

Module Definitions, IO Bytes, and Data Length for FIELDVUE™ DVC6200p PROFIBUS PA Digital Valve Controller

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A GSD file contains information about the device capabilities.

Modules are defined within the GSD. Each module represents a distinct sub set of parameter values for a specific function block in the DVC6200p; each function block can have one or more modules defined.

Slots originate in the Class 1 Master (Configuration Host) and represent an address range of bytes. Typically, slots will define address ranges for Input values (I) and other address ranges for Output values (Q).

If a Slot is not used it must NOT be null or blank. It must be assigned as an Empty Module.

Modules are assigned to specific Slots. For example any of the AO modules must be assigned to Slot 1. If a DO module is required it must be assigned to Slot 3. The slot assignments are defined in the device GSD file *FC051037.gsd*.

<u>Slot Definition</u>	<u>Module</u>
Slot (1) = AO	2 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15
Slot (2) = AI	16 1,16,17
Slot (3) = DO	18 1,18,19,20,21,22,23,24
Slot (4) = DI 1	1 25 1,25
Slot (5) = DI 2	2 25 1,25

Note

The AO module is always assigned to the first slot. In some systems the first slot is defined as 0; consequently the AO module will be defined as Slot 0, the AI module will be defined as Slot 1, etc.

The example below shows an AO Module, number 5, assigned to Slot 1. The slots that are not used have been assigned as an EMPTY_MODULE. Different Class 1 Masters will present different views and may have a different number of configurable slot locations.

Slot	DPID	Order Number / Designation
1	198	AO_SP_RDBK_POSD(L)
2	0	EMPTY_MODULE
3	0	EMPTY_MODULE
4	0	EMPTY_MODULE
5	0	EMPTY_MODULE
6		

The below example is from a Siemens PCS7. On the right pane the DVC6200p is selected. All of the modules available for the device are listed. In this example Module 9 has been selected.

With the graphic image of the DVC6200p highlighted slot assignments are made in the table for the DVC6200p.

The AO module 9 has been assigned to Slot 0 (the first slot) in this example. Unused slots must be defined as EMPTY_MODULE as shown below and not as Blank or Null. Most control systems define the Inputs (I) and Output (Q) address ranges automatically.

The screenshot displays the Siemens PCS7 hardware configuration interface. At the top, a rack configuration is shown with the following modules: Slot 1: CPU315-2 DP (1); Slot 2: DP; Slot 3: IM 157 (4); Slot 4: SIMOC (12); Slot 5: AUMA (10); Slot 6: DVC6200p (50) in Slot 0; Slot 7: ND50C (42); Slot 8: Positor (43). Below the rack diagram is a table for the DVC6200p Profibus PA module:

Slot	DP ID	Order Number / Designation	I Address	Q Address	Comment
0	199	AO_SP_RDBK_POSD_CKBK(L)	273..282	266..270	
1	0	EMPTY_MODULE			
2	0	EMPTY_MODULE			
3	0	EMPTY_MODULE			
4	0	EMPTY_MODULE			

On the right side of the interface, a list of available modules for the DVC6200p is shown, with 'AO_SP_RDBK_POSD_CKBK(L)' selected and highlighted in red.

AO Module

Slot 1 Assignment

Module	Module Name	Input Bytes	Output Bytes
1	EMPTY_MODULE	0	0
2	AO_SP(S)	0	5
3	AO_SP(L)	0	5
4	AO_SP_RDBK_POSD(S)	7	5
5	AO_SP_RDBK_POSD(L)	7	5
6	AO_SP_CKBK(S)	3	5
7	AO_SP_CKBK(L)	3	5
8	AO_SP_RDBK_POSD_CKBK(S)	10	5
9	AO_SP_RDBK_POSD_CKBK(L)	10	5
10	AO_RIN_ROUT(S)	5	5
11	AO_RIN_ROUT(L)	5	5
12	AO_RIN_ROUT_CKBK(S)	8	5
13	AO_RIN_ROUT_CKBK(L)	8	5
14	AO_SP_RDBK_RIN_ROUT_POSD(S)	15	10
15	AO_SP_RDBK_RIN_ROUT_POSD(L)	15	10

Module 2

AO_SP(S)

Module Definition	AO_SP(S)
Input data length	0
Output data length	5
Parameter data length	0
Identifiers	0xA4

AO_SP(S)

AO_SP(L)

SP Setpoint	
Output (master view)	
Initial Address	0
	1
	2
	3
	4
	SP - floating-point number
	SP - status

Module 3

AO_SP(L)

Module Definition	AO_SP(L)
Input data length	0
Output data length	5
Parameter data length	0
Identifiers	0x82, 0x84, 0x8, 0x5

Module 4

AO_SP_RDBK_POSD(S)

Module Definition	AO_SP_RDBK_POSD(S)
Input data length	7
Output data length	5
Parameter data length	0
Identifiers	0x96, 0xA4

Module 5

AO_SP_RDBK_POSD(L)

Module Definition	AO_SP_RDBK_POSD(L)
Input data length	7
Output data length	5
Parameter data length	0
Identifiers:	0xC6, 0x84, 0x86, 0x8, 0x5, 0x8, 0x5, 0x5, 0x5

AO_SP_RDBK_POSD(S) AO_SP_RDBK_POSD(L)

READBACK, POS_D, SP			Readback, position discrete, setpoint		
Input (master view)					
Initial Address	0	READBACK - floating-point number			
	1				
	2				
	3				
	4	READBACK - status			
	5	POS_D			
6	POS_D - status				
Output (master view)					
Initial Address	0	SP - floating-point number			
	1				
	2				
	3				
	4	SP - status			

Module 6

AO_SP_CKBK(S)

Module Definition	AO_SP_CKBK(S)
Input data length	3
Output data length	5
Parameter data length	0
Identifiers	0x92, 0xA4

Module 7

AO_SP_CKBK(L)

Module Definition	AO_SP_CKBK(L)
Input data length	3
Output data length	5
Parameter data length	0
Identifiers	0xC3, 0x84, 0x82, 0x8, 0x5, 0xA

AO_SP_CKBK(S) AO_SP_CKBK(L)

Checkback, SP			Checkback, setpoint		
Input (master view)					
Initial Address	0	CHECKBACK			
	1				
	2				
Output (master view)					
Initial Address	0	SP - floating-point number			
	1				
	2				
	3				
	4	SP - status			

Module 8

AO_SP_RDBK_POSD_CKBK(S)

Module Definition	AO_SP_RDBK_POSD_CKBK(S)
Input data length	10
Output data length	5
Parameter data length	0
Identifiers	0x99, 0xA4

Module 9

AO_SP_RDBK_POSD_CKBK(L)

Module Definition	AO_SP_RDBK_POSD_CKBK(L)
Input data length	10
Output data length	5
Parameter data length	0
Identifiers	0xC7, 0x84, 0x89, 0x8, 0x5, 0x8, 0x5, 0x5, 0x5, 0xA

AO_SP_RDBK_POSD(S) AO_SP_RDBK_POSD(L)

READBACK, POS_D, SP			Readback, position discrete, setpoint
Input (master view)			
Initial Address	0		
	1		READBACK - floating-point number
	2		
	3		
	4		READBACK - status
	5		POS_D
	6		POS_D - status
Output (master view)			
Initial Address	0		
	1		SP - floating-point number
	2		
	3		
	4		SP - status

Module 10

AO_RIN_ROUT(S)

Module Definition	AO_RIN_ROUTES(S)
Input data length	5
Output data length	5
Parameter data length	0
Identifiers	0xB4

Module 11

AO_RIN_ROUT(L)

Module Definition	AO_RIN_ROUT(L)
Input data length	5
Output data length	5
Parameter data length	0
Identifiers	0xC4, 0x84, 0x84, 0x8, 0x5, 0x8, 0x5

AO_RIN_ROUTES(S) AO_RIN_ROUTES(L)

RCAS_OUT RCAS_IN			Remote cascade output, remote cascade input
Input (master view)			
Initial Address	0		
	1		RCAS_OUT - floating-point number
	2		
	3		
	4		RCAS_OUT - status
Output (master view)			
Initial Address	0		
	1		RCAS_IN - floating-point number
	2		
	3		
	4		RCAS_IN - status

Module 12

AO_RIN_ROUT_CKBK(S)

Module Definition	AO_RIN_ROUT_CKBK(S)
Input data length	8
Output data length	5
Parameter data length	0
Identifiers	0x97, 0xA4

Module 13

AO_RIN_ROUT_CKBK(L)

Module Definition	AO_RIN_ROUT_CKBK(L)
Input data length	8
Output data length	5
Parameter data length	0
Identifiers	0xC5, 0x84, 0x87, 0x8, 0x5, 0x8, 0x5, 0xA

AO_RIN_ROUT_CKBK(S) AO_RIN_ROUT_CKBK(L)

RCAS_OUT	Readback cascade output, checkback,	
CHECKBACK	remote cascade input	
RCAS_IN		
Input (master view)		
Initial Address	0	RCAS_OUT - floating-point number
	1	
	2	
	3	
	4	RCAS_OUT - status
	5	CHECKBACK
	6	
	7	
Output (master view)		
Initial Address	0	RCAS_IN - floating-point number
	1	
	2	
	3	
	4	RCAS_IN - status

Module 14

AO_SP_RDBK_RIN_ROUT_POSD_CKBK(S)

Module Definition	AO_SP_RDBK_RIN_ROUT_POSD_CKBK(S)
Input data length	15
Output data length	10
Parameter data length	0
Identifiers	0x9E, 0XA9

Module 15

AO_SP_RDBK_RIN_ROUT_POSD_CKBK(L)

Module Definition	AO_SP_RDBK_RIN_ROUT_POSD_CKBK(L)
Input data length	15
Output data length	10
Parameter data length	0
Identifiers	0xCB, 0x89, 0x8E, 0x8, 0x5, 0x8, 0x5, 0x8, 0x5, 0x8, 0x5

AO_SP_RDBK_RIN_ROUT_POSD_CKBK(S) AO_SP_RDBK_RIN_ROUT_POSD_CKBK(L)

READBACK, RCAS_OUT, POS_D, CHECKBACK, SP, RCAS_IN		Readback, remote cascade output, position discrete, checkback, setpoint, remote cascade input
Input (master view)		
Initial Address	0	
	1	READBACK - floating-point number
	2	
	3	
	4	READBACK - status
	5	
	6	RCAS_OUT - floating-point number
	7	
	8	
	9	RCAS_OUT - Status
	10	POS_D
	11	POS_D - Status
	12	
	13	CHECKBACK
	14	
Output (master view)		
Initial Address	0	
	1	SP - floating-point number
	2	
	3	
	4	SP - status
	5	
	6	RCAS_IN - floating-point number
	7	
	8	
	9	RCAS_IN - Status

AI Module

Slot 2 Assignment

Module	Module Name	Input Bytes	Output Bytes
16	AI_OUT(S)	5	0
17	AI_OUT(L)	5	0

Module 16

AI_OUT(S)

Module Definition	AI_OUTS(S)
Input data length	5
Output data length	0
Parameter data length	0
Identifiers	0x94

Module 17

AI_OUT(L)

Module Definition	AI_OUTS(L)
Input data length	5
Output data length	0
Parameter data length	0
Identifiers	0x42, 0x84, 0x5

DO Module

Slot 3 Assignment

Module	Module Name	Input Bytes	Output Bytes
18	DO_SP	0	2
19	DO_SP_RDBK	2	2
20	DO_SP_CKBK	3	2
21	DO_SP_RDBK_CKBK	5	2
22	DO_RIN_ROUT	2	2
23	DO_RIN_ROUT_CKBK	5	2
24	DO_SP_RDBK_RIN_ROUT_CKBK	7	4

Module 18

DO_SP

Module Definition	DO_SP
Input data length	0
Output data length	2
Parameter data length	0
Identifiers	0xA1

Module 22

DO_RIN_OUT

Module Definition	DO_RIN_ROUT
Input data length	2
Output data length	2
Parameter data length	0
Identifiers	0xC1, 0x81, 0x81, 0x8C

Module 19

DO_SP_RDBK

Module Definition	DO_SP_RDBK
Input data length	2
Output data length	2
Parameter data length	0
Identifiers	0xC1, 0x81, 0x81, 0x83

Module 23

DO_RIN_ROUT_CKBK

Module Definition	DO_RIN_ROUT_CKBK
Input data length	5
Output data length	2
Parameter data length	0
Identifiers	0xC1, 0x81, 0x84, 0x9C

Module 20

DO_SP_CKBK

Module Definition	DO_SP_CKBK
Input data length	3
Output data length	2
Parameter data length	0
Identifiers	0xC1, 0x81, 0x82, 0x92

Module 24

DO_SP_RDBK_ROUT_CKBK

Module Definition	DO_SP_RDBK_RIN_ROUT_CKBK
Input data length	7
Output data length	4
Parameter data length	0
Identifiers	0xC1, 0x83, 0x86, 0x9F

Module 21

DO_SP_RDBK_CKBK

Module Definition	DO_SP_RDBK_CKBK
Input data length	5
Output data length	2
Parameter data length	0
Identifiers	0xC1, 0x81, 0x84, 0x93

DI Module

Slot 4 DI1 Assignment
Slot 5 DI2 Assignment

Module	Module Name	Input Bytes	Output Bytes
25	DI_OUT	2	0

Module 25

DI_OUT

Module Definition	DI_OUT
Input data length	2
Output data length	0
Parameter data length	0
Identifiers	0x91

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