

AG24

Function Block for TIA Portal®

Counter and Error Values

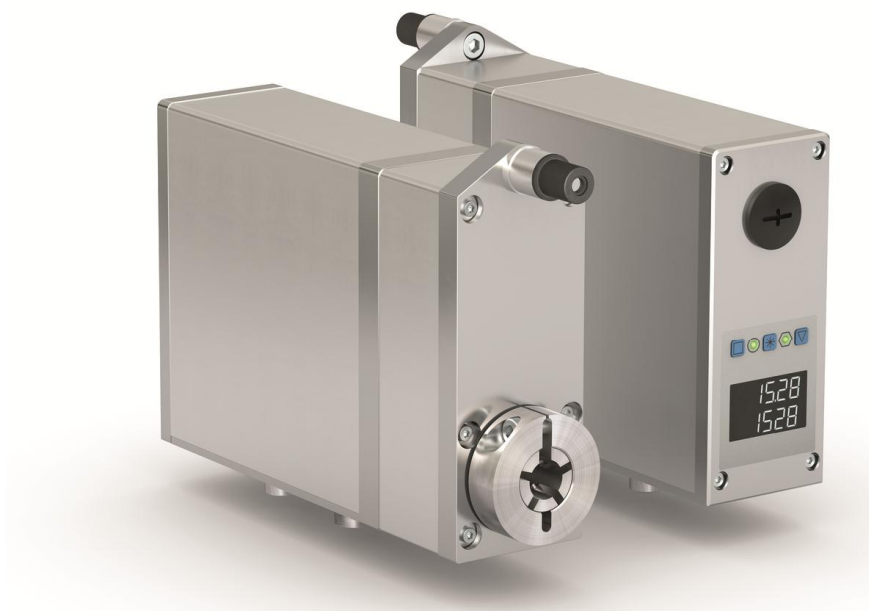


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1 Document History

Date [dd.mm.jjjj]	Version [x.y]	Author	Description
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23.05.2018	0.2	ch	Draft, changed order of chapters
28.05.2018	1.0	ch	Release

2 Counter Value

Read	Write	Name	Value range (dec)	Default
1	1	Service Interface Baud Rate	0 ... 3	1
2	2	Generic Mapping Parameter	0 ... 10	0
3	3	Peak Current Limit	0 ... 12000	12000
4	4	Peak Current Time	0 ... 40	40
5	5	Continuous Current	0 ... 7500	7500
6	6	Digital Output 1 Functionality	0 ... 5	0
7		Digital Output Functionalities State		-
8	7	Digital Outputs Polarity	0 ... 1	0
9	8	Digital Input 1 Functionality	0 ... 15	0
10	9	Digital Input 2 Functionality	0 ... 15	0
11	10	Digital Input 3 Functionality	0 ... 15	0
12	11	Digital Input 4 Functionality	0 ... 15	0
13		Digital Input Functionalities State		-
14	12	Digital Inputs Polarity	0 ... 15	0
15	13	Controller Parameter P	1 ... 500	300
16	14	Controller Parameter I	0 ... 500	2
17	15	Controller Parameter D	0 ... 500	0
18	16	A-Pos	1 ... 100	50
19	17	V-Pos	Gear 30.6 \Rightarrow 1 ... 150 rpm 50.0 \Rightarrow 1 ... 90 rpm 70.8 \Rightarrow 1 ... 64 rpm	10
20	18	D-Pos	1 ... 101	101
21	19	A-Rot	1 ... 100	50
22	20	A-Inch	1 ... 100	50

Read	Write	Name	Value range (dec)	Default
23	21	V-Inch	Gear 30.6 \Rightarrow 1 ... 150 rpm 50.0 \Rightarrow 1 ... 90 rpm 70.8 \Rightarrow 1 ... 64 rpm	10
24	22	Pos Window	0 ... 1000	10
25	23	Gear Ratio Numerator	1 ... 10000	1
26	24	Gear Ratio Denominator	1 ... 10000	1
27	25	Spindle Pitch	0 ... 1000000	0
28	26	Calibration Value	-999999 ... 999999	0
29	27	Software Limit 1	-2097152 ... 2097151	999999
30	28	Software Limit 2	-2097152 ... 2097151	-199999
31	29	Delta Inch	-1000000 ... 1000000	1024
32	30	Sense of Rotation	0 ... 1	0
33	31	Pos Type	0 ... 2	0
34	32	Operating Mode	0 ... 1	0
35	33	Inching 2 Stop Mode	0 ... 1	0
36	34	Inpos Mode	0 ... 2	0
37	35	Loop Length	0 ... 30000	512
38	36	Contouring Error Limit	1 ... 30000	1024
39	37	Inching 2 Offset	10 ... 100	100
40	38	Inching 2 Acceleration Type	0 ... 1	0
41	39	Offset Value	-999999 ... 999999	0
42	40	Display Divisor	0 ... 3	0
43	41	Display Divisor Application	0 ... 1	0
44	42	Display Orientation	0 ... 1	0
45	43	Decimal Places	0 ... 4	0
46	44	Direction Indication Function	0 ... 2	0
47	45	Displayed Value 2nd Line	0 ... 9	0
48	46	Key Enable Time	1 ... 60	3
49	47	Key Function Enable	0 ... 1	0
50	48	PIN change	0 ... 99999	0
51	49	Travel Against Load Trigger	0 ... 7500	0
52	50	Travel Against Load Direction	0 ... 1	0
53	51	PCM Position 1	-2097152 ... 2097151	0
54	52	PCM Position 2	-2097152 ... 2097151	0
55	53	PCM Position 3	-2097152 ... 2097151	0
56	54	PCM Position 4	-2097152 ... 2097151	0
57	55	PCM Position 5	-2097152 ... 2097151	0
58	56	PCM Position 6	-2097152 ... 2097151	0
59	57	PCM Position 7	-2097152 ... 2097151	0
60	58	PCM Acceleration 1	1 ... 100	50
61	59	PCM Acceleration 2	1 ... 100	50

Read	Write	Name	Value range (dec)	Default
62	60	PCM Acceleration 3	1 ... 100	50
63	61	PCM Acceleration 4	1 ... 100	50
64	62	PCM Acceleration 5	1 ... 100	50
65	63	PCM Acceleration 6	1 ... 100	50
66	64	PCM Acceleration 7	1 ... 100	50
67	65	PCM Velocity 1	Gear 30.6 \Rightarrow 1 ... 150 rpm 50.0 \Rightarrow 1 ... 90 rpm 70.8 \Rightarrow 1 ... 64 rpm	10
68	66	PCM Velocity 2	see PCM Velocity 1	10
69	67	PCM Velocity 3	see PCM Velocity 1	10
70	68	PCM Velocity 4	see PCM Velocity 1	10
71	69	PCM Velocity 5	see PCM Velocity 1	10
72	70	PCM Velocity 6	see PCM Velocity 1	10
73	71	PCM Velocity 7	see PCM Velocity 1	10
74	72	PCM Deceleration 1	1 ... 101	101
75	73	PCM Deceleration 2	1 ... 101	101
76	74	PCM Deceleration 3	1 ... 101	101
77	75	PCM Deceleration 4	1 ... 101	101
78	76	PCM Deceleration 5	1 ... 101	101
79	77	PCM Deceleration 6	1 ... 101	101
80	78	PCM Deceleration 7	1 ... 101	101
81		Output Stage Temperature		-
82		Voltage of Control		-
83		Voltage of Output Stage		-
84		Motor Current		-
85		Actual Position		-
86		Actual Rotational Speed		-
87		Serial Number		-
88		Production Date		-
89		SW Motor Controller		-
90		Gear Reduction		-
91		System Status Word		-
92		Encoder Resolution		-
93		Device ID		-
94		Virtual Motor Temperature		-
95		Overload		-
96		Actual Contouring Error		-
97		Number of Errors		-
98		Error Number 1		-
99		Error Number 2		-
100		Error Number 3		-

Read	Write	Name	Value range (dec)	Default
101		Error Number 4		-
102		Error Number 5		-
103		Error Number 6		-
104		Error Number 7		-
105		Error Number 8		-
106		Error Number 9		-
107		Error Number 10		-
108	79	Configuration	0 ... 65535	-
109	80	S-Command	0 ... 9	-

3 Error Codes

The "nStatus" output parameter contains error information. If it is interpreted as ARRAY[1...4] OF BYTE , the error information has the following structure:

Field element	Name	Meaning
status[1]	Function_Num	B#16#00, if no error Function ID from DPV1-PDU: B#16#80, will be output if error B#16#DE, for read data record error B#16#DF, for write data record error If no DPV1 protocol element is used: B#16#C0
status[2]	Error Decode	Location of the error ID
status[3]	Error_Code_1	Error ID
status[4]	Error_Code_2	Manufacturer-specific error ID extension

3.1 Field Element Status [2]

status[2] can have the following values:

Error Decode (B#16#...)	Source	Meaning
00 to 7F	CPU	No error or no warning
80	DPV1	Error according to IEC 61158-6
81 to 8F	CPU	B#16#8x shows an error in the xth call parameter of the instruction
FE, FF	DP profile	Profile-specific error

3.2 Field Element Status [3]

Error_Decode (B#16#...)	Error_Code_1 (B#16#...)	Explanation according to DPV1	Meaning
0	00		No error, no warning
70	00	reserved, reject	Initial call; no active data record transfer
70	01	reserved, reject	Initial call; data record transfer has started
70	02	reserved, reject	Intermediate call; data record transfer already active
80	90	reserved, pass	Invalid logical start address
80	92	reserved, pass	Illegal type for ANY pointer
80	93	reserved, pass	The DP component addressed via ID or F_ID is not configured
80	95		Error when reading additional interrupt information (when reading out additional interrupt information for central or distributed I/O via an external DP interface, this error will be output as a group error.) Note: During link-up and update, the additional interrupt information may not be available temporarily.
80	96		The master CPU is in STOP mode. At that time, an OB was being processed. The instruction "RALRM" cannot supply the OB start information, the management information, the header information, or the additional interrupt information. The OB start information can be read with the "RD_SINFO" instruction. In addition, you can use the "DPNRM_DG" instruction to asynchronously read the current diagnostics frame of the affected DP slave for OBs 4x, 55, 56, 57, 82, and 83 (address information from the OB start information).
80	A0	read error	Negative acknowledgment while reading the module.
80	A1	write error	Negative acknowledgement when writing to the module
80	A2	module failure	DP protocol error at layer 2 (e.g., slave failure or bus problems)
80	A3	reserved, pass	PROFIBUS® DP: DP protocol error with Direct-Data-Link-Mapper or User-Interface/User PROFINET® IO: General CM error

Error_Decode (B#16#...)	Error_Code_1 (B#16#...)	Explanation according to DPV1	Meaning
80	A4	reserved, pass	Communication on the communication bus disrupted
80	A5	reserved, pass	-
80	A7	reserved, pass	DP slave or module is occupied (temporary error)
80	A8	version conflict	DP slave or module reports non-compatible versions
80	A9	feature not supported	Function is not supported by DP slave or module
80	AA to AF	user specific	DP slave or module reports a manufacturer-specific error in its application. Please check the documentation from the manufacturer of the DP slave or module.
80	B0	invalid index	Data record not known in module Illegal data record number ≥ 256
80	B1	write length error	The length specified in the RECORD parameter is incorrect; With "RALRM": length error in AINFO, With "RDREC" and "WRREC": length error in MLEN
80	B2	invalid slot	The configured slot is not occupied.
80	B3	type conflict	Actual module type does not match specified module type
80	B4	invalid area	DP slave or module reports access to an invalid area
80	B5	state conflict	DP slave or module not ready
80	B6	access denied	DP slave or module denies access
80	B7	invalid range	DP slave or module reports an invalid range for a parameter or value
80	B8	invalid parameter	DP slave or module reports an invalid parameter
80	B9	invalid type	DP slave or module reports an invalid type With "RDREC": buffer too small (subsets cannot be read) With "WRREC": buffer too small (subsets cannot be written)

Error_Decode (B#16#...)	Error_Code_1 (B#16#...)	Explanation according to DPV1	Meaning
80	BA to BF	user specific	<p>DP slave or module reports a manufacturer-specific error when accessing. Please check the documentation from the manufacturer of the DP slave or module.</p> <p>Note on value B#16#BA: The following applies for PROFINET® in the H system: If a data record job with the return value W#16#80BA is rejected, the job must be repeated.</p>
80	C0	read constrain conflict	<p>With "WRREC": the data can only be written when the CPU is in STOP mode. Note: this means that writing by the user program is not possible. You can only write the data online with PG/PC.</p> <p>With "RDREC": the module routes the data record, but either no data is present or the data can only be read when the CPU is in STOP mode. Note: if data can only be read when the CPU is in STOP mode, then an evaluation by the user program is not possible. In this case, you can only read the data online with PG/PC.</p>
80	C1	write constrain conflict	The data of the previous write job on the module for the same data record have not yet been processed by the module.
80	C2	resource busy	The module is currently processing the maximum possible number of jobs for a CPU.
80	C3	resource unavailable	The required operating resources are currently occupied.
80	C4		<p>Internal temporary error. Job could not be carried out.</p> <p>Repeat the job. If this error occurs often, check your installation for sources of electrical interference.</p>
80	C5		DP slave or module not available.
80	C6		Data record transfer was canceled due to priority class cancellation
80	C7		Job aborted due to warm or cold restart on the DP master

Error_Decode (B#16#...)	Error_Code_1 (B#16#...)	Explanation according to DPV1	Meaning
80	C8 to CF		DP slave or module reports a manufacturer-specific resource error. Please check the documentation from the manufacturer of the DP slave or module.
80	Dx	user specific	DP slave specific. Refer to the description of the DP slave.
8x (x=1, ... 9,A,B,C,D,E,F)	00 to FF		Error in y-th call parameter (y = 1, ...15) Error_Code_1 = 00: Illegal operating mode For all other values of Error_Code_1 refer also to: Evaluating errors with output parameter RET_VAL
FE, FF	00 to FF		Profile-specific error

3.3 Field Element Status [4]

In PROFINET® IO, status[4] has the value 0