

User Manual

DynaControl V6 Fieldbus Control - CC-Link Gateway option

Control any V6 DynaControl ASU* with EtherNet/IP
fieldbus from a CC-Link v2 master

Devices required:

- EtherNet/IP fieldbus module **PN 117381**
- Gateway EtherNet/IP Scanner - CC-Link Slave

Kit PN: 825747:

- Gateway EtherNet/IP - CC-Link **PN 825749**
- CAT5E Patch Cable 6 ft. (2m) **PN 809378**
- RJ45 Bulkhead Connector **PN 110867**
- RJ45 Bulkhead Connector Cap **PN 111241**

*V6 ASU models listed under the Addendum. See TOC.

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System Description

DynaControl V6 EtherNet/IP Module

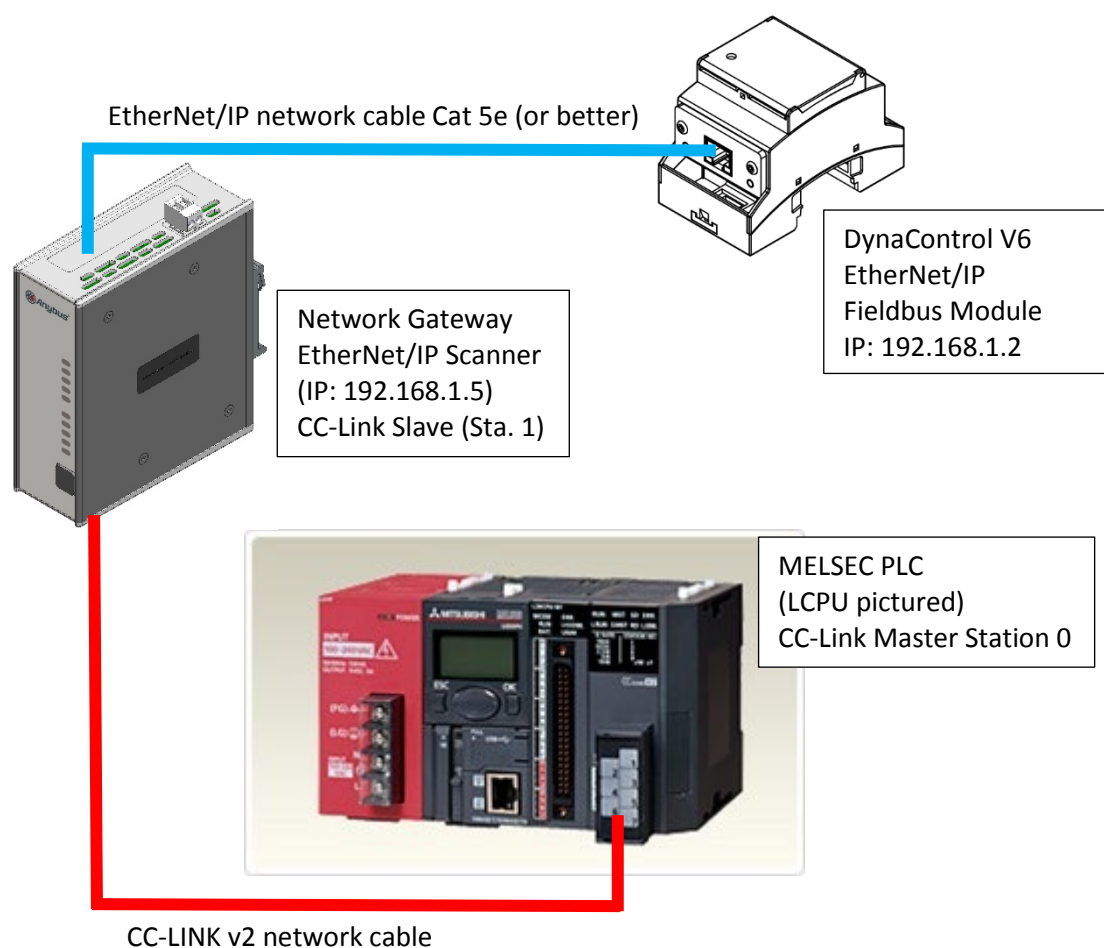
Allows all DynaControl V6 based melters to be integrated into a main/parent control system via EtherNet/IP fieldbus control of the V6 melter. The EtherNet/IP compatible module is used in combination with an EtherNet/IP based master device.

Gateway CC-Link (v2) to EtherNet/IP

For communication and control of the V6 melter from a CC-Link (v2) communications network, a Gateway must be used. In this case, the master must be a CC-Link (v2) compatible device (customer supplied).

The Gateway itself contains a CC-Link (v2) slave and an EtherNet/IP Scanner (master) thereby allowing control and communication to and from the DynaControl V6 EtherNet/IP module to be accomplished.

The example device and network configuration is illustrated below:

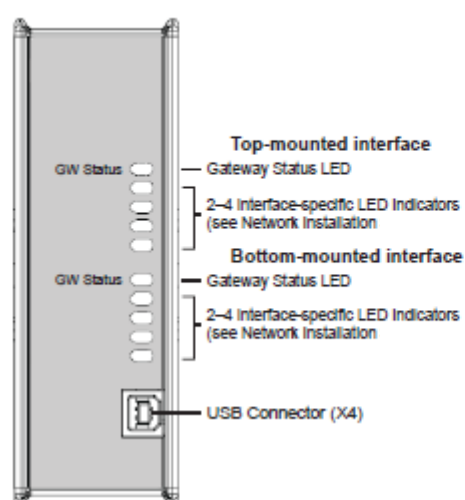


Hardware Installation

The **DynaControl V6 EtherNet/IP Module** is attached to the DynaControl V6 Series modular system. No special module order is required and no hardware settings can be set on the module itself. The module has one standard RJ45 connection to attach to the EtherNet/IP network cable.

The **CC-Link (v2) to EtherNet/IP Gateway** must be installed in remote junction box such that both CC-Link (v2) network and EtherNet/IP network are accessible. Appropriate network cabling is required to network the CC-Link Master to the V6 melter. Customer is responsible for ensuring the correct network cabling is installed. This should be CC-Link v2 certified network cable and EtherNet/IP Cat 5e (or better) network cable. See figures below for installation.

Front view



Gateway Status LED

Indication	Meaning
Green	Communication running
Red	Communication error
Red (flashing)	Network interface error

The interface-specific LED indicators are described in the Network Installation Sheets for the respective fieldbus network interfaces.

Power Connector (X3)

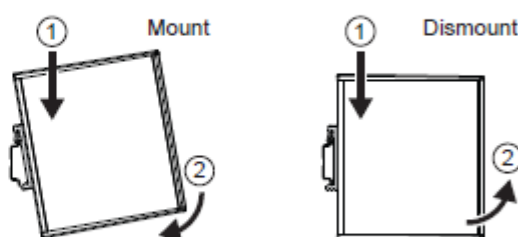


Pin	Signal
1	24 VDC $\pm 20\%$ Class 2
2	Ground

DIN Rail Mounting (standard)

Align the gateway with the DIN rail connector, then press firmly on the top end and push the lower end into place.

To dismount the gateway, press firmly on the top end, then pull the lower end away from the DIN rail.

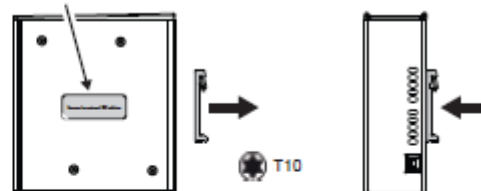


DIN Rail Mounting (sideways)

Remove the sticker covering the screw holes on the right side panel. Unscrew the DIN clip from the back and refit it to the side panel.

Mount/dismount the gateway the same way as in standard mounting.

Screw holes behind sticker



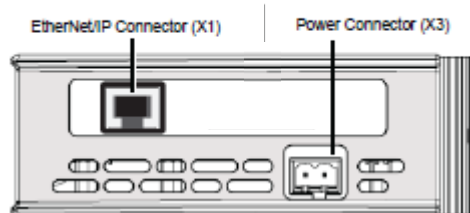
Technical Specifications

Power supply	24 VDC $\pm 20\%$ Class 2
Power consumption	200 mA at 24 VDC (typical) 400 mA at 24 VDC (maximum)
Operating temperature	-25 to +65 °C @ 400 mA/24 VDC
Non-operating temperature	-40 to +85 °C
Relative humidity	5-95 % non-condensing
Protective Earth (PE)	Internal connection to PE via the DIN rail

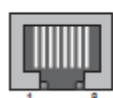
Network Installation

Connect EtherNet/IP cable to top of gateway (X1) RJ45 connector. Connect CC-Link cable to connector (X2) on bottom of gateway. See figures below. CC-Link baud rate and address switches are configured from the factory and should not need changing.

Top view

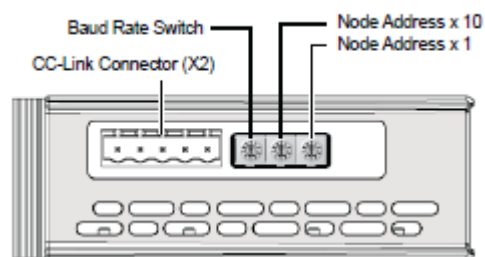


EtherNet/IP (RJ45) Connector



Pin	Signal
1	TD+
2	TD-
3	RD+
4, 5, 7, 8	Termination to PE
6	RD-

Bottom-mounted Interface



CC-Link Connector



Pin	Signal
1	DA (Communication signal)
2	DB (Communication signal)
3	DG (Digital Ground)
4	Shield (Cable shield)
5	FG/PE (Frame Ground)

Technical Specifications

Dimensions (L•W•H)	114 x 44 x 127mm or 4,49 x 1,73 x 5,00"
Weight	400g or 0,880 lbs
Operating temperature	-25 to +65 °C or -13 to +149 °F
Storage temperature	-40 to +85 °C or -40 to +185 °F
Power supply	24 VDC +/- 20% via 2-pole 5.08 mm Phoenix pluggable screw connector
Current consumption	max. 400mA (Typical 200mA)
Enclosure material	Aluminium and plastic
Installation position	Vertical / Flat*
Galvanic isolation	YES, on both BUS/Ethernet side
Mechanical rating	IP20, NEMA rating 1
Mounting	DIN-rail (EN 50022 standard)
Certifications	CE, cUL _{US} , ATEX/Haz.Loc, RoHS

Software Installation

Please use the settings in the DynaControl Menu to select the EtherNet/IP address parameters (IP-Address, Netmask, Gateway) as needed.

Factory settings to communicate with the Gateway are:

IP address: 192.168.1.2

Subnet Mask: 255.255.255.0

Gateway address: 192.168.1.5

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.

Gateway Configuration:

Software is not required for the Gateway and is pre-configured from the factory. Changing or altering the software configuration of the Gateway or changing the settings of the external address switches should be avoided. Do not attempt to change the Gateway configuration.

Setting up Communication

BELOW INFORMATION IS CONTAINED IN DEMO PLC PROGRAM "DEMO_CCLv2-GATEWAY-V6ENET.gxw"
Please refer to the demonstration PLC software for better understanding of the following data tables.

1) GX Works2 CC-Link Configuration:

Remote registers must be byte swapped.

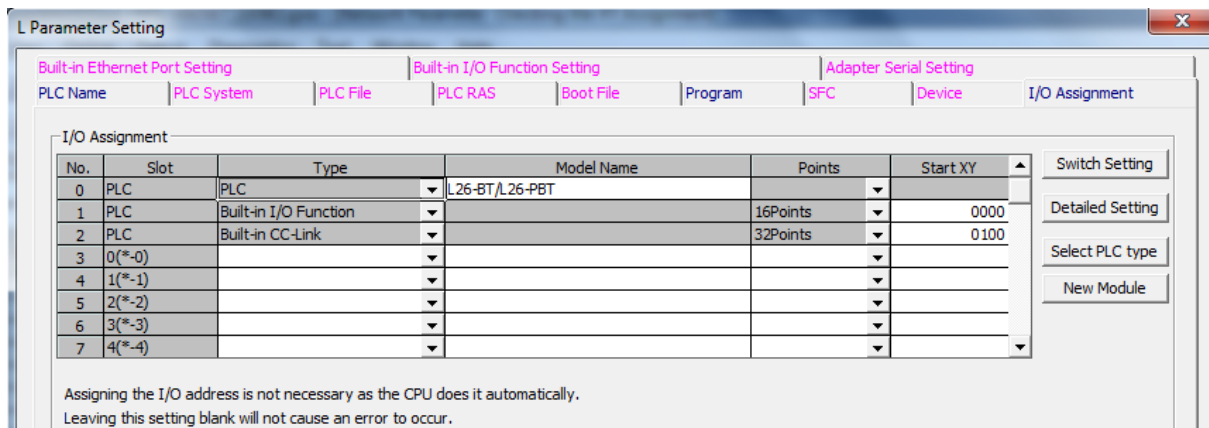
	1	2
Start I/O No.	0100	
Operation Setting	Operation Setting	
Type	Master Station	
Station No.	0	
Master Station Data Link Type	PLC Parameter Auto Start	
Mode	Remote Net(Ver.2 Mode)	
Transmission Speed	2.5Mbps	
Total Module Connected	1	
Remote input(RX)	W0	
Remote output(RY)	W1000	
Remote register(RWr)	W14	
Remote register(RWw)	W1014	
Ver.2 Remote input(RX)		
Ver.2 Remote output(RY)		
Ver.2 Remote register(RWr)		
Ver.2 Remote register(RWw)		
Special relay(SB)		
Special register(SW)	SW0	
Retry Count	3	
Automatic Reconnection Station Count	1	
Standby Master Station No.		
PLC Down Select	Continue	
Scan Mode Setting	Synchronous	
Delay Time Setting	0	
Station Information Setting	Station Information	
Remote Device Station Initial Setting	Initial Setting	
Interrupt Settings	Interrupt Settings	

Station Information:

CC-Link Station Information Module 1					
Station No.	Station Type	Expanded Cyclic Setting	Number of Occupied Stations	Remote Station Points	Reserve/Invalid Station Select
1/ 1	Ver.2 Remote Device Station	Quadruple	Occupied Stations 3	320Points	No Setting

(No Initial Setting or Interrupt Settings are required).

2) L-CPU Parameter Setting – I/O Assignment:



L Parameter Setting

Built-in Ethernet Port Setting | Built-in I/O Function Setting | Adapter Serial Setting

PLC Name | PLC System | PLC File | PLC RAS | Boot File | Program | SFC | Device | I/O Assignment

I/O Assignment

No.	Slot	Type	Model Name	Points	Start XY
0	PLC	PLC	L26-BT/L26-PBT		
1	PLC	Built-in I/O Function		16Points	0000
2	PLC	Built-in CC-Link		32Points	0100
3	0(*-0)				
4	1(*-1)				
5	2(*-2)				
6	3(*-3)				
7	4(*-4)				

Switch Setting
Detailed Setting
Select PLC type
New Module

Assigning the I/O address is not necessary as the CPU does it automatically.
Leaving this setting blank will not cause an error to occur.

ITW Dynatec supplies a well-documented demonstration file written for Configuration Example with **GX Works2 Version 1.568S**. **Demo PLC Type: Mitsubishi Series LCPU, PLC Type: L26-BT/L26-PBT.**

If the Demo program does not match your PLC, utilize GX Works2 Standard to recompile the program with your chosen PLC type.

Received Data Block

The received data (from the DynaControl V6) has a length of 61 words (122 bytes). Inside the data block not all values might be used depending on the current system configuration. For example, if the level sensor is not equipped, the content of the level sensor status should be ignored.

The first two words are reserved and must not be used. They are reserved for other fieldbus protocols and exist for compatibility reasons. See table for other Reserved data. The corresponding Device number in GX Works2 is provided. Descriptions are also preconfigured in the Demo program.

Device Comments (Data Register)	Data Type	Description (V6)	Link Register	Data Register
V6 DATA REGISTERREAD 0 RESERVED	INT	Reserved	W0	not used
V6 DATA REGISTERREAD 1 RESERVED	INT	Reserved	W1	not used
V6 READ SYS STS WATCHDOGBIT IN	BOOL	Watchdog	W2.0	D2.0
V6 READ SYS STS READY BIT ON	BOOL	System is Ready	W2.1	D2.1
V6 READ SYS STS FAULT BIT ON	BOOL	System has a Fault	W2.2	D2.2
V6 READ SYS STS ALARM BIT ON	BOOL	System is in Alarm State	W2.3	D2.3
V6 READ SYS STS POWER ON	BOOL	System is On	W2.4	D2.4
V6 READ SYS STS STANDBY BIT ON	BOOL	System is in Stand-By	W2.5	D2.5
V6 READ SYS STS LOW LVL BIT ON	BOOL	System has "Low Level"	W2.6	D2.6
V6 READ SYS STS PUMP 1 BIT ON	BOOL	Pump is On	W2.7	D2.7
V6 READ SYS STS PUMP 2 BIT ON	BOOL	Pump is On	W2.8	D2.8
V6 READ SYS STS PUMP 3 BIT ON	BOOL	Pump is On	W2.9	D2.9
V6 READ SYS STS PUMP 4 BIT ON	BOOL	Pump is On	W2.A	D2.A
V6 READ SYS STS PUMP 5 BIT ON	BOOL	Pump is On	W2.B	D2.B
V6 READ SYS STS PUMP 6 BIT ON	BOOL	Pump is On	W2.C	D2.C
V6 READ SYS STS PUMP 7 BIT ON	BOOL	Pump is On	W2.D	D2.D
V6 READ SYS STS PUMP 8 BIT ON	BOOL	Pump is On	W2.E	D2.E
V6 READ SYS STS PUMP 9 BIT ON	BOOL	Pump is On	W2.F	D2.F
V6 DATA REGISTERREAD 3 RESERVED	INT	Reserved	W3	D3
V6 DATA READ GLOBAL LINE SPD	INT	0..1000 = 0..100.0%	W4	D4
V6 DATA READ ACTUAL PRESS 1	INT	0..1000 = 0..100.0bar / 0..1000psi	W5	D5
V6 DATA READ ACTUAL PRESS 2	INT	0..1000 = 0..100.0bar / 0..1000psi	W6	D6
V6 DATA READ ACTUAL PRESS 3	INT	0..1000 = 0..100.0bar / 0..1000psi	W7	D7
V6 DATA READ ACTUAL PRESS 4	INT	0..1000 = 0..100.0bar / 0..1000psi	W8	D8
V6 DATA READ ACTUAL PRESS 5	INT	0..1000 = 0..100.0bar / 0..1000psi	W9	D9
V6 DATA READ ACTUAL PRESS 6	INT	0..1000 = 0..100.0bar / 0..1000psi	W0A	D10
V6 DATA READ ACTUAL PRESS 7	INT	0..1000 = 0..100.0bar / 0..1000psi	W0B	D11
V6 DATA READ ACTUAL PRESS 8	INT	0..1000 = 0..100.0bar / 0..1000psi	W0C	D12
V6 DATA READ ACTUAL PRESS 9	INT	0..1000 = 0..100.0bar / 0..1000psi	W0D	D13
V6 DATA REGISTERREAD 14 RESERVED	INT	Reserved	W0E	D14
V6 DATA READ ACTUAL SPEED 1	INT	0..1000 = 0..100.0rpm	W0F	D15
V6 DATA READ ACTUAL SPEED 2	INT	0..1000 = 0..100.0rpm	W10	D16
V6 DATA READ ACTUAL SPEED 3	INT	0..1000 = 0..100.0rpm	W11	D17
V6 DATA READ ACTUAL SPEED 4	INT	0..1000 = 0..100.0rpm	W12	D18
V6 DATA READ ACTUAL SPEED 5	INT	0..1000 = 0..100.0rpm	W13	D19
V6 DATA READ ACTUAL SPEED 6	INT	0..1000 = 0..100.0rpm	W14	D20
V6 DATA READ ACTUAL SPEED 7	INT	0..1000 = 0..100.0rpm	W15	D21
V6 DATA READ ACTUAL SPEED 8	INT	0..1000 = 0..100.0rpm	W16	D22
V6 DATA READ ACTUAL SPEED 9	INT	0..1000 = 0..100.0rpm	W17	D23

V6 DATA REGISTERREAD 24 RESERVED	INT	Reserved	W18	D24
V6 DATA READ LAST SUCC WRITE ID	INT	Last successful parameter Write UID	W19	D25
V6 DATA REGISTERREAD 26 RESERVED	INT	Reserved	W1A	D26
V6 DATA REGISTERREAD 27 RESERVED	INT	Reserved	W1B	D27
V6 DATA READ BLOCK TYPE #1	INT	Read Parameter Block Type #1	W1C	D28
V6 DATA READ PARAM BLK UID	INT	Read Parameter Block UID	W1D	D29
V6 DATA READ CURRENT DATA	INT[16]	Current Data	W1E-W2D	D30-D45
V6 DATA READ BLOCK TYPE #2	INT	Read Parameter Block Type #2	W2E	D46

Watchdog

Bit **WATCHDOG** (device D2.0) 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 must also to be transferred back to the DynaControl V6 to allow monitoring of the other field bus direction (see page 29). This is also provided in the Demo program.

Status Bits

Status bits **READY** through **LOW** (devices D2.1 to D2.6) show certain status from the DynaControl V6. A description of each is provided and is self-explanatory.

A logical 1 of the Ready signal means that all zones of the system are heated up according to the set points and alarm windows, they all are above the “Global Release Temperature”, Standby mode is not enabled and the system is ready to run.

Pump Activity Bits

Bits **PUMP# BIT ON** shows the current pump status.

A logical 1 means that the pump is running, A logical 0 means it is not running.

Line Speed

GLOBAL LINE SPD 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 Transducers)

Every pump has a primary pressure transducer. **ACTUAL PRESS #** holds the actual values of these pressure transducers. The unit can be either Bar (x10) or PSI depending on the unit 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 in the word 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 in **ACTUAL SPEED #**. The value has a factor of 10, so 1000 means 100.0 rpm. If the system is equipped with no feedback, the variable will show the current actuator value supplied to the pump.

Last Successful Received Parameter Block

Device Comments (Data Register)	Data Type	Description (V6)	Link Register	Data Register
V6 DATA READ LAST SUCC WRITE ID	INT	Last successful parameter Write UID	W19	D25

The word **LAST SUCC WRITE ID** (D25) holds the unique ID (UID) of the last successful write parameter block. See page 32 for further details about custom write blocks.

Exchangeable Read Data Frame

Device Comments (Data Register)	Data Type	Description (V6)	Link Register	Data Register
V6 DATA READ BLOCK TYPE #1	INT	Read Parameter Block Type #1	W1C	D28
V6 DATA READ PARAM BLK UID	INT	Read Parameter Block UID	W1D	D29
V6 DATA READ CURRENT DATA	INT[16]	Current Data	W1E-W2D	D30-D45
V6 DATA READ BLOCK TYPE #2	INT	Read Parameter Block Type #2	W2E	D46

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.

When the value of **READ BLOCK TYPE #1** and **READ BLOCK TYPE #2** are equal, they define the content of the 16 words **CURRENT DATA** (D30-D45). The PLC program must control the values to be copied into the destinations depending on the Read Block type desired. The following tables detail the data that can be read from the V6 based on the value of the Read Block type.

Refer to the Demo program for an example of reading the actual temperature (RTD value) of 16 temperature zones (zones 1-16).

Exchangeable Read Block Types

The following exchangeable read block types 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: MOTOR FAIL
 <- BIT7: OVERTEMP
 -> BIT8: RELAY 1
 -> BIT9: RELAY 2
 -> BIT10: RELAY 3
 -> 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 Set Point (°C/°F) Zone 1
Read Parameter # 2	Current Temperature Set Point (°C/°F) Zone 2
Read Parameter # 3	Current Temperature Set Point (°C/°F) Zone 3
Read Parameter # 4	Current Temperature Set Point (°C/°F) Zone 4
Read Parameter # 5	Current Temperature Set Point (°C/°F) Zone 5
Read Parameter # 6	Current Temperature Set Point (°C/°F) Zone 6
Read Parameter # 7	Current Temperature Set Point (°C/°F) Zone 7
Read Parameter # 8	Current Temperature Set Point (°C/°F) Zone 8
Read Parameter # 9	Current Temperature Set Point (°C/°F) Zone 9
Read Parameter # 10	Current Temperature Set Point (°C/°F) Zone 10
Read Parameter # 11	Current Temperature Set Point (°C/°F) Zone 11
Read Parameter # 12	Current Temperature Set Point (°C/°F) Zone 12
Read Parameter # 13	Current Temperature Set Point (°C/°F) Zone 13
Read Parameter # 14	Current Temperature Set Point (°C/°F) Zone 14
Read Parameter # 15	Current Temperature Set Point (°C/°F) Zone 15
Read Parameter # 16	Current Temperature Set Point (°C/°F) Zone 16

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

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

BLK Type	24
Read Parameter # 1	Current Temperature Set Point (°C/°F) Zone 49
Read Parameter # 2	Current Temperature Set Point (°C/°F) Zone 50
Read Parameter # 3	Current Temperature Set Point (°C/°F) Zone 51
Read Parameter # 4	Current Temperature Set Point (°C/°F) Zone 52
Read Parameter # 5	Current Temperature Set Point (°C/°F) Zone 53
Read Parameter # 6	Current Temperature Set Point (°C/°F) Zone 54
Read Parameter # 7	Current Temperature Set Point (°C/°F) Zone 55
Read Parameter # 8	Current Temperature Set Point (°C/°F) Zone 56
Read Parameter # 9	Current Temperature Set Point (°C/°F) Zone 57
Read Parameter # 10	Current Temperature Set Point (°C/°F) Zone 58
Read Parameter # 11	Current Temperature Set Point (°C/°F) Zone 59
Read Parameter # 12	Current Temperature Set Point (°C/°F) Zone 60
Read Parameter # 13	Current Temperature Set Point (°C/°F) Zone 61
Read Parameter # 14	Current Temperature Set Point (°C/°F) Zone 62
Read Parameter # 15	Current Temperature Set Point (°C/°F) Zone 63
Read Parameter # 16	Current Temperature Set Point (°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 Set Point (0..1000=0..100,0%) Pump 1
Read Parameter # 2	Manual Set Point (0..1000=0..100,0%) Pump 2
Read Parameter # 3	Manual Set Point (0..1000=0..100,0%) Pump 3
Read Parameter # 4	Manual Set Point (0..1000=0..100,0%) Pump 4
Read Parameter # 5	Manual Set Point (0..1000=0..100,0%) Pump 5
Read Parameter # 6	Manual Set Point (0..1000=0..100,0%) Pump 6
Read Parameter # 7	Manual Set Point (0..1000=0..100,0%) Pump 7
Read Parameter # 8	Manual Set Point (0..1000=0..100,0%) Pump 8
Read Parameter # 9	Manual Set Point (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	Line Speed SwP (0..1000=0..100%) Pump 1
Read Parameter # 2	Line Speed SwP (0..1000=0..100%) Pump 2
Read Parameter # 3	Line Speed SwP (0..1000=0..100%) Pump 3
Read Parameter # 4	Line Speed SwP (0..1000=0..100%) Pump 4
Read Parameter # 5	Line Speed SwP (0..1000=0..100%) Pump 5
Read Parameter # 6	Line Speed SwP (0..1000=0..100%) Pump 6
Read Parameter # 7	Line Speed SwP (0..1000=0..100%) Pump 7
Read Parameter # 8	Line Speed SwP (0..1000=0..100%) Pump 8
Read Parameter # 9	Line Speed 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 also implemented as cyclic I/O. It consists of 61 words (122 bytes). Use of the Data Registers depend on the current system configuration and is at the user discretion as to the extent and level of the integration required.

Device Comments (Data Register)	Data Type	Description (V6)	Control Device	Data Register	Link Register
Not Used	INT	Reserved		not used	W1000
Not Used	INT	Reserved		not used	W1001
Set V6 POWER ON	BOOL	System On	M10	D1002.0	W1002.0
Set V6 STANDBY ON	BOOL	Stand-By Mode	M11	D1002.1	W1002.1
V6 DATA RESERVEDBIT	BOOL	Reserved		D1002.2	W1002.2
Set V6 RESET ALARM(S)	BOOL	Reset Alarms	M13	D1002.3	W1002.3
V6 DATA RESERVEDBIT	BOOL	Reserved		D1002.4	W1002.4
Set V6 WATCHDOGBIT OUT	BOOL	Watchdog	D2.0	D1002.5	W1002.5
V6 DATA RESERVEDBIT	BOOL	Reserved		D1002.6	W1002.6
Set V6 PUMP1 ON	BOOL	Start Pump	M17	D1002.7	W1002.7
Set V6 PUMP2 ON	BOOL	Start Pump	M18	D1002.8	W1002.8
Set V6 PUMP3 ON	BOOL	Start Pump	M19	D1002.9	W1002.9
Set V6 PUMP4 ON	BOOL	Start Pump	M20	D1002.A	W1002.A
Set V6 PUMP5 ON	BOOL	Start Pump	M21	D1002.B	W1002.B
Set V6 PUMP6 ON	BOOL	Start Pump	M22	D1002.C	W1002.C
Set V6 PUMP7 ON	BOOL	Start Pump	M23	D1002.D	W1002.D
Set V6 PUMP8 ON	BOOL	Start Pump	M24	D1002.E	W1002.E
Set V6 PUMP9 ON	BOOL	Start Pump	M25	D1002.F	W1002.F
Set V6 BUS CONTROL ON	BOOL	Bus takes Control	M0	D1003.0	W1003.0
Set V6 BUS LINESPEED ON	BOOL	Global Line Speed supplied via Bus	M27	D1003.1	W1003.1
V6 DATA RESERVEDBIT	BOOL	Reserved		D1003.2	W1003.2
V6 DATA RESERVEDBIT	BOOL	Reserved		D1003.3	W1003.3
V6 DATA RESERVEDBIT	BOOL	Reserved		D1003.4	W1003.4
V6 DATA RESERVEDBIT	BOOL	Reserved		D1003.5	W1003.5
V6 DATA RESERVEDBIT	BOOL	Reserved		D1003.6	W1003.6
V6 DATA RESERVEDBIT	BOOL	Reserved		D1003.7	W1003.7
Set V6 IMPERIALON	BOOL	Unit uses Imperial Units (°F/PSI)	M34	D1003.8	W1003.8
V6 DATA RESERVEDBIT	BOOL	Reserved		D1003.9	W1003.9
V6 DATA RESERVEDBIT	BOOL	Reserved		D1003.A	W1003.A
V6 DATA RESERVEDBIT	BOOL	Reserved		D1003.B	W1003.B
V6 DATA RESERVEDBIT	BOOL	Reserved		D1003.C	W1003.C
V6 DATA RESERVEDBIT	BOOL	Reserved		D1003.D	W1003.D
V6 DATA RESERVEDBIT	BOOL	Reserved		D1003.E	W1003.E
V6 DATA RESERVEDBIT	BOOL	Reserved		D1003.F	W1003.F
CONTROL TO V6 LINE SPDREFERENC	INT	Global Line Speed	(user define)	D1004	W1004
CONTROL TO V6 MTR 1 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1005	W1005
CONTROL TO V6 MTR 2 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1006	W1006
CONTROL TO V6 MTR 3 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1007	W1007
CONTROL TO V6 MTR 4 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1008	W1008
CONTROL TO V6 MTR 5 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1009	W1009
CONTROL TO V6 MTR 6 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1010	W100A
CONTROL TO V6 MTR 7 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1011	W100B

CONTROL TO V6 MTR 8 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1012	W100C
CONTROL TO V6 MTR 9 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1013	W100D
CONTROL TO V6 READ BLKTYPE	INT	Parameter Read Block Type	(user define)	D1014	W100E
CONTROL TO V6 READ BLKUID	INT	Parameter Read Block UID	(user define)	D1015	W100F
V6 DATA RESERVEDWORD	INT	Reserved		not used	W1010
V6 DATA RESERVEDWORD	INT	Reserved		not used	W1011
CONTROL TO V6 WR BLK TYPE #1	INT	Parameter Write Block Type #1	(user define)	D1018	W1012
CONTROL TO V6 WR BLK UID	INT	Parameter Write Block UID	(user define)	D1019	W1013
V6 DATA RESERVEDWORD	INT	Reserved		not used	W1014
V6 DATA RESERVEDWORD	INT	Reserved		not used	W1015
CONTROL TO V6 CURRENT DATA 1..16	INT[16]	Current Data	(user define)	D1022-D1037	W1016-W1021
CONTROL TO V6 WR BLK TYPE #2	INT	Parameter Write Block Type #2	(user define)	D1038	W1022

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

Pumps On/Off

Use bits **Set V6 Pump# ON** (D1002.7 – D1002.F) to switch the pumps on and off. Please be aware that bit **GLOBAL_SYSCTRL_BUSCTRL** (Bus takes control of System Status, see page30) must be set (ON) and watchdog toggling must be active for pumps to work.

System On/Off

Use bit **POWER ON** (D1002.0) to switch DynaControl V6 on (TRUE) or off (FALSE). Please be aware that bit **BUS CONTROL ON** (D1003.0) must be set and watchdog toggling must be active. See also page30.

System Stand-By

Use bit **STANDBY ON** (D1002.1) to switch DynaControl V6 to Stand-By mode. Please be aware that bit **BUS CONTROL ON** (D1003.0) must be set and watchdog toggling must be active. See also page30.

Acknowledge Alarms

A trigger on bit **RESET ALARM(S)** (D1002.3) will acknowledge alarms in the DynaControl V6 System. It has the same functionality as acknowledging alarms on the V6 System HMI.

Watchdog

Please supply a toggling signal for bit **WATCHDOG BIT OUT** (D1002.5) to establish communication handshake with the DynaControl V6. The signal can be self-generated (at ~1Hz) or be transferred from the input data bit **WATCHDOG BIT IN** (D2.0) which is recommended. (The Demo program demonstrates this method of communication handshake).

A communication handshake timeout on the watchdog bit will cause the pumps to stop.

Imperial Units

Supplying a logic 1 to bit **IMPERIAL ON** (D1003.8) 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).

Device Comments (Data Register)	Data Type	Description (V6)	Control Device	Data Register	Link Register
Set V6 BUS CONTROL ON	BOOL	Bus takes Control	M0	D1003.0	W1003.0
Set V6 BUS LINESPEED ON	BOOL	Global Line Speed supplied via Bus	M27	D1003.1	W1003.1
CONTROL TO V6 LINE SPDREFERENC	INT	Global Line Speed	(user define)	D1004	W1004
CONTROL TO V6 MTR 1 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1005	W1005
CONTROL TO V6 MTR 2 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1006	W1006
CONTROL TO V6 MTR 3 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1007	W1007
CONTROL TO V6 MTR 4 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1008	W1008
CONTROL TO V6 MTR 5 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1009	W1009
CONTROL TO V6 MTR 6 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1010	W100A
CONTROL TO V6 MTR 7 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1011	W100B
CONTROL TO V6 MTR 8 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1012	W100C
CONTROL TO V6 MTR 9 SETPOINT	INT	Motor SP (0..1000 = 0..100.0%, BIT15 = AUTO)	(user define)	D1013	W100D

BUSCTRL

Bus takes control of System Status (bit **BUS CONTROL ON**) must be set to operate system status and pump functionality (e.g. System on/off, Stand-By, Pumps on/off). See Demo Program. This bit must remain set should control be needed from a remote source.

BUS LINESPEED ON + LINE SPEED REF

If **BUS LINESPEED ON** (D1003.1) is set, the PLC must supply the global main machine line speed directly via field bus. The word **LINE SPD REFERENCE** (D1004) must 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 **CONTROL TO V6 MTR # SETPOINT** (D1005 – D1013) can be set to the desired pump speed (in %x10, 0-1000 = 0-100.0%). The pump will then run with this setpoint, if all conditions are met (system is ready) and the according “pump on bit” is set (D1002.7 – D1002.F).

If bit 15 is set (example: D1005.F for motor 1), the motor will follow the settings of the supplied line speed instead (automatic mode).

Device Comments (Data Register)	Data Type	Description (V6)	Control Device	Data Register	Link Register
CONTROL TO V6 READ BLKTYPE	INT	Parameter Read Block Type	(user define)	D1014	W100E
CONTROL TO V6 READ BLKUID	INT	Parameter Read Block UID	(user define)	D1015	W100F

Read Parameter Block Type

The words **READ BLK TYPE** (D1014) and **READ BLK UID** (D1015) define which exchangeable block is transferred on the READ side. A value of 0 on D1014 will cause the DynaControl V6 to cycle through all known exchangeable parameters blocks. By supplying any value to D1015 the very same value is reflected in the read block to make sure the request got through. The usage of the UID is optional.

Exchangeable Transmit Data Frame

Device Comments (Data Register)	Data Type	Description (V6)	Control Device	Data Register	Link Register
CONTROL TO V6 WR BLK TYPE #1	INT	Parameter Write Block Type #1	(user define)	D1018	W1012
CONTROL TO V6 WR BLK UID	INT	Parameter Write Block UID	(user define)	D1019	W1013
V6 DATA RESERVEDWORD	INT	Reserved		not used	W1014
V6 DATA RESERVEDWORD	INT	Reserved		not used	W1015
CONTROL TO V6 CURRENT DATA 1..16	INT[16]	Current Data	(user define)	D1022- D1037	W1016- W1021
CONTROL TO V6 WR BLK TYPE #2	INT	Parameter Write Block Type #2	(user define)	D1038	W1022

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

If the words **WR BLK TYPE #1** (D1018) and **WR BLK TYPE #2** (D1019) are equal, the value of these words define the content of **CURRENT DATA** (16 words: D1022 – D1037) to be written to the V6 fieldbus.

To transmit custom values in exchangeable data blocks to the V6 fieldbus, follow these steps in sequence:

1. Write a logical 0 into words **WR BLK TYPE #1** (D1018) and **WR BLK TYPE #2** (D1038)
2. Fill in **CURRENT DATA** 1 to 16 (D1022 – D1037) depending on the write Block Type to be sent
3. Write a unique value into word **WR BLK UID** (D1019)
4. Write the desired data block type into words **D1018** and **D1038**
5. Wait until the unique ID has appeared in the READ data block at **LAST SUCC WRITE ID** (D25)
6. Write a logical 0 into words **WR BLK TYPE #1** (D1018) and **WR BLK TYPE #2** (D1019)

Exchangeable Write Block Types

The following exchangeable transmit blocks are defined:

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

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

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

BLK Type	14
Write Parameter # 1	Set Point Temperature (°C/°F) Zone 49
Write Parameter # 2	Set Point Temperature (°C/°F) Zone 50
Write Parameter # 3	Set Point Temperature (°C/°F) Zone 51
Write Parameter # 4	Set Point Temperature (°C/°F) Zone 52
Write Parameter # 5	Set Point Temperature (°C/°F) Zone 53
Write Parameter # 6	Set Point Temperature (°C/°F) Zone 54
Write Parameter # 7	Set Point Temperature (°C/°F) Zone 55
Write Parameter # 8	Set Point Temperature (°C/°F) Zone 56
Write Parameter # 9	Set Point Temperature (°C/°F) Zone 57
Write Parameter # 10	Set Point Temperature (°C/°F) Zone 58
Write Parameter # 11	Set Point Temperature (°C/°F) Zone 59
Write Parameter # 12	Set Point Temperature (°C/°F) Zone 60
Write Parameter # 13	Set Point Temperature (°C/°F) Zone 61
Write Parameter # 14	Set Point Temperature (°C/°F) Zone 62
Write Parameter # 15	Set Point Temperature (°C/°F) Zone 63
Write Parameter # 16	Set Point 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	Line Speed SwP (0..1000=0..100%) Pump 1
Write Parameter # 2	Line Speed SwP (0..1000=0..100%) Pump 2
Write Parameter # 3	Line Speed SwP (0..1000=0..100%) Pump 3
Write Parameter # 4	Line Speed SwP (0..1000=0..100%) Pump 4
Write Parameter # 5	Line Speed SwP (0..1000=0..100%) Pump 5
Write Parameter # 6	Line Speed SwP (0..1000=0..100%) Pump 6
Write Parameter # 7	Line Speed SwP (0..1000=0..100%) Pump 7
Write Parameter # 8	Line Speed SwP (0..1000=0..100%) Pump 8
Write Parameter # 9	Line Speed 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 Line Speed 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 for future software revisions.

Addendum

Standard System Zone Tables

DynaControl 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

DynaControl 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>

DynaControl 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>

DynaControl 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

DynaControl M35

Zone 1	Pre-Melt Grid 1
Zone 2	Hopper
Zone 3	Filter Block
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	Pre-Melt Grid 2

DynaControl M70/M140

Zone 1	Pre-Melt Grid 1
Zone 2	Hopper 1
Zone 3	Filter Block 1
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	Pre-Melt Grid 2
Zone 17	Pre-Melt Grid 3
Zone 18	Hopper 2
Zone 19	Filter Block 2
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	Pre-Melt Grid 4

DynaControl M210

Zone 1	Pre-Melt Grid 1
Zone 2	Hopper 1
Zone 3	Filter Block 1
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	Pre-Melt Grid 2
Zone 17	Pre-Melt Grid 3
Zone 18	Hopper 2
Zone 19	Filter Block 2
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	Pre-Melt Grid 4
Zone 33	Pre-Melt Grid 5
Zone 34	Hopper 3
Zone 35	Filter Block 3
Zone 36	Hose 9
Zone 37	Head 9
Zone 38	Hose 10
Zone 39	Head 10
Zone 40	Hose 11
Zone 41	Head 11
Zone 42	Hose 12
Zone 43	Head 12
Zone 44	Aux 9
Zone 45	Aux 10
Zone 46	Aux 11
Zone 47	Aux 12
Zone 48	Pre-Melt Grid 6

DynaControl Drum Unloader DM55

Zone 1	Platen - Face
Zone 2	Aux 1
Zone 3	Aux 2
Zone 4	Pump Block
Zone 5	<unused>
Zone 6	Hose 1
Zone 7	Head 1
Zone 8	<unused>
Zone 9	<unused>
Zone 10	Hose 2
Zone 11	Head 2
Zone 12	<unused>
Zone 13	<unused>
Zone 14	<unused>
Zone 15	<unused>
Zone 16	Platen - Core

DynaControl Pail Unloader DM5

Zone 1	<unused>
Zone 2	<unused>
Zone 3	<unused>
Zone 4	Pump Block
Zone 5	<unused>
Zone 6	Hose 1
Zone 7	Head 1
Zone 8	<unused>
Zone 9	<unused>
Zone 10	Hose 2
Zone 11	Head 2
Zone 12	<unused>
Zone 13	<unused>
Zone 14	<unused>
Zone 15	<unused>
Zone 16	Platen - Core

DynaControl LC-Melter

Zone 1	Pre-Melt Grid 1
Zone 2	Pre-Melt Grid 2
Zone 3	Pre-Melt Grid 3
Zone 4	Pre-Melt Grid 4
Zone 5	Pre-Melt Grid 5
Zone 6	Pre-Melt Grid 6
Zone 7	Pre-Melt Grid 7
Zone 8	Pre-Melt Grid 8
Zone 9	Pre-Melt Grid 9
Zone 10	Pre-Melt Grid 10
Zone 11	Pre-Melt Grid 11
Zone 12	Pre-Melt Grid 12

Zone 13	Pre-Melt Grid 13
Zone 14	Pre-Melt Grid 14
Zone 15	Pre-Melt Grid 15
Zone 16	Pre-Melt Grid 16
Zone 17	Hopper
Zone 18	Filter Block
Zone 19	T-Block
Zone 20	Inlet Block
Zone 21	Die-Block
Zone 22	Aux 1
Zone 23	Aux 2
Zone 24	Aux 3
Zone 25	Aux 4
Zone 26	Aux 5
Zone 27	Aux 6
Zone 28	Aux 7
Zone 29	Aux 8
Zone 30	Aux 9
Zone 31	Aux 10
Zone 32	Aux 11
Zone 33	Aux 12
Zone 34	Aux 13
Zone 35	Aux 14
Zone 36	Aux 15
Zone 37	Aux 16
Zone 38	Hose 1
Zone 39	Head 1
Zone 40	Hose 2
Zone 41	Head 2
Zone 42	Hose 3
Zone 43	Head 3
Zone 44	Hose 4
Zone 45	Head 4
Zone 46	<unused>
Zone 47	<unused>
Zone 48	<unused>