mA, a value of <2mA triggers the FAULT bit).

Pump Speed

The pump speed of every motor can be read by getting the values DBW 30-46. The value has a factor of 10, so 1000 means 100.0 rpm.

Last Successful Received Parameter Block

43			LAST_REC_UID	Int	50.0	0				Last Successful Received Parameter Block
----	---	---	--------------	-----	------	---	---	---	---	--

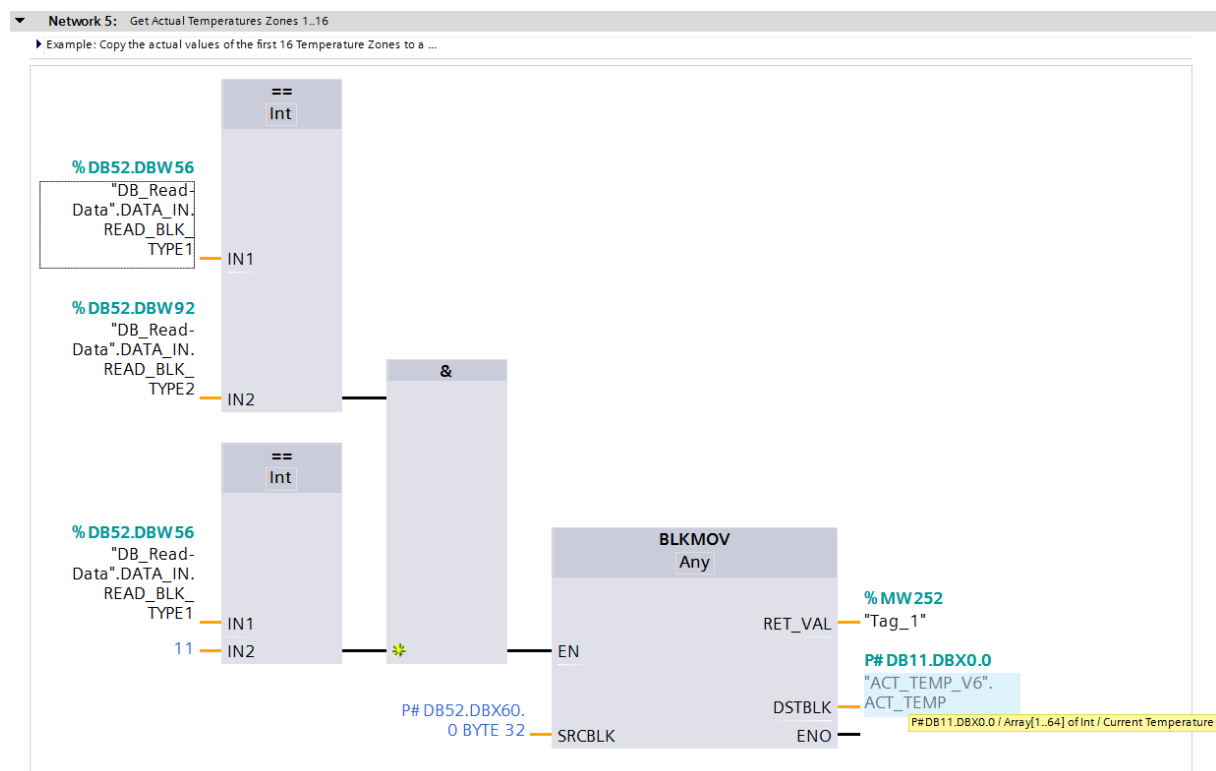
DBW 50 holds the ID of the last successful received parameter block. See page 28 for further details about custom write blocks.

Exchangeable Read Data Frame

46			READ_BLK_TYPE1	Int	56.0	0				Read Parameter Block Type
47			READ_BLK_UID	Int	58.0	0				Read Parameter UID
48			READ_DATA_1	Int	60.0	0				Read Data
49			READ_DATA_2	Int	62.0	0				Read Data
50			READ_DATA_3	Int	64.0	0				Read Data
51			READ_DATA_4	Int	66.0	0				Read Data
52			READ_DATA_5	Int	68.0	0				Read Data
53			READ_DATA_6	Int	70.0	0				Read Data
54			READ_DATA_7	Int	72.0	0				Read Data
55			READ_DATA_8	Int	74.0	0				Read Data
56			READ_DATA_9	Int	76.0	0				Read Data
57			READ_DATA_10	Int	78.0	0				Read Data
58			READ_DATA_11	Int	80.0	0				Read Data
59			READ_DATA_12	Int	82.0	0				Read Data
60			READ_DATA_13	Int	84.0	0				Read Data
61			READ_DATA_14	Int	86.0	0				Read Data
62			READ_DATA_15	Int	88.0	0				Read Data
63			READ_DATA_16	Int	90.0	0				Read Data
64			READ_BLK_TYPE2	Int	92.0	0				Read Parameter Block Type (copy of 32.0)

To support multiple information blocks inside the limited field bus size, an exchangeable data frame is transmitted. The data to be received is periodically exchanged (default) or defined by the PLC software.

If DBW 56 and DBW 92 are equal, the value of DBW 56/92 defines the content of the words DBW 60-90 (16 words). Inside the PLC program the values have to be copied to the proper destination if wanted:



Exchangeable Read Block Types

The following exchangeable read blocks are defined:

BLK Type	2
Read Parameter # 1	System Status ²
Read Parameter # 2	Global Error Word
Read Parameter # 3	Ready Progress (0..1000 = 0..100,0%)
Read Parameter # 4	Hour Counter LO-Word
Read Parameter # 5	Hour Counter HI-Word
Read Parameter # 6	Piston Pump 1 Stroke Counter LO-Word
Read Parameter # 7	Piston Pump 1 Stroke Counter HI-Word
Read Parameter # 8	Status Digital Inputs/Outputs ³
Read Parameter # 9	Level Sensor Fill Level (0..1000=0..100,0%)
Read Parameter # 10	Extended System Status ⁴
Read Parameter # 11	
Read Parameter # 12	
Read Parameter # 13	
Read Parameter # 14	
Read Parameter # 15	
Read Parameter # 16	

² System Status in Binary Encoded:

BIT0: System On
 BIT1: System Standby
 BIT2: System Sleep
 BIT3: System Alarm
 BIT4: System Fault
 BIT5: System Ready
 BIT6: System Warning
 BIT7: System Overtemperature
 BIT8: Hopper Empty
 BIT9: Global Error Message Present
 BIT13: System in Remote Mode (Fieldbus)
 BIT15: System waiting for Alarm Acknowledge

³ Status Digital In/Out

<- BIT0: IN1
 <- BIT1: IN2
 <- BIT2: IN3
 <- BIT3: IN4
 <- BIT4: IN5
 <- BIT5: IN6
 <- BIT6: MOTFAIL
 <- BIT7: OVERTEMP
 -> BIT8: RELAIS1
 -> BIT9: RELAIS2
 -> BIT10: RELAIS3
 -> BIT11: POWER CONTACTOR
 -> BIT12: MOTOR START

⁴ Extended System Status

BIT0: Reserved
 BIT1: E-Stop active
 BIT2: Heat Soak Time running
 BIT15: Reserved

BLK Type	11
Read Parameter # 1	Actual Temperature (°C/°F) Zone 1
Read Parameter # 2	Actual Temperature (°C/°F) Zone 2
Read Parameter # 3	Actual Temperature (°C/°F) Zone 3
Read Parameter # 4	Actual Temperature (°C/°F) Zone 4
Read Parameter # 5	Actual Temperature (°C/°F) Zone 5
Read Parameter # 6	Actual Temperature (°C/°F) Zone 6
Read Parameter # 7	Actual Temperature (°C/°F) Zone 7
Read Parameter # 8	Actual Temperature (°C/°F) Zone 8
Read Parameter # 9	Actual Temperature (°C/°F) Zone 9
Read Parameter # 10	Actual Temperature (°C/°F) Zone 10
Read Parameter # 11	Actual Temperature (°C/°F) Zone 11
Read Parameter # 12	Actual Temperature (°C/°F) Zone 12
Read Parameter # 13	Actual Temperature (°C/°F) Zone 13
Read Parameter # 14	Actual Temperature (°C/°F) Zone 14
Read Parameter # 15	Actual Temperature (°C/°F) Zone 15
Read Parameter # 16	Actual Temperature (°C/°F) Zone 16

BLK Type	12
Read Parameter # 1	Actual Temperature (°C/°F) Zone 17
Read Parameter # 2	Actual Temperature (°C/°F) Zone 18
Read Parameter # 3	Actual Temperature (°C/°F) Zone 19
Read Parameter # 4	Actual Temperature (°C/°F) Zone 20
Read Parameter # 5	Actual Temperature (°C/°F) Zone 21
Read Parameter # 6	Actual Temperature (°C/°F) Zone 22
Read Parameter # 7	Actual Temperature (°C/°F) Zone 23
Read Parameter # 8	Actual Temperature (°C/°F) Zone 24
Read Parameter # 9	Actual Temperature (°C/°F) Zone 25
Read Parameter # 10	Actual Temperature (°C/°F) Zone 26
Read Parameter # 11	Actual Temperature (°C/°F) Zone 27
Read Parameter # 12	Actual Temperature (°C/°F) Zone 28
Read Parameter # 13	Actual Temperature (°C/°F) Zone 29
Read Parameter # 14	Actual Temperature (°C/°F) Zone 30
Read Parameter # 15	Actual Temperature (°C/°F) Zone 31
Read Parameter # 16	Actual Temperature (°C/°F) Zone 32

BLK Type	13
Read Parameter # 1	Actual Temperature (°C/°F) Zone 33
Read Parameter # 2	Actual Temperature (°C/°F) Zone 34
Read Parameter # 3	Actual Temperature (°C/°F) Zone 35
Read Parameter # 4	Actual Temperature (°C/°F) Zone 36
Read Parameter # 5	Actual Temperature (°C/°F) Zone 37
Read Parameter # 6	Actual Temperature (°C/°F) Zone 38
Read Parameter # 7	Actual Temperature (°C/°F) Zone 39
Read Parameter # 8	Actual Temperature (°C/°F) Zone 40
Read Parameter # 9	Actual Temperature (°C/°F) Zone 41
Read Parameter # 10	Actual Temperature (°C/°F) Zone 42
Read Parameter # 11	Actual Temperature (°C/°F) Zone 43
Read Parameter # 12	Actual Temperature (°C/°F) Zone 44
Read Parameter # 13	Actual Temperature (°C/°F) Zone 45
Read Parameter # 14	Actual Temperature (°C/°F) Zone 46
Read Parameter # 15	Actual Temperature (°C/°F) Zone 47
Read Parameter # 16	Actual Temperature (°C/°F) Zone 48

BLK Type	14
Read Parameter # 1	Actual Temperature (°C/°F) Zone 49
Read Parameter # 2	Actual Temperature (°C/°F) Zone 50
Read Parameter # 3	Actual Temperature (°C/°F) Zone 51
Read Parameter # 4	Actual Temperature (°C/°F) Zone 52
Read Parameter # 5	Actual Temperature (°C/°F) Zone 53
Read Parameter # 6	Actual Temperature (°C/°F) Zone 54
Read Parameter # 7	Actual Temperature (°C/°F) Zone 55
Read Parameter # 8	Actual Temperature (°C/°F) Zone 56
Read Parameter # 9	Actual Temperature (°C/°F) Zone 57
Read Parameter # 10	Actual Temperature (°C/°F) Zone 58
Read Parameter # 11	Actual Temperature (°C/°F) Zone 59
Read Parameter # 12	Actual Temperature (°C/°F) Zone 60
Read Parameter # 13	Actual Temperature (°C/°F) Zone 61
Read Parameter # 14	Actual Temperature (°C/°F) Zone 62
Read Parameter # 15	Actual Temperature (°C/°F) Zone 63
Read Parameter # 16	Actual Temperature (°C/°F) Zone 64

BLK Type	21
Read Parameter # 1	Current Temperature Setpoint (°C/°F) Zone 1
Read Parameter # 2	Current Temperature Setpoint (°C/°F) Zone 2
Read Parameter # 3	Current Temperature Setpoint (°C/°F) Zone 3
Read Parameter # 4	Current Temperature Setpoint (°C/°F) Zone 4
Read Parameter # 5	Current Temperature Setpoint (°C/°F) Zone 5
Read Parameter # 6	Current Temperature Setpoint (°C/°F) Zone 6
Read Parameter # 7	Current Temperature Setpoint (°C/°F) Zone 7
Read Parameter # 8	Current Temperature Setpoint (°C/°F) Zone 8
Read Parameter # 9	Current Temperature Setpoint (°C/°F) Zone 9
Read Parameter # 10	Current Temperature Setpoint (°C/°F) Zone 10
Read Parameter # 11	Current Temperature Setpoint (°C/°F) Zone 11
Read Parameter # 12	Current Temperature Setpoint (°C/°F) Zone 12
Read Parameter # 13	Current Temperature Setpoint (°C/°F) Zone 13
Read Parameter # 14	Current Temperature Setpoint (°C/°F) Zone 14
Read Parameter # 15	Current Temperature Setpoint (°C/°F) Zone 15
Read Parameter # 16	Current Temperature Setpoint (°C/°F) Zone 16

BLK Type	22
Read Parameter # 1	Current Temperature Setpoint (°C/°F) Zone 17
Read Parameter # 2	Current Temperature Setpoint (°C/°F) Zone 18
Read Parameter # 3	Current Temperature Setpoint (°C/°F) Zone 19
Read Parameter # 4	Current Temperature Setpoint (°C/°F) Zone 20
Read Parameter # 5	Current Temperature Setpoint (°C/°F) Zone 21
Read Parameter # 6	Current Temperature Setpoint (°C/°F) Zone 22
Read Parameter # 7	Current Temperature Setpoint (°C/°F) Zone 23
Read Parameter # 8	Current Temperature Setpoint (°C/°F) Zone 24
Read Parameter # 9	Current Temperature Setpoint (°C/°F) Zone 25
Read Parameter # 10	Current Temperature Setpoint (°C/°F) Zone 26
Read Parameter # 11	Current Temperature Setpoint (°C/°F) Zone 27
Read Parameter # 12	Current Temperature Setpoint (°C/°F) Zone 28
Read Parameter # 13	Current Temperature Setpoint (°C/°F) Zone 29
Read Parameter # 14	Current Temperature Setpoint (°C/°F) Zone 30
Read Parameter # 15	Current Temperature Setpoint (°C/°F) Zone 31
Read Parameter # 16	Current Temperature Setpoint (°C/°F) Zone 32

BLK Type	23
Read Parameter # 1	Current Temperature Setpoint (°C/°F) Zone 33
Read Parameter # 2	Current Temperature Setpoint (°C/°F) Zone 34
Read Parameter # 3	Current Temperature Setpoint (°C/°F) Zone 35
Read Parameter # 4	Current Temperature Setpoint (°C/°F) Zone 36
Read Parameter # 5	Current Temperature Setpoint (°C/°F) Zone 37
Read Parameter # 6	Current Temperature Setpoint (°C/°F) Zone 38
Read Parameter # 7	Current Temperature Setpoint (°C/°F) Zone 39
Read Parameter # 8	Current Temperature Setpoint (°C/°F) Zone 40
Read Parameter # 9	Current Temperature Setpoint (°C/°F) Zone 41
Read Parameter # 10	Current Temperature Setpoint (°C/°F) Zone 42
Read Parameter # 11	Current Temperature Setpoint (°C/°F) Zone 43
Read Parameter # 12	Current Temperature Setpoint (°C/°F) Zone 44
Read Parameter # 13	Current Temperature Setpoint (°C/°F) Zone 45
Read Parameter # 14	Current Temperature Setpoint (°C/°F) Zone 46
Read Parameter # 15	Current Temperature Setpoint (°C/°F) Zone 47
Read Parameter # 16	Current Temperature Setpoint (°C/°F) Zone 48

BLK Type	24
Read Parameter # 1	Current Temperature Setpoint (°C/°F) Zone 49
Read Parameter # 2	Current Temperature Setpoint (°C/°F) Zone 50
Read Parameter # 3	Current Temperature Setpoint (°C/°F) Zone 51
Read Parameter # 4	Current Temperature Setpoint (°C/°F) Zone 52
Read Parameter # 5	Current Temperature Setpoint (°C/°F) Zone 53
Read Parameter # 6	Current Temperature Setpoint (°C/°F) Zone 54
Read Parameter # 7	Current Temperature Setpoint (°C/°F) Zone 55
Read Parameter # 8	Current Temperature Setpoint (°C/°F) Zone 56
Read Parameter # 9	Current Temperature Setpoint (°C/°F) Zone 57
Read Parameter # 10	Current Temperature Setpoint (°C/°F) Zone 58
Read Parameter # 11	Current Temperature Setpoint (°C/°F) Zone 59
Read Parameter # 12	Current Temperature Setpoint (°C/°F) Zone 60
Read Parameter # 13	Current Temperature Setpoint (°C/°F) Zone 61
Read Parameter # 14	Current Temperature Setpoint (°C/°F) Zone 62
Read Parameter # 15	Current Temperature Setpoint (°C/°F) Zone 63
Read Parameter # 16	Current Temperature Setpoint (°C/°F) Zone 64

BLK Type	31
Read Parameter # 1	Current Temp Status ¹ Zone 1
Read Parameter # 2	Current Temp Status ¹ Zone 2
Read Parameter # 3	Current Temp Status ¹ Zone 3
Read Parameter # 4	Current Temp Status ¹ Zone 4
Read Parameter # 5	Current Temp Status ¹ Zone 5
Read Parameter # 6	Current Temp Status ¹ Zone 6
Read Parameter # 7	Current Temp Status ¹ Zone 7
Read Parameter # 8	Current Temp Status ¹ Zone 8
Read Parameter # 9	Current Temp Status ¹ Zone 9
Read Parameter # 10	Current Temp Status ¹ Zone 10
Read Parameter # 11	Current Temp Status ¹ Zone 11
Read Parameter # 12	Current Temp Status ¹ Zone 12
Read Parameter # 13	Current Temp Status ¹ Zone 13
Read Parameter # 14	Current Temp Status ¹ Zone 14
Read Parameter # 15	Current Temp Status ¹ Zone 15
Read Parameter # 16	Current Temp Status ¹ Zone 16

¹ Temp Status is Binary Encoded:

BIT0: Zone Ready

BIT1: Zone Heating

BIT2: Zone Waiting (Sequencing)

BIT3: Zone in Alarm Status

BIT4: <reserved>

BIT5: Zone RTD Fault

BLK Type	32
Read Parameter # 1	Current Temp Status ¹ Zone 17
Read Parameter # 2	Current Temp Status ¹ Zone 18
Read Parameter # 3	Current Temp Status ¹ Zone 19
Read Parameter # 4	Current Temp Status ¹ Zone 20
Read Parameter # 5	Current Temp Status ¹ Zone 21
Read Parameter # 6	Current Temp Status ¹ Zone 22
Read Parameter # 7	Current Temp Status ¹ Zone 23
Read Parameter # 8	Current Temp Status ¹ Zone 24
Read Parameter # 9	Current Temp Status ¹ Zone 25
Read Parameter # 10	Current Temp Status ¹ Zone 26
Read Parameter # 11	Current Temp Status ¹ Zone 27
Read Parameter # 12	Current Temp Status ¹ Zone 28
Read Parameter # 13	Current Temp Status ¹ Zone 29
Read Parameter # 14	Current Temp Status ¹ Zone 30
Read Parameter # 15	Current Temp Status ¹ Zone 31
Read Parameter # 16	Current Temp Status ¹ Zone 32

BLK Type	33
Read Parameter # 1	Current Temp Status ¹ Zone 33
Read Parameter # 2	Current Temp Status ¹ Zone 34
Read Parameter # 3	Current Temp Status ¹ Zone 35
Read Parameter # 4	Current Temp Status ¹ Zone 36
Read Parameter # 5	Current Temp Status ¹ Zone 37
Read Parameter # 6	Current Temp Status ¹ Zone 38
Read Parameter # 7	Current Temp Status ¹ Zone 39
Read Parameter # 8	Current Temp Status ¹ Zone 40
Read Parameter # 9	Current Temp Status ¹ Zone 41
Read Parameter # 10	Current Temp Status ¹ Zone 42
Read Parameter # 11	Current Temp Status ¹ Zone 43
Read Parameter # 12	Current Temp Status ¹ Zone 44
Read Parameter # 13	Current Temp Status ¹ Zone 45
Read Parameter # 14	Current Temp Status ¹ Zone 46
Read Parameter # 15	Current Temp Status ¹ Zone 47
Read Parameter # 16	Current Temp Status ¹ Zone 48

¹ Temp Status is Binary Encoded:

BIT0: Zone Ready

BIT1: Zone Heating

BIT2: Zone Waiting (Sequencing)

BIT3: Zone in Alarm Status

BIT4: <reserved>

BIT5: Zone RTD Fault

BLK Type	34
Read Parameter # 1	Current Temp Status ¹ Zone 49
Read Parameter # 2	Current Temp Status ¹ Zone 50
Read Parameter # 3	Current Temp Status ¹ Zone 51
Read Parameter # 4	Current Temp Status ¹ Zone 52
Read Parameter # 5	Current Temp Status ¹ Zone 53
Read Parameter # 6	Current Temp Status ¹ Zone 54
Read Parameter # 7	Current Temp Status ¹ Zone 55
Read Parameter # 8	Current Temp Status ¹ Zone 56
Read Parameter # 9	Current Temp Status ¹ Zone 57
Read Parameter # 10	Current Temp Status ¹ Zone 58
Read Parameter # 11	Current Temp Status ¹ Zone 59
Read Parameter # 12	Current Temp Status ¹ Zone 60
Read Parameter # 13	Current Temp Status ¹ Zone 61
Read Parameter # 14	Current Temp Status ¹ Zone 62
Read Parameter # 15	Current Temp Status ¹ Zone 63
Read Parameter # 16	Current Temp Status ¹ Zone 64

BLK Type	41
Read Parameter # 1	Secondary Pressure (psi or /10 bar) Pump 1
Read Parameter # 2	Secondary Pressure (psi or /10 bar) Pump 2
Read Parameter # 3	Secondary Pressure (psi or /10 bar) Pump 3
Read Parameter # 4	Secondary Pressure (psi or /10 bar) Pump 4
Read Parameter # 5	Secondary Pressure (psi or /10 bar) Pump 5
Read Parameter # 6	Secondary Pressure (psi or /10 bar) Pump 6
Read Parameter # 7	Secondary Pressure (psi or /10 bar) Pump 7
Read Parameter # 8	Secondary Pressure (psi or /10 bar) Pump 8
Read Parameter # 9	Secondary Pressure (psi or /10 bar) Pump 9
Read Parameter # 10	
Read Parameter # 11	
Read Parameter # 12	
Read Parameter # 13	
Read Parameter # 14	
Read Parameter # 15	
Read Parameter # 16	

The Heat-Up-Sequence setting of each zone defines whether a zone is activated (sequence > 0) or deactivated (sequence = 0). All zones that have a sequence > 0 are heated up in order (first = sequence 1, second = sequence 2, etc.):

BLK Type	51
Read Parameter # 1	Current Temp Sequence Setting Zone 1
Read Parameter # 2	Current Temp Sequence Setting Zone 2
Read Parameter # 3	Current Temp Sequence Setting Zone 3
Read Parameter # 4	Current Temp Sequence Setting Zone 4
Read Parameter # 5	Current Temp Sequence Setting Zone 5
Read Parameter # 6	Current Temp Sequence Setting Zone 6
Read Parameter # 7	Current Temp Sequence Setting Zone 7
Read Parameter # 8	Current Temp Sequence Setting Zone 8
Read Parameter # 9	Current Temp Sequence Setting Zone 9
Read Parameter # 10	Current Temp Sequence Setting Zone 10
Read Parameter # 11	Current Temp Sequence Setting Zone 11
Read Parameter # 12	Current Temp Sequence Setting Zone 12
Read Parameter # 13	Current Temp Sequence Setting Zone 13
Read Parameter # 14	Current Temp Sequence Setting Zone 14
Read Parameter # 15	Current Temp Sequence Setting Zone 15
Read Parameter # 16	Current Temp Sequence Setting Zone 16

BLK Type	52
Read Parameter # 1	Current Temp Sequence Setting Zone 17
Read Parameter # 2	Current Temp Sequence Setting Zone 18
Read Parameter # 3	Current Temp Sequence Setting Zone 19
Read Parameter # 4	Current Temp Sequence Setting Zone 20
Read Parameter # 5	Current Temp Sequence Setting Zone 21
Read Parameter # 6	Current Temp Sequence Setting Zone 22
Read Parameter # 7	Current Temp Sequence Setting Zone 23
Read Parameter # 8	Current Temp Sequence Setting Zone 24
Read Parameter # 9	Current Temp Sequence Setting Zone 25
Read Parameter # 10	Current Temp Sequence Setting Zone 26
Read Parameter # 11	Current Temp Sequence Setting Zone 27
Read Parameter # 12	Current Temp Sequence Setting Zone 28
Read Parameter # 13	Current Temp Sequence Setting Zone 29
Read Parameter # 14	Current Temp Sequence Setting Zone 30
Read Parameter # 15	Current Temp Sequence Setting Zone 31
Read Parameter # 16	Current Temp Sequence Setting Zone 32

BLK Type	53
Read Parameter # 1	Current Temp Sequence Setting Zone 33
Read Parameter # 2	Current Temp Sequence Setting Zone 34
Read Parameter # 3	Current Temp Sequence Setting Zone 35
Read Parameter # 4	Current Temp Sequence Setting Zone 36
Read Parameter # 5	Current Temp Sequence Setting Zone 37
Read Parameter # 6	Current Temp Sequence Setting Zone 38
Read Parameter # 7	Current Temp Sequence Setting Zone 39
Read Parameter # 8	Current Temp Sequence Setting Zone 40
Read Parameter # 9	Current Temp Sequence Setting Zone 41
Read Parameter # 10	Current Temp Sequence Setting Zone 42
Read Parameter # 11	Current Temp Sequence Setting Zone 43
Read Parameter # 12	Current Temp Sequence Setting Zone 44
Read Parameter # 13	Current Temp Sequence Setting Zone 45
Read Parameter # 14	Current Temp Sequence Setting Zone 46
Read Parameter # 15	Current Temp Sequence Setting Zone 47
Read Parameter # 16	Current Temp Sequence Setting Zone 48

BLK Type	54
Read Parameter # 1	Current Temp Sequence Setting Zone 49
Read Parameter # 2	Current Temp Sequence Setting Zone 50
Read Parameter # 3	Current Temp Sequence Setting Zone 51
Read Parameter # 4	Current Temp Sequence Setting Zone 52
Read Parameter # 5	Current Temp Sequence Setting Zone 53
Read Parameter # 6	Current Temp Sequence Setting Zone 54
Read Parameter # 7	Current Temp Sequence Setting Zone 55
Read Parameter # 8	Current Temp Sequence Setting Zone 56
Read Parameter # 9	Current Temp Sequence Setting Zone 57
Read Parameter # 10	Current Temp Sequence Setting Zone 58
Read Parameter # 11	Current Temp Sequence Setting Zone 59
Read Parameter # 12	Current Temp Sequence Setting Zone 60
Read Parameter # 13	Current Temp Sequence Setting Zone 61
Read Parameter # 14	Current Temp Sequence Setting Zone 62
Read Parameter # 15	Current Temp Sequence Setting Zone 63
Read Parameter # 16	Current Temp Sequence Setting Zone 64

BLK Type	101
Read Parameter # 1	Manual Setpoint (0..1000=0..100,0%) Pump 1
Read Parameter # 2	Manual Setpoint (0..1000=0..100,0%) Pump 2
Read Parameter # 3	Manual Setpoint (0..1000=0..100,0%) Pump 3
Read Parameter # 4	Manual Setpoint (0..1000=0..100,0%) Pump 4
Read Parameter # 5	Manual Setpoint (0..1000=0..100,0%) Pump 5
Read Parameter # 6	Manual Setpoint (0..1000=0..100,0%) Pump 6
Read Parameter # 7	Manual Setpoint (0..1000=0..100,0%) Pump 7
Read Parameter # 8	Manual Setpoint (0..1000=0..100,0%) Pump 8
Read Parameter # 9	Manual Setpoint (0..1000=0..100,0%) Pump 9
Read Parameter # 10	
Read Parameter # 11	
Read Parameter # 12	
Read Parameter # 13	
Read Parameter # 14	
Read Parameter # 15	
Read Parameter # 16	

BLK Type	102
Read Parameter # 1	Min Auto Value (0..1000=0..100,0%) Pump 1
Read Parameter # 2	Min Auto Value (0..1000=0..100,0%) Pump 2
Read Parameter # 3	Min Auto Value (0..1000=0..100,0%) Pump 3
Read Parameter # 4	Min Auto Value (0..1000=0..100,0%) Pump 4
Read Parameter # 5	Min Auto Value (0..1000=0..100,0%) Pump 5
Read Parameter # 6	Min Auto Value (0..1000=0..100,0%) Pump 6
Read Parameter # 7	Min Auto Value (0..1000=0..100,0%) Pump 7
Read Parameter # 8	Min Auto Value (0..1000=0..100,0%) Pump 8
Read Parameter # 9	Min Auto Value (0..1000=0..100,0%) Pump 9
Read Parameter # 10	
Read Parameter # 11	
Read Parameter # 12	
Read Parameter # 13	
Read Parameter # 14	
Read Parameter # 15	
Read Parameter # 16	

BLK Type	103
Read Parameter # 1	Max Auto Value (0..1000=0..100,0%) Pump 1
Read Parameter # 2	Max Auto Value (0..1000=0..100,0%) Pump 2
Read Parameter # 3	Max Auto Value (0..1000=0..100,0%) Pump 3
Read Parameter # 4	Max Auto Value (0..1000=0..100,0%) Pump 4
Read Parameter # 5	Max Auto Value (0..1000=0..100,0%) Pump 5
Read Parameter # 6	Max Auto Value (0..1000=0..100,0%) Pump 6
Read Parameter # 7	Max Auto Value (0..1000=0..100,0%) Pump 7
Read Parameter # 8	Max Auto Value (0..1000=0..100,0%) Pump 8
Read Parameter # 9	Max Auto Value (0..1000=0..100,0%) Pump 9
Read Parameter # 10	
Read Parameter # 11	
Read Parameter # 12	
Read Parameter # 13	
Read Parameter # 14	
Read Parameter # 15	
Read Parameter # 16	

BLK Type	104
Read Parameter # 1	Linespeed SwP (0..1000=0..100%) Pump 1
Read Parameter # 2	Linespeed SwP (0..1000=0..100%) Pump 2
Read Parameter # 3	Linespeed SwP (0..1000=0..100%) Pump 3
Read Parameter # 4	Linespeed SwP (0..1000=0..100%) Pump 4
Read Parameter # 5	Linespeed SwP (0..1000=0..100%) Pump 5
Read Parameter # 6	Linespeed SwP (0..1000=0..100%) Pump 6
Read Parameter # 7	Linespeed SwP (0..1000=0..100%) Pump 7
Read Parameter # 8	Linespeed SwP (0..1000=0..100%) Pump 8
Read Parameter # 9	Linespeed SwP (0..1000=0..100%) Pump 9
Read Parameter # 10	
Read Parameter # 11	
Read Parameter # 12	
Read Parameter # 13	
Read Parameter # 14	
Read Parameter # 15	
Read Parameter # 16	

BLK Type	105
Read Parameter # 1	Pressure SP (psi or /10 bar) Pump 1
Read Parameter # 2	Pressure SP (psi or /10 bar) Pump 2
Read Parameter # 3	Pressure SP (psi or /10 bar) Pump 3
Read Parameter # 4	Pressure SP (psi or /10 bar) Pump 4
Read Parameter # 5	Pressure SP (psi or /10 bar) Pump 5
Read Parameter # 6	Pressure SP (psi or /10 bar) Pump 6
Read Parameter # 7	Pressure SP (psi or /10 bar) Pump 7
Read Parameter # 8	Pressure SP (psi or /10 bar) Pump 8
Read Parameter # 9	Pressure SP (psi or /10 bar) Pump 9
Read Parameter # 10	
Read Parameter # 11	
Read Parameter # 12	
Read Parameter # 13	
Read Parameter # 14	
Read Parameter # 15	
Read Parameter # 16	

This list of Exchangeable Data Blocks can be extended in future.

Transmitted Data Block

The data to be transmitted to the Dynacontrol v6 is usually transferred from a data block (DB). The structure of the data block is defined by UDT_V6OUT. Not all of the values might be used depending on the current system configuration.

DB_Write-Data								
	Name	Data type	Offset	Start value	Retain	Visible in HMI	Setpoint	Comment
1	Static				☐	☐	☐	
2	DATA_OUT	*UDT_V6OUT*	0.0		☒	☒	☐	
3	RES0	Word	0.0	16#0	☒	☒	☐	Reserved
4	RES1	Word	2.0	16#0	☒	☒	☐	Reserved
5	RUN2	Bool	4.0	false	☒	☒	☐	Pump 2 On
6	RUN3	Bool	4.1	false	☒	☒	☐	Pump 3 On
7	RUN4	Bool	4.2	false	☒	☒	☐	Pump 4 On
8	RUN5	Bool	4.3	false	☒	☒	☐	Pump 5 On
9	RUN6	Bool	4.4	false	☒	☒	☐	Pump 6 On
10	RUN7	Bool	4.5	false	☒	☒	☐	Pump 7 On
11	RUN8	Bool	4.6	false	☒	☒	☐	Pump 8 On
12	RUN9	Bool	4.7	false	☒	☒	☐	Pump 9 On
13	SYS_ON	Bool	5.0	false	☒	☒	☐	System On
14	STDBY	Bool	5.1	false	☒	☒	☐	System Standby
15	RES5_2	Bool	5.2	false	☒	☒	☐	Reserved
16	ACK	Bool	5.3	false	☒	☒	☐	Acknowledge Alarms
17	RES5_4	Bool	5.4	false	☒	☒	☐	Reserved
18	WDOG	Bool	5.5	false	☒	☒	☐	Watchdog (toggle 0/1)
19	RES_5_6	Bool	5.6	false	☒	☒	☐	Reserved
20	RUN1	Bool	5.7	false	☒	☒	☐	Pump 1 On
21	IMPERIAL_UNITS	Bool	6.0	false	☒	☒	☐	Fieldbus uses Imperial Units (*F/psi) instead of SI (*C/bar)

The first two words DBW 0/2 should not be used and exist for compatibility reasons with other field bus protocols.

Pumps On/Off

Use bits DBX 4.0-4.7 and DBX 5.7 to switch the pumps on and off. Please be aware that DBX 7.0 (Bus takes control of System Status) has to be set and watchdog toggling must be active for pumps to work.

System On/Off

Use bit DBX 5.0 to switch Dynacontrol v6 on (TRUE) or off (FALSE). Please be aware that DBX 7.0 (Bus takes control of System Status) has to be set.

System Stand-By

Use bit DBX 5.1 to switch Dynacontrol v6 to Stand-By mode. Please be aware that DBX 7.0 (Bus takes control of System Status) has to be set.

Acknowledge Alarms

A trigger on bit DBX 5.3 will acknowledge alarms in the Dynacontrol v6 System. It has the same functionality as acknowledging alarms on the system HMI.

Watchdog

Please supply a toggling signal towards DBX 5.5 to signal a working PLC towards Dynacontrol v6. The signal can be self-generated (at ~1Hz) or be transferred from the input data block DBX 5.0 (recommended). A timeout on the watchdog bit will cause the pumps to stop.

Imperial Units

Supplying TRUE to DBX 6.0 will cause the system to switch to imperial units. All temperatures (set points and actual values) will be in °F, all pressures will be in psi (instead of °C/bar).

29			BCTRL	Bool	7.0	false				Bus takes Control of System Status
30			LCTRL	Bool	7.1	false				Bus takes Control of Global Linespeed
31			RES7_2	Bool	7.2	false				Reserved
32			RES7_3	Bool	7.3	false				Reserved
33			RES7_4	Bool	7.4	false				Reserved
34			RES7_5	Bool	7.5	false				Reserved
35			RES7_6	Bool	7.6	false				Reserved
36			RES7_7	Bool	7.7	false				Reserved
37			LINESPEED	Int	8.0	0				Global Linespeed (0..1000 = 0..100%)
38			MOTOR_SET1	Int	10.0	0				Motor Setpoint (0..1000 = 0..100%), BIT15=AUTO
39			MOTOR_SET2	Int	12.0	0				Motor Setpoint (0..1000 = 0..100%), BIT15=AUTO
40			MOTOR_SET3	Int	14.0	0				Motor Setpoint (0..1000 = 0..100%), BIT15=AUTO
41			MOTOR_SET4	Int	16.0	0				Motor Setpoint (0..1000 = 0..100%), BIT15=AUTO
42			MOTOR_SET5	Int	18.0	0				Motor Setpoint (0..1000 = 0..100%), BIT15=AUTO
43			MOTOR_SET6	Int	20.0	0				Motor Setpoint (0..1000 = 0..100%), BIT15=AUTO
44			MOTOR_SET7	Int	22.0	0				Motor Setpoint (0..1000 = 0..100%), BIT15=AUTO
45			MOTOR_SET8	Int	24.0	0				Motor Setpoint (0..1000 = 0..100%), BIT15=AUTO
46			MOTOR_SET9	Int	26.0	0				Motor Setpoint (0..1000 = 0..100%), BIT15=AUTO

BCTRL

Bus takes control of System Status (DBX 7.0) has to be set to operate system status and pump functionality (e.g. System on/off, Stand-By, Pumps on/off).

LCTRL + LINESPEED

If LCTRL (DBX 7.1) is set, the PLC has to supply the global main machine line speed directly via field bus. The cell DBW 8 has to be supplied accordingly with the main machine speed in percent (0-1000 = 0-100.0%). This speed is given to the motors running in automatic line speed control mode automatically.

Motor Speed Set Points

The words DBW 10 to DBW 26 can be set to the desired pump speed (in %x10, 0-1000 = 0-100.0%). The pump will then spin with this set point, if all conditions are met (system is ready) and the according “pump on bit” is set (see page 24).

47		RD_BLK_TYPE	Int	28.0	0	☒	☒	☐	Read Parameter Block Type
48		RD_BLK_UID	Int	30.0	0	☒	☒	☐	Read Parameter Block UID

Read Parameter Block Type

The Read Parameter Block Type and the UID define which exchangeable block is transferred on the read side. A value of 0 on RD_BLK_TYPE will cause the Dynacontrol v6 to cycle through all known exchangeable parameters blocks. By supplying any value to RD_BLK_UID the very same value is reflected on the read block to make sure the request got through.

Exchangeable Transmit Data Frame

51			WR_BLK_TYPE1	Int	36.0	0				Write Parameter Block Type
52			WR_BLK_UID	Int	38.0	0				Write Parameter Block UID
53			RES40	Int	40.0	0				Constant 0
54			RES42	Int	42.0	0				Constant 0
55			WRITE_DATA_1	Int	44.0	0				Write Data
56			WRITE_DATA_2	Int	46.0	0				Write Data
57			WRITE_DATA_3	Int	48.0	0				Write Data
58			WRITE_DATA_4	Int	50.0	0				Write Data
59			WRITE_DATA_5	Int	52.0	0				Write Data
60			WRITE_DATA_6	Int	54.0	0				Write Data
61			WRITE_DATA_7	Int	56.0	0				Write Data
62			WRITE_DATA_8	Int	58.0	0				Write Data
63			WRITE_DATA_9	Int	60.0	0				Write Data
64			WRITE_DATA_10	Int	62.0	0				Write Data
65			WRITE_DATA_11	Int	64.0	0				Write Data
66			WRITE_DATA_12	Int	66.0	0				Write Data
67			WRITE_DATA_13	Int	68.0	0				Write Data
68			WRITE_DATA_14	Int	70.0	0				Write Data
69			WRITE_DATA_15	Int	72.0	0				Write Data
70			WRITE_DATA_16	Int	74.0	0				Write Data
71			WR_BLK_TYPE2	Int	76.0	0				Write Parameter Block Type (copy from 36.0)

To support multiple information blocks inside the limited field bus size, an exchangeable data frame is transmitted. The data to be send has to be defined by the PLC software.

If DBW 36 and DBW 76 are equal, the value of DBW 36/76 defines the content of the words DBW 44-74 (16 words).

To transmit custom values in exchangeable data blocks to Dynacontrol v6, follow these steps in sequence:

1. Write a logical 0 into DBW 36 and DBW 76
2. Fill in DATA1 to DATA16 depending on the data block type to be sent
3. Write a unique value into DBW 38 (WR_BLK_UID)
4. Write the desired data block type into DBW 36 and also into DBW 76
5. Wait until the unique ID has appeared in the read data block DBW 50 (LAST_REC_UID)
6. Write a logical 0 into DBW 36 and DBW 76

Exchangeable Write Block Types

The following exchangeable transmit blocks are defined:

BLK Type	11
Write Parameter # 1	Setpoint Temperature (°C/°F) Zone 1
Write Parameter # 2	Setpoint Temperature (°C/°F) Zone 2
Write Parameter # 3	Setpoint Temperature (°C/°F) Zone 3
Write Parameter # 4	Setpoint Temperature (°C/°F) Zone 4
Write Parameter # 5	Setpoint Temperature (°C/°F) Zone 5
Write Parameter # 6	Setpoint Temperature (°C/°F) Zone 6
Write Parameter # 7	Setpoint Temperature (°C/°F) Zone 7
Write Parameter # 8	Setpoint Temperature (°C/°F) Zone 8
Write Parameter # 9	Setpoint Temperature (°C/°F) Zone 9
Write Parameter # 10	Setpoint Temperature (°C/°F) Zone 10
Write Parameter # 11	Setpoint Temperature (°C/°F) Zone 11
Write Parameter # 12	Setpoint Temperature (°C/°F) Zone 12
Write Parameter # 13	Setpoint Temperature (°C/°F) Zone 13
Write Parameter # 14	Setpoint Temperature (°C/°F) Zone 14
Write Parameter # 15	Setpoint Temperature (°C/°F) Zone 15
Write Parameter # 16	Setpoint Temperature (°C/°F) Zone 16

BLK Type	12
Write Parameter # 1	Setpoint Temperature (°C/°F) Zone 17
Write Parameter # 2	Setpoint Temperature (°C/°F) Zone 18
Write Parameter # 3	Setpoint Temperature (°C/°F) Zone 19
Write Parameter # 4	Setpoint Temperature (°C/°F) Zone 20
Write Parameter # 5	Setpoint Temperature (°C/°F) Zone 21
Write Parameter # 6	Setpoint Temperature (°C/°F) Zone 22
Write Parameter # 7	Setpoint Temperature (°C/°F) Zone 23
Write Parameter # 8	Setpoint Temperature (°C/°F) Zone 24
Write Parameter # 9	Setpoint Temperature (°C/°F) Zone 25
Write Parameter # 10	Setpoint Temperature (°C/°F) Zone 26
Write Parameter # 11	Setpoint Temperature (°C/°F) Zone 27
Write Parameter # 12	Setpoint Temperature (°C/°F) Zone 28
Write Parameter # 13	Setpoint Temperature (°C/°F) Zone 29
Write Parameter # 14	Setpoint Temperature (°C/°F) Zone 30
Write Parameter # 15	Setpoint Temperature (°C/°F) Zone 31
Write Parameter # 16	Setpoint Temperature (°C/°F) Zone 32

BLK Type	13
Write Parameter # 1	Setpoint Temperature (°C/°F) Zone 33
Write Parameter # 2	Setpoint Temperature (°C/°F) Zone 34
Write Parameter # 3	Setpoint Temperature (°C/°F) Zone 35
Write Parameter # 4	Setpoint Temperature (°C/°F) Zone 36
Write Parameter # 5	Setpoint Temperature (°C/°F) Zone 37
Write Parameter # 6	Setpoint Temperature (°C/°F) Zone 38
Write Parameter # 7	Setpoint Temperature (°C/°F) Zone 39
Write Parameter # 8	Setpoint Temperature (°C/°F) Zone 40
Write Parameter # 9	Setpoint Temperature (°C/°F) Zone 41
Write Parameter # 10	Setpoint Temperature (°C/°F) Zone 42
Write Parameter # 11	Setpoint Temperature (°C/°F) Zone 43
Write Parameter # 12	Setpoint Temperature (°C/°F) Zone 44
Write Parameter # 13	Setpoint Temperature (°C/°F) Zone 45
Write Parameter # 14	Setpoint Temperature (°C/°F) Zone 46
Write Parameter # 15	Setpoint Temperature (°C/°F) Zone 47
Write Parameter # 16	Setpoint Temperature (°C/°F) Zone 48

BLK Type	14
Write Parameter # 1	Setpoint Temperature (°C/°F) Zone 49
Write Parameter # 2	Setpoint Temperature (°C/°F) Zone 50
Write Parameter # 3	Setpoint Temperature (°C/°F) Zone 51
Write Parameter # 4	Setpoint Temperature (°C/°F) Zone 52
Write Parameter # 5	Setpoint Temperature (°C/°F) Zone 53
Write Parameter # 6	Setpoint Temperature (°C/°F) Zone 54
Write Parameter # 7	Setpoint Temperature (°C/°F) Zone 55
Write Parameter # 8	Setpoint Temperature (°C/°F) Zone 56
Write Parameter # 9	Setpoint Temperature (°C/°F) Zone 57
Write Parameter # 10	Setpoint Temperature (°C/°F) Zone 58
Write Parameter # 11	Setpoint Temperature (°C/°F) Zone 59
Write Parameter # 12	Setpoint Temperature (°C/°F) Zone 60
Write Parameter # 13	Setpoint Temperature (°C/°F) Zone 61
Write Parameter # 14	Setpoint Temperature (°C/°F) Zone 62
Write Parameter # 15	Setpoint Temperature (°C/°F) Zone 63
Write Parameter # 16	Setpoint Temperature (°C/°F) Zone 64

The Heat-Up-Sequence Setting of each zone defines whether a zone is activated (sequence > 0) or deactivated (sequence = 0). All zones that have a sequence > 0 are heated up in order (first = sequence 1, second = sequence 2, etc.):

BLK Type	51
Write Parameter # 1	Heat-Up Sequence Setting (0=Off) Zone 1
Write Parameter # 2	Heat-Up Sequence Setting (0=Off) Zone 2
Write Parameter # 3	Heat-Up Sequence Setting (0=Off) Zone 3
Write Parameter # 4	Heat-Up Sequence Setting (0=Off) Zone 4
Write Parameter # 5	Heat-Up Sequence Setting (0=Off) Zone 5
Write Parameter # 6	Heat-Up Sequence Setting (0=Off) Zone 6
Write Parameter # 7	Heat-Up Sequence Setting (0=Off) Zone 7
Write Parameter # 8	Heat-Up Sequence Setting (0=Off) Zone 8
Write Parameter # 9	Heat-Up Sequence Setting (0=Off) Zone 9
Write Parameter # 10	Heat-Up Sequence Setting (0=Off) Zone 10
Write Parameter # 11	Heat-Up Sequence Setting (0=Off) Zone 11
Write Parameter # 12	Heat-Up Sequence Setting (0=Off) Zone 12
Write Parameter # 13	Heat-Up Sequence Setting (0=Off) Zone 13
Write Parameter # 14	Heat-Up Sequence Setting (0=Off) Zone 14
Write Parameter # 15	Heat-Up Sequence Setting (0=Off) Zone 15
Write Parameter # 16	Heat-Up Sequence Setting (0=Off) Zone 16

BLK Type	52
Write Parameter # 1	Heat-Up Sequence Setting (0=Off) Zone 17
Write Parameter # 2	Heat-Up Sequence Setting (0=Off) Zone 18
Write Parameter # 3	Heat-Up Sequence Setting (0=Off) Zone 19
Write Parameter # 4	Heat-Up Sequence Setting (0=Off) Zone 20
Write Parameter # 5	Heat-Up Sequence Setting (0=Off) Zone 21
Write Parameter # 6	Heat-Up Sequence Setting (0=Off) Zone 22
Write Parameter # 7	Heat-Up Sequence Setting (0=Off) Zone 23
Write Parameter # 8	Heat-Up Sequence Setting (0=Off) Zone 24
Write Parameter # 9	Heat-Up Sequence Setting (0=Off) Zone 25
Write Parameter # 10	Heat-Up Sequence Setting (0=Off) Zone 26
Write Parameter # 11	Heat-Up Sequence Setting (0=Off) Zone 27
Write Parameter # 12	Heat-Up Sequence Setting (0=Off) Zone 28
Write Parameter # 13	Heat-Up Sequence Setting (0=Off) Zone 29
Write Parameter # 14	Heat-Up Sequence Setting (0=Off) Zone 30
Write Parameter # 15	Heat-Up Sequence Setting (0=Off) Zone 31
Write Parameter # 16	Heat-Up Sequence Setting (0=Off) Zone 32

BLK Type	53
Write Parameter # 1	Heat-Up Sequence Setting (0=Off) Zone 33
Write Parameter # 2	Heat-Up Sequence Setting (0=Off) Zone 34
Write Parameter # 3	Heat-Up Sequence Setting (0=Off) Zone 35
Write Parameter # 4	Heat-Up Sequence Setting (0=Off) Zone 36
Write Parameter # 5	Heat-Up Sequence Setting (0=Off) Zone 37
Write Parameter # 6	Heat-Up Sequence Setting (0=Off) Zone 38
Write Parameter # 7	Heat-Up Sequence Setting (0=Off) Zone 39
Write Parameter # 8	Heat-Up Sequence Setting (0=Off) Zone 40
Write Parameter # 9	Heat-Up Sequence Setting (0=Off) Zone 41
Write Parameter # 10	Heat-Up Sequence Setting (0=Off) Zone 42
Write Parameter # 11	Heat-Up Sequence Setting (0=Off) Zone 43
Write Parameter # 12	Heat-Up Sequence Setting (0=Off) Zone 44
Write Parameter # 13	Heat-Up Sequence Setting (0=Off) Zone 45
Write Parameter # 14	Heat-Up Sequence Setting (0=Off) Zone 46
Write Parameter # 15	Heat-Up Sequence Setting (0=Off) Zone 47
Write Parameter # 16	Heat-Up Sequence Setting (0=Off) Zone 48

BLK Type	54
Write Parameter # 1	Heat-Up Sequence Setting (0=Off) Zone 49
Write Parameter # 2	Heat-Up Sequence Setting (0=Off) Zone 50
Write Parameter # 3	Heat-Up Sequence Setting (0=Off) Zone 51
Write Parameter # 4	Heat-Up Sequence Setting (0=Off) Zone 52
Write Parameter # 5	Heat-Up Sequence Setting (0=Off) Zone 53
Write Parameter # 6	Heat-Up Sequence Setting (0=Off) Zone 54
Write Parameter # 7	Heat-Up Sequence Setting (0=Off) Zone 55
Write Parameter # 8	Heat-Up Sequence Setting (0=Off) Zone 56
Write Parameter # 9	Heat-Up Sequence Setting (0=Off) Zone 57
Write Parameter # 10	Heat-Up Sequence Setting (0=Off) Zone 58
Write Parameter # 11	Heat-Up Sequence Setting (0=Off) Zone 59
Write Parameter # 12	Heat-Up Sequence Setting (0=Off) Zone 60
Write Parameter # 13	Heat-Up Sequence Setting (0=Off) Zone 61
Write Parameter # 14	Heat-Up Sequence Setting (0=Off) Zone 62
Write Parameter # 15	Heat-Up Sequence Setting (0=Off) Zone 63
Write Parameter # 16	Heat-Up Sequence Setting (0=Off) Zone 64

BLK Type	102
Write Parameter # 1	Min Auto Value (0..1000=0..100,0%) Pump 1
Write Parameter # 2	Min Auto Value (0..1000=0..100,0%) Pump 2
Write Parameter # 3	Min Auto Value (0..1000=0..100,0%) Pump 3
Write Parameter # 4	Min Auto Value (0..1000=0..100,0%) Pump 4
Write Parameter # 5	Min Auto Value (0..1000=0..100,0%) Pump 5
Write Parameter # 6	Min Auto Value (0..1000=0..100,0%) Pump 6
Write Parameter # 7	Min Auto Value (0..1000=0..100,0%) Pump 7
Write Parameter # 8	Min Auto Value (0..1000=0..100,0%) Pump 8
Write Parameter # 9	Min Auto Value (0..1000=0..100,0%) Pump 9
Write Parameter # 10	
Write Parameter # 11	
Write Parameter # 12	
Write Parameter # 13	
Write Parameter # 14	
Write Parameter # 15	
Write Parameter # 16	

BLK Type	103
Write Parameter # 1	Max Auto Value (0..1000=0..100,0%) Pump 1
Write Parameter # 2	Max Auto Value (0..1000=0..100,0%) Pump 2
Write Parameter # 3	Max Auto Value (0..1000=0..100,0%) Pump 3
Write Parameter # 4	Max Auto Value (0..1000=0..100,0%) Pump 4
Write Parameter # 5	Max Auto Value (0..1000=0..100,0%) Pump 5
Write Parameter # 6	Max Auto Value (0..1000=0..100,0%) Pump 6
Write Parameter # 7	Max Auto Value (0..1000=0..100,0%) Pump 7
Write Parameter # 8	Max Auto Value (0..1000=0..100,0%) Pump 8
Write Parameter # 9	Max Auto Value (0..1000=0..100,0%) Pump 9
Write Parameter # 10	
Write Parameter # 11	
Write Parameter # 12	
Write Parameter # 13	
Write Parameter # 14	
Write Parameter # 15	
Write Parameter # 16	

“Min and Max Auto Values” define the limits of pump volumetric mode. The actual pump speed will be set between these limits according to the current line speed.

BLK Type	104
Write Parameter # 1	Linespeed SwP (0..1000=0..100%) Pump 1
Write Parameter # 2	Linespeed SwP (0..1000=0..100%) Pump 2
Write Parameter # 3	Linespeed SwP (0..1000=0..100%) Pump 3
Write Parameter # 4	Linespeed SwP (0..1000=0..100%) Pump 4
Write Parameter # 5	Linespeed SwP (0..1000=0..100%) Pump 5
Write Parameter # 6	Linespeed SwP (0..1000=0..100%) Pump 6
Write Parameter # 7	Linespeed SwP (0..1000=0..100%) Pump 7
Write Parameter # 8	Linespeed SwP (0..1000=0..100%) Pump 8
Write Parameter # 9	Linespeed SwP (0..1000=0..100%) Pump 9
Write Parameter # 10	
Write Parameter # 11	
Write Parameter # 12	
Write Parameter # 13	
Write Parameter # 14	
Write Parameter # 15	
Write Parameter # 16	

The Linespeed SwP (Switch Point) defines the limit of the line speed, above which the system falls into volumetric mode. Below this limit the system tries to maintain the pressure set point. This is only valid if the pump operation mode is set to pressure control mode.

BLK Type	105
Write Parameter # 1	Pressure SP (psi or /10 bar) Pump 1
Write Parameter # 2	Pressure SP (psi or /10 bar) Pump 2
Write Parameter # 3	Pressure SP (psi or /10 bar) Pump 3
Write Parameter # 4	Pressure SP (psi or /10 bar) Pump 4
Write Parameter # 5	Pressure SP (psi or /10 bar) Pump 5
Write Parameter # 6	Pressure SP (psi or /10 bar) Pump 6
Write Parameter # 7	Pressure SP (psi or /10 bar) Pump 7
Write Parameter # 8	Pressure SP (psi or /10 bar) Pump 8
Write Parameter # 9	Pressure SP (psi or /10 bar) Pump 9
Write Parameter # 10	
Write Parameter # 11	
Write Parameter # 12	
Write Parameter # 13	
Write Parameter # 14	
Write Parameter # 15	
Write Parameter # 16	

This list of Exchangeable Data Blocks can be extended in future.

Addendum

Standard System Zone Tables

Dynamelt SR05/10 New Generation

Zone 1	Pre-Melt Grid
Zone 2	Hopper
Zone 3	Filter
Zone 4	Hose 1
Zone 5	Head 1
Zone 6	Hose 2
Zone 7	Head 2
Zone 8	Hose 3
Zone 9	Head 3
Zone 10	Hose 4
Zone 11	Head 4
Zone 12	Hose 5
Zone 13	Head 5
Zone 14	Hose 6
Zone 15	Head 6
Zone 16	Aux 1

Dynamelt D25/D45

Zone 1	Pre-Melt Grid 1
Zone 2	Hopper
Zone 3	Pre-Melt Grid 2
Zone 4	Hose 1
Zone 5	Head 1
Zone 6	Hose 2
Zone 7	Head 2
Zone 8	Hose 3
Zone 9	Head 3
Zone 10	Hose 4
Zone 11	Head 4
Zone 12	Aux 1
Zone 13	Aux 2
Zone 14	Aux 3
Zone 15	Aux 4
Zone 16	<unused>

Dynamelt D50/D90

Zone 1	Pre-Melt Grid 1
Zone 2	Hopper 1
Zone 3	Pre-Melt Grid 2
Zone 4	Hose 1
Zone 5	Head 1
Zone 6	Hose 2
Zone 7	Head 2
Zone 8	Hose 3
Zone 9	Head 3
Zone 10	Hose 4
Zone 11	Head 4
Zone 12	Aux 1
Zone 13	Aux 2
Zone 14	Aux 3
Zone 15	Aux 4
Zone 16	<unused>

Zone 17	Pre-Melt Grid 3
Zone 18	Hopper 2
Zone 19	Pre-melt Grid 4
Zone 20	Hose 5
Zone 21	Head 5
Zone 22	Hose 6
Zone 23	Head 6
Zone 24	Hose 7
Zone 25	Head 7
Zone 26	Hose 8
Zone 27	Head 8
Zone 28	Aux 5
Zone 29	Aux 6
Zone 30	Aux 7
Zone 31	Aux 8
Zone 32	<unused>

Dynamelt PUR20

Zone 1	Aux 5
Zone 2	Hopper Aux
Zone 3	Platen
Zone 4	Hose 1
Zone 5	Head 1
Zone 6	Aux 1
Zone 7	Aux 2
Zone 8	Hose 2
Zone 9	Head 2
Zone 10	Aux 3
Zone 11	Aux 4
Zone 12	Hose 3
Zone 13	Head 3
Zone 14	Hose 4
Zone 15	Head 4
Zone 16	Hopper