

Function Block

Reversion 1.0

Microcyber Inc.

TABLE OF CONTENTS

1	Block Parameter	1
1.1	Resource Block	1
1.2	Analog Input Block.....	2
1.3	Discrete Input Block	3
1.4	AO Output Block	4
1.5	DO Output Block	5
1.6	Bias/Gain Block.....	5
1.7	Ratio Control Block.....	6
1.8	Lead Lag Block	8
1.9	PID Control Block	8
1.10	Input Selector Block.....	10
1.11	Arithmetic Block.....	11
1.12	Signal Characterizer Block	12
1.13	Integrator Block.....	13
2	Parameter Attribute Definitions	15
2.1	Function Block Parameter Attribute Definitions	15
2.2	Transducer Parameter Attribute Definitions	23
3	Parameter Descriptions.....	30
3.1	Function Block Parameter Descriptions.....	30
3.2	Transducer Parameter Descriptions.....	36

1 Block Parameter

1.1 Resource Block

Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
1	ST_REV	2	2	2	2
2	TAG_DESC				
3	STRATEGY				2
4	ALERT_KEY				1
5	MODE_BLK	4		4	
6	BLOCK_ERR	2		2	
7	RS_STATE	1		1	
8	TEST_RW				
9	DD_RESOURCE				
10	MANUFAC_ID				4
11	DEV_TYPE				2
12	DEV_REV				1
13	DD_REV				1
14	GRANT_DENY		2		
15	HARD_TYPES				2
16	RESTART				
17	FEATURES				2
18	FEATURE_SEL		2		
19	CYCLE_TYPE				2
20	CYCLE_SEL		2		
21	MIN_CYCLE_T				4
22	MEMORY_SIZE				2
23	NV_CYCLE_T		4		
24	FREE_SPACE		4		
25	FREE_TIME	4		4	
26	SHED_RCAS		4		
27	SHED_ROUT		4		
28	FAULT_STATE	1		1	
29	SET_FSTATE				
30	CLR_FSTATE				
31	MAX_NOTIFY				1



Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
32	LIM_NOTIFY		1		
33	CONFIRM_TIME		4		
34	WRITE_LOCK		1		
35	UPDATE_EVT				
36	BLOCK_ALM				
37	ALARM_SUM	8		8	
38	ACK_OPTION				2
39	WRITE_PRI				1
40	WRITE_ALM				
41	ITK_VER				2
	Totals	22	30	22	31

1.2 Analog Input Block

Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
1	ST_REV	2	2	2	2
2	TAG_DESC				
3	STRATEGY				2
4	ALERT_KEY				1
5	MODE_BLK	4		4	
6	BLOCK_ERR	2		2	
7	PV	5		5	
8	OUT	5		5	
9	SIMULATE				
10	XD_SCALE		11		
11	OUT_SCALE		11		
12	GRANT_DENY		2		
13	IO_OPTS				2
14	STATUS_OPTS				2
15	CHANNEL				2
16	L_TYPE				1
17	LOW_CUT				4
18	PV_FTIME				4
19	FIELD_VAL	5		5	
20	UPDATE_EVT				
21	BLOCK_ALM				
22	ALARM_SUM	8		8	
23	ACK_OPTION				2



Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
24	ALARM_HYS				4
25	HI_HI_PRI				1
26	HI_HI_LIM				4
27	HI_PRI				1
28	HI_LIM				4
29	LO_PRI				1
30	LO_LIM				4
31	LO_LO_PRI				1
32	LO_LO_LIM				4
33	HI_HI_ALM				
34	HI_ALM				
35	LO_ALM				
36	LO_LO_ALM				
	Totals	31	26	31	46

1.3 Discrete Input Block

Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
1	ST_REV	2	2	2	2
2	TAG_DESC				
3	STRATEGY				2
4	ALERT_KEY				1
5	MODE_BLK	4		4	
6	BLOCK_ERR	2		2	
7	PV_D	2		2	
8	OUT_D	2		2	
9	SIMULATE_D				
10	XD_STATE		2		
11	OUT_STATE		2		
12	GRANT_DENY		2		
13	IO_OPTS				2
14	STATUS_OPTS				2
15	CHANNEL				2
16	PV_FTIME				4
17	FIELD_VAL_D	2		2	
18	UPDATE_EVT				
19	BLOCK_ALM				
20	ALARM_SUM	8		8	
21	ACK_OPTION				



Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
22	DISC_PRI				2
23	DISC_LIM				1
24	DISC_ALM				1
	Totals	22	8	22	19

1.4 AO Output Block

Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
1	ST_REV	2	2	2	2
2	TAG_DESC				
3	STRATEGY				2
4	ALERT_KEY				1
5	MODE_BLK	4		4	
6	BLOCK_ERR	2		2	
7	PV	5		5	
8	SP	5		5	
9	OUT	5		5	
10	SIMULATE				
11	PV_SCALE		11		
12	XD_SCALE		11		
13	GRANT_DENY		2		
14	IO_OPTS				2
15	STATUS_OPTS				2
16	READBACK	5		5	
17	CAS_IN	5		5	
18	SP_RATE_DN				4
19	SP_RATE_UP				4
20	SP_HI_LIM		4		
21	SP_LO_LIM		4		
22	CHANNEL				2
23	FSTATE_TIME				4
24	FSTATE_VAL				4
25	BKCAL_OUT		5		
26	RCAS_IN		5		
27	SHED_OPT				1
28	RCAS_OUT		5		
29	UPDATE_EVT				
30	BLOCK_ALM				
	Totals	33	34	48	28

1.5 DO Output Block

Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
1	ST_REV	2	2	2	2
2	TAG_DESC				
3	STRATEGY				2
4	ALERT_KEY				1
5	MODE_BLK	4		4	
6	BLOCK_ERR	2		2	
7	PV_D	2		2	
8	SP_D	2		2	
9	OUT_D	2		2	
10	SIMULATE_D				
11	PV_STATE		2		
12	XD_STATE		2		
13	GRANT_DENY		2		
14	O_OPTS				2
15	STATUS_OPTS				2
16	READBACK_D	2		2	
17	CAS_IN_D	2		2	
18	CHANNEL				2
19	FSTATE_TIME				4
20	FSTATE_VAL_D				1
21	BKCAL_OUT_D			2	
22	RCAS_IN_D			2	
23	SHED_OPT				1
24	RCAS_OUT_D			2	
25	UPDATE_EVT				
26	BLOCK_ALM				
	Totals	18	8	24	17

1.6 Bias/Gain Block

Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
1	ST_REV	2	2	2	2
2	TAG_DESC				
3	STRATEGY				2
4	ALERT_KEY				1



Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
5	MODE_BLK	4		4	
6	BLOCK_ERR	2		2	
7	SP	5		5	
8	OUT	5		5	
9	OUT_SCALE		11		
10	GRANT_DENY		2		
11	CONTROL_OPTS				2
12	STATUS_OPTS				2
13	IN_1			5	
14	CAS_IN	5		5	
15	SP_RATE_DN				4
16	SP_RATE_UP				4
17	SP_HI_LIM		4		
18	SP_LO_LIM		4		
19	GAIN				4
20	BAL_TIME				4
21	BKCAL_IN			5	
22	OUT_HI_LIM		4		
23	OUT_LO_LIM		4		
24	BKCAL_OUT			5	
25	RCAS_IN			5	
26	SHED_OPT				1
27	RCAS_OUT			5	
28	TRK_SCALE				11
29	TRK_IN_D	2		2	
30	TRK_VAL	5		5	
31	UPDATE_EVT				
32	BLOCK_ALM				
	Totals	30	31	55	37

1.7 Ratio Control Block

Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
1	ST_REV	2	2	2	2
2	TAG_DESC				
3	STRATEGY				2
4	ALERT_KEY				1
5	MODE_BLK	4		4	
6	BLOCK_ERR	2		2	
7	PV	5		5	
8	SP	4		4	



Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
9	OUT	5		5	
10	PV_SCALE		11		
11	OUT_SCALE		11		
12	GRANT_DENY		2		
13	CONTROL_OPTS				2
14	STATUS_OPTS				2
15	IN			5	
16	PV_FTIME				4
17	IN_1			5	
18	RA_FTIME				4
19	CAS_IN	5		5	
20	SP_RATE_DN				4
21	SP_RATE_UP				4
22	SP_HI_LIM		4		
23	SP_LO_LIM		4		
24	GAIN				4
25	BKCAL_IN			5	
26	OUT_HI_LIM		4		
27	OUT_LO_LIM		4		
28	BKCAL_OUT			5	
29	BAL_TIME				4
30	RCAS_IN			5	
31	SHED_OPT				1
32	RCAS_OUT			5	
33	TRK_SCALE				11
34	TRK_IN_D	2		2	
35	TRK_VAL	5		5	
36	UPDATE_EVT				
37	BLOCK_ALM				
38	ALARM_SUM	8		8	
39	ACK_OPTION				2
40	ALARM_HYS				4
41	HI_HI_PRI				1
42	HI_HI_LIM				4
43	HI_PRI				1
44	HI_LIM				4
45	LO_PRI				1
46	LO_LIM				4
47	LO_LO_PRI				1
48	LO_LO_LIM				4
49	DV_HI_PRI				1
50	DV_HI_LIM				4

Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
51	DV_LO_PRI				1
52	DV_LO_LIM				4
53	HI_HI_ALM				
54	HI_ALM				
55	LO_ALM				
56	LO_LO_ALM				
57	DV_HI_ALM				
58	DV_LO_ALM				
	Totals	42	42	72	81

1.8 Lead Lag Block

Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
1	ST_REV	2	2	2	2
2	TAG_DESC				
3	STRATEGY				2
4	ALERT_KEY				1
5	MODE_BLK	4		4	
6	BLOCK_ERR	2		2	
7	OUT	5		5	
8	OUT_RANGE		11		
9	GRANT_DENY		2		
10	STATUS_OPTS				2
11	IN	5		5	
12	FOLLOW	2		2	
13	LAG_TIME				4
14	LEAD_TIME				4
15	BAL_TIME				4
16	OUTAGE_LIM				4
17	UPDATE_EVT				
18	BLOCK_ALM				
	Totals	20	15	20	23

1.9 PID Control Block



Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
1	ST_REV	2	2	2	2
2	TAG_DESC				
3	STRATEGY				2
4	ALERT_KEY				1
5	MODE_BLK	4		4	
6	BLOCK_ERR	2		2	
7	PV	5		5	
8	SP	5		5	
9	OUT	5		5	
10	PV_SCALE		11		
11	OUT_SCALE		11		
12	GRANT_DENY		2		
13	CONTROL_OPTS				2
14	STATUS_OPTS				2
15	IN			5	
16	PV_FTIME				4
17	BYPASS		1		
18	CAS_IN	5		5	
19	SP_RATE_DN				4
20	SP_RATE_UP				4
21	SP_HI_LIM		4		
22	SP_LO_LIM		4		
23	GAIN				4
24	RESET				4
25	BAL_TIME				4
26	RATE				4
27	BKCAL_IN			5	
28	OUT_HI_LIM		4		
29	OUT_LO_LIM		4		
30	BKCAL_HYS				4
31	BKCAL_OUT			5	
32	RCAS_IN			5	
33	ROUT_IN			5	
34	SHED_OPT				1
35	RCAS_OUT			5	
36	ROUT_OUT			5	
37	TRK_SCALE				11
38	TRK_IN_D	2		2	
39	TRK_VAL	5		5	
40	FF_VAL			5	
41	FF_SCALE				11



Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
42	FF_GAIN				4
43	UPDATE_EVT				
44	BLOCK_ALM				
45	ALARM_SUM	8		8	
46	ACK_OPTION				2
47	ALARM_HYS				4
48	HI_HI_PRI				1
49	HI_HI_LIM				4
50	HI_PRI				1
51	HI_LIM				4
52	LO_PRI				1
53	LO_LIM				4
54	LO_LO_PRI				1
55	LO_LO_LIM				4
56	DV_HI_PRI				1
57	DV_HI_LIM				4
58	DV_LO_PRI				1
59	DV_LO_LIM				4
60	HI_HI_ALM				
61	HI_ALM				
62	LO_ALM				
63	LO_LO_ALM				
64	DV_HI_ALM				
65	DV_LO_ALM				
	Totals	43	43	83	104

1.10 Input Selector Block

Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
1	ST_REV	2	2	2	2
2	TAG_DESC				
3	STRATEGY				2
4	ALERT_KEY				1
5	MODE_BLK	4		4	
6	BLOCK_ERR	2		2	
7	OUT	5		5	
8	OUT_RANGE		11		
9	GRANT_DENY		2		
10	STATUS_OPTS				2



Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
11	IN_1	5		5	
12	IN_2	5		5	
13	IN_3	5		5	
14	IN_4	5		5	
15	DISABLE_1	2		2	
16	DISABLE_2	2		2	
17	DISABLE_3	2		2	
18	DISABLE_4	2		2	
19	SELECT_TYPE				1
20	MIN_GOOD				1
21	SELECTED	2		2	
22	OP_SELECT	2		2	
23	UPDATE_EVT				
24	BLOCK_ALM				
	Totals	45	15	45	9

1.11 Arithmetic Block

Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
1	ST_REV	2	2	2	2
2	TAG_DESC				
3	STRATEGY				2
4	ALERT_KEY				1
5	MODE_BLK	4		4	
6	BLOCK_ERR	2		2	
7	PV	5		5	
8	OUT	5		5	
9	PRE_OUT	5		5	
10	PV_SCALE		11		
11	OUT_RANGE		11		
12	GRANT_DENY		2		
13	INPUT_OPTS				2
14	IN			5	
15	IN_LO			5	
16	IN_1			5	
17	IN_2			5	
18	IN_3			5	
19	RANGE_HI				4
20	RANGE_LO				4
21	BIAS_IN_1				4
22	GAIN_IN_1				4



Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
23	BIAS_IN_2				4
24	GAIN_IN_2				4
25	BIAS_IN_3				4
26	GAIN_IN_3				4
27	COMP_HI_LIM				4
28	COMP_LO_LIM				4
29	ARITH_TYPE				4
30	BAL_TIME				4
31	BIAS				4
32	GAIN				4
33	OUT_HI_LIM				4
34	OUT_LO_LIM				4
35	UPDATE_EVT				
36	BLOCK_ALM				
	Totals	23	26	28	68

1.12 Signal Characterizer Block

Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
1	ST_REV	2	2	2	2
2	TAG_DESC				
3	STRATEGY				2
4	ALERT_KEY				1
5	MODE_BLK	4		4	
6	BLOCK_ERR	2		2	
7	OUT_1	5		5	
8	OUT_2	5		5	
9	X_RANGE		11		
10	Y_RANGE		11		
11	GRANT_DENY		2		
12	IN_1	5		5	
13	IN_2	5		5	
14	SWAP_2				1
15	CURVE_X				
16	CURVE_Y				
17	UPDATE_EVT				
18	BLOCK_ALM				
	Totals	28	26	28	6



1.13 Integrator Block

Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
1	ST_REV	2	2	2	2
2	TAG_DESC				
3	STRATEGY				2
4	ALERT_KEY				1
5	MODE_BLK	4		4	
6	BLOCK_ERR	2		2	
7	TOTAL_SP	4		4	
8	OUT	5		5	
9	OUT_RANGE		11		
10	GRANT_DENY		2		
11	STATUS_OPTS				2
12	IN_1	5		5	
13	IN_2	5		5	
14	OUT_TRIP	2		2	
15	OUT_PTRIP	2		2	
16	TIME_UNIT1		1		
17	TIME_UNIT2		1		
18	UNIT_CONV				4
19	PULSE_VAL1				4
20	PULSE_VAL2				4
21	REV_FLOW1	2		2	
22	REV_FLOW2	2		2	
23	RESET_IN	2		2	
24	STOTAL			4	
25	RTOTAL	4		4	
26	SRTOTAL			4	
27	SSP			4	
28	INTEG_TYPE				1
29	INTEG_OPTS				2
30	CLOCK_PER				4
31	PRE_TRIP				4
32	N_RESET	4		4	
33	PCT_INCL	4		4	
34	GOOD_LIM				4
35	UNCERT_LIM				4
36	OP_CMD_INT	1		1	
37	OUTAGE_LIM				4
38	RESET_CONFIRM	2		2	
39	UPDATE_EVT				
40	BLOCK_ALM				



Index	Parameter Mnemonic	VIEW_1	VIEW_2	VIEW_3	VIEW_4
	Totals	52	17	64	42

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2 Parameter Attribute Definitions

2.1 Function Block Parameter Attribute Definitions

Parameter Mnemonic	Obj Type	Data Type/ Structure	Use/Model	Store	Size	Valid Range	Initial Value	Direction	Units	Permission	Mode	Other	Range Check
ACK_OPTION	S	Bit String	C/Contained	S	2	0: Auto Ack Disabled 1: Auto Ack Enabled	0		na	ALARM			
ALARM_HYS	S	Float	C/Contained	S	4	0 to 50 Percent	0.50%		%	ALARM		Positive	Yes
ALARM_SUM	R	DS-74	C/Alarm Summary	mix	8				na	ALARM			
ALERT_KEY	S	Unsigned8	C/Alert Key	S	1	1 to 255	0		none				Yes
BAL_TIME	S	Float	C/Contained	S	4	Positive	0		Sec	TUNE		Positive	
BIAS	S	Float	C/Contained	N	4	OUT_SCALE +/- 10%			OUT	See Note 1			Yes
BKCAL_HYS	S	Float	C/Contained	S	4	0 to 50 Percent	0.50%		%	TUNE		Positive	Yes
BKCAL_IN	R	DS-65	I/Back-Calculation Input	N	5			BKWD	OUT				
BKCAL_OUT	R	DS-65	O/Back-Calculation Output	D	5			BKWD	PV			Read only	
BKCAL_OUT_D	R	DS-66	O/Back-Calculation Output	D	2			BKWD	PV			Read only	
BKCAL_SEL_1	R	DS-65	O/Back-Calculation Output	D	5			BKWD	OUT			Read only	

Parameter Mnemonic	Obj Type	Data Type/ Structure	Use/Model	Store	Size	Valid Range	Initial Value	Direction	Units	Permission	Mode	Other	Range Check
BKCAL_SEL_2	R	DS-65	O/ Back-Calculation Output	D	5			BKWD	OUT			Read only	
BKCAL_SEL_3	R	DS-65	O/ Back-Calculation Output	D	5			BKWD	OUT			Read only	
BLOCK_ALM	R	DS-72	C/Alarm	D	13				na				
BLOCK_ERR	S	Bit String	C/Block Error	D	2				E			Read only	
BYPASS	S	Unsigned8	C/Contained	S	1	1: Off, 2: On	0		E		Man		
CAS_IN	R	DS-65	I/Cascade Input	N	5			FWD	PV				
CAS_IN_D	R	DS-66	I/Cascade Input	N	2			FWD	PV				
CHANNEL	S	Unsigned16	C/Channel	S	2	1 to Mfgr limit	0		none		O/S		Yes
CLR_FSTATE	S	Unsigned8	C/Contained	D	1	1: Off, 2: Clear	1		E	See Note 3			
CONFIRM_TIME	S	Unsigned32	C/Contained	S	4		640000		1/32 millisec	TUNE			Yes
CONTROL_OPTS	S	Bit String	C/Contained	S	2		0		na		O/S		
CYCLE_SEL	S	Bit String	C/Contained	S	2		0		na	See Note 4			
CYCLE_TYPE	S	Bit String	C/Contained	S	2	Set by mfgr			na			Read only	
DEV_REV	S	Unsigned8	C/Contained	S	1	Set by mfgr			none			Read only	
DEV_TYPE	S	Unsigned16	C/Contained	S	2	Set by mfgr			E			Read only	
DD_RESOURCE	S	Visible String	C/DD Resource	S	32		null		na			Read only	
DD_REV	S	Unsigned8	C/Contained	S	1	Set by mfgr			none			Read only	
DISC_ALM	R	DS-72	C/Alarm	D	13				PV				
DISC_LIM	S	Unsigned8	C/Contained	S	1	PV_STATE	0		PV	ALARM			Yes

Parameter Mnemonic	Obj Type	Data Type/ Structure	Use/Model	Store	Size	Valid Range	Initial Value	Direction	Units	Permission	Mode	Other	Range Check
DISC_PRI	S	Unsigned8	C/Alert Priority	S	1	0 to 15	0		none	ALARM			Yes
DV_HI_ALM	R	DS-71	C/Alarm	D	16				PV				
DV_HI_LIM	S	Float	C/Contained	S	4	0 to PV span, +INF	+INF		PV	ALARM			Yes
DV_HI_PRI	S	Unsigned8	C/Alert Priority	S	1	0 to 15	0		none	ALARM			Yes
DV_LO_ALM	R	DS-71	C/Alarm	D	16				PV				
DV_LO_LIM	S	Float	C/Contained	S	4	-INF, -PV span to 0	-INF		PV	ALARM			Yes
DV_LO_PRI	S	Unsigned8	C/Alert Priority	S	1	0 to 15	0		none	ALARM			Yes
FAULT_STATE	S	Unsigned8	C/Contained	N	1	1: Clear, 2: Active			E			Read only	
FEATURE_SEL	S	Bit String	C/Contained	S	2		Set by mfgr		na				
FEATURES	S	Bit String	C/Contained	S	2	Set by mfgr			na			Read only	
FF_GAIN	S	Float	C/Contained	S	4		0		none	TUNE	Man		
FF_SCALE	R	DS-68	C/Scaling	S	11		0-100%		FF		O/S		
FF_VAL	R	DS-65	I /Input	N	5			FWD	FF				
FIELD_VAL	R	DS-65	C/Contained	D	5				%			Read only	
FIELD_VAL_D	R	DS-66	C/Contained	D	2				On/Off			Read only	
FREE_SPACE	S	Float	C/Contained	D	4	0-100 Percent			%			Read only	
FREE_TIME	S	Float	C/Contained	D	4	0-100 Percent			%			Read only	
FSTATE_TIME	S	Float	C/Contained	S	4	Positive	0		Sec			Positive	
FSTATE_VAL	S	Float	C/Contained	S	4	PV_SCALE +/- 10%	0		PV				Yes
FSTATE_VAL_D	S	Unsigned8	C/Contained	S	1		0		PV				
GAIN	S	Float	C/Contained	S	4		0		none	TUNE			

Parameter Mnemonic	Obj Type	Data Type/ Structure	Use/Model	Store	Size	Valid Range	Initial Value	Direction	Units	Permission	Mode	Other	Range Check
GRANT_DENY	R	DS-70	C/Access Permission	S	2				na				
HARD_TYPES	S	Bit String	C/Contained	S	2	Set by mfgr			na			Read only	
HI_ALM	R	DS-71	C/Alarm	D	16				PV				
HI_HI_ALM	R	DS-71	C/Alarm	D	16				PV				
HI_HI_LIM	S	Float	C/Contained	S	4	PV_SCALE, +INF	+INF		PV	ALARM			Yes
HI_HI_PRI	S	Unsigned8	C/Alert Priority	S	1	0 to 15	0		none	ALARM			Yes
HI_LIM	S	Float	C/Contained	S	4	PV_SCALE, +INF	+INF		PV	ALARM			Yes
HI_PRI	S	Unsigned8	C/Alert Priority	S	1	0 to 15	0		none	ALARM			Yes
IO_OPTS	S	Bit String	C/Contained	S	2		0		na		O/S		
IN	R	DS-65	I/Primary Input	N	5			FWD	PV				
IN_1	R	DS-65	I/Input	N	5			FWD	See Note 7				
ITK_VER	S	Unsigned16	C/Contained	S	2	Set by FF			none			Read only	
LIM_NOTIFY	S	Unsigned8	C/Contained	S	1	0 to MAX_NOTIFY	MAX_NOTIFY		none	TUNE			Yes
L_TYPE	S	Unsigned8	C/Contained	S	1	1: Direct, 2: Indirect, 3: Ind Sqr Root	0		E		Man		
LOW_CUT	S	Float	C/Contained	S	4	Non-negative	0		OUT	TUNE		Positive	Yes
LO_ALM	R	DS-71	C/Alarm	D	16				PV				
LO_LIM	S	Float	C/Contained	S	4	-INF, PV_SCALE	-INF		PV	ALARM			Yes
LO_PRI	S	Unsigned8	C/Alert Priority	S	1	0 to 15	0		none	ALARM			Yes
LO_LO_ALM	R	DS-71	C/Alarm	D	16				PV				
LO_LO_LIM	S	Float	C/Contained	S	4	-INF, PV_SCALE	-INF		PV	ALARM			Yes

Parameter Mnemonic	Obj Type	Data Type/ Structure	Use/Model	Store	Size	Valid Range	Initial Value	Direction	Units	Permission	Mode	Other	Range Check
LO_LO_PRI	S	Unsigned8	C/Alert Priority	S	1	0 to 15	0		none	ALARM			Yes
MANUFAC_ID	S	Unsigned32	C/Contained	S	4	Enumeration; controlled by FF			none			Read only	
MAX_NOTIFY	S	Unsigned8	C/Contained	S	1	Set by mfgr			none			Read only	
MEMORY_SIZE	S	Unsigned16	C/Contained	S	2	Set by mfgr			Kbytes			Read only	
MIN_CYCLE_T	S	Unsigned32	C/Contained	S	4	Set by mfgr			1/32 millisecc			Read only	
MODE_BLK	R	DS-69	C/Mode	mix	4	See MODE	O/S		na	See Note 1		Note 2	
NV_CYCLE_T	S	Unsigned32	C/Contained	S	4				1/32 millisecc			Read only	
OUT	R	DS-65	O/Primary Output	N	5	OUT_SCALE +/- 10% See Note 6		FWD	OUT	See Note 1	Man		Yes
OUT_D	R	DS-66	O/Primary Output	N	2	OUT_STATE		FWD	OUT	See Note 1	Man		Yes
OUT_HI_LIM	S	Float	C/Contained	S	4	OUT_SCALE +/- 10%	100		OUT				Yes
OUT_LO_LIM	S	Float	C/Contained	S	4	OUT_SCALE +/- 10%	0		OUT				Yes
OUT_SCALE	R	DS-68	C/Scaling	S	11		0-100%		OUT		O/S		
OUT_STATE	S	Unsigned16	C/Contained	S	2		0		OUT				
PV	R	DS-65	C/Process Variable	D	5				PV			Read only	
PV_D	R	DS-66	C/Process Variable	D	2				PV			Read only	
PV_FTIME	S	Float	C/Contained	S	4	non-negative	0		Sec	TUNE		Positive	
PV_SCALE	R	DS-68	C/Scaling	S	11		0-100%		PV		O/S		
PV_STATE	S	Unsigned16	C/Contained	S	2		0		PV				
RA_FTIME	S	Float	C/Contained	S	4	Positive	0		Sec	TUNE		Positive	

Parameter Mnemonic	Obj Type	Data Type/ Structure	Use/Model	Store	Size	Valid Range	Initial Value	Direction	Units	Permission	Mode	Other	Range Check
RATE	S	Float	C/Contained	S	4	Positive	0		Sec	TUNE		Positive	
RCAS_IN	R	DS-65	C/Remote-Cascade In	N	5			FWD_R	PV				
RCAS_IN_D	R	DS-66	C/Remote-Cascade In	N	2			FWD_R	PV				
RCAS_OUT	R	DS-65	C/Remote-Cascade Out	D	5			BKWD_R	PV			Read only	
RCAS_OUT_D	R	DS-66	C/Remote-Cascade Out	D	2			BKWD_R	PV			Read only	
READBACK	R	DS-65	C/Contained	D	5				XD			Read only	
READBACK_D	R	DS-66	C/Contained	D	2				XD			Read only	
RESET	S	Float	C/Contained	S	4	Positive	+INF		Sec	TUNE		Positive	
RESTART	S	Unsigned8	C/Contained	D	1	See Note 5			E	See Note 4			
ROUT_IN	R	DS-65	C/Remote-Output In	N	5			FWD_R	OUT				
ROUT_OUT	R	DS-65	C/Remotr-Output Out	D	5			BKWD_R	OUT			Read only	
RS_STATE	S	Unsigned8	C/Resource State	D	1	See Part 1 for enumeration			E			Read only	
SEL_1	R	DS-65	I/Cascade Input	N	5			FWD	OUT				
SEL_2	R	DS-65	I/Cascade Input	N	5			FWD	OUT				
SEL_3	R	DS-65	I/Cascade Input	N	5			FWD	OUT				
SEL_TYPE	S	Unsigned8	C/Contained	S	1	1: High, 2: Low, 3: Middle	0		E		Man		
SET_FSTATE	S	Unsigned8	C/Contained	D	1	1: Off, 2: Set	1		E	See Note 3			

Parameter Mnemonic	Obj Type	Data Type/ Structure	Use/Model	Store	Size	Valid Range	Initial Value	Direction	Units	Permission	Mode	Other	Range Check
SHED_OPT	S	Unsigned8	C/Shed Option	S	1	See SHED_OPT	0		E				
SHED_RCAS	S	Unsigned32	C/Contained	S	4		640000		1/32 millisecond	TUNE			Yes
SHED_ROUT	S	Unsigned32	C/Contained	S	4		640000		1/32 millisecond	TUNE			Yes
SIMULATE	R	DS-82	C/Simulate	D	11		disable		none				
SIMULATE_D	R	DS-83	C/Simulate	D	5		disable		none				
SP	R	DS-65	C/Setpoint	N	5	PV_SCALE +/- 10%			PV	See Note 1	Auto or Rout		Yes
SP_D	R	DS-66	C/Setpoint	N	2	PV_STATE			PV	See Note 1	Auto		
SP_HI_LIM	S	Float	C/Contained	S	4	PV_SCALE +/- 10%	100		PV				Yes
SP_LO_LIM	S	Float	C/Contained	S	4	PV_SCALE +/- 10%	0		PV				Yes
SP_RATE_DN	S	Float	C/Contained	S	4	Positive	+INF		PV/Sec			Positive	
SP_RATE_UP	S	Float	C/Contained	S	4	Positive	+INF		PV/Sec			Positive	
ST_REV	S	Unsigned16	C/Static Revision	S	2		0		none			Read only	
STATUS_OPTS	S	Bit String	C/Contained	S	2		0		na		O/S		
STRATEGY	S	Unsigned16	C/Strategy	S	2		0		none				
TAG_DESC	S	Octet String	C/Tag Description	S	32		spaces		na				
TEST_RW	R	DS-85	C/Test	D	112				none				
TRK_IN_D	R	DS-66	I/Input	N	2			FWD	On/Off				
TRK_SCALE	R	DS-68	C/Scaling	S	11		0-100%		TRK		O/S		
TRK_VAL	R	DS-65	I/Input	N	5				TRK				
UPDATE_EVT	R	DS-73	C/Event Update	D	14				na			Read only	

Parameter Mnemonic	Obj Type	Data Type/ Structure	Use/Model	Store	Size	Valid Range	Initial Value	Direction	Units	Permission	Mode	Other	Range Check
WRITE_ALM	R	DS-72	C/Alarm	D	1 3				none				
WRITE_LOCK	S	Unsigned8	C/Contained	S	1	1: Unlocked, 2: Locked	1		E	See Note 3			
WRITE_PRI	S	Unsigned8	C/Alert Priority	S	1	0 to 15	0		none	ALARM			Yes
XD_SCALE	R	DS-68	C/Scaling	S	11		0-100%		XD		O/S		
XD_STATE	S	Unsigned16	C/Contained	S	2		0		XD				

NOTE 1 Normally, the operator has permission to write these values, but PROGRAM or LOCAL remove that permission and grant it to a supervisory computer or a local control panel.

NOTE 2 MODE_BLK has a mixture of storage types. See the Mode parameter formal model in Part 1.

NOTE 3 The operator can control PROGRAM or LOCAL access to these values.

NOTE 4 Changing these parameters may be fatal to communication.

NOTE 5 1: Run, 2: Restart resource, 3: Restart with defaults, 4: Restart processor, 5-10: Restart with factory defaults.

NOTE 6 OUT will be restricted to OUT_SCALE+/- 10% where the OUT_SCALE parameter is defined in the block and the Control Option "No OUT limits in Manual" has not been selected."

NOTE 7 Units are specific to the function block – see specific function block description..

2.2 Transducer Parameter Attribute Definitions

Parameter Mnemonic	Obj Type	Data Type/ Structure	Store	Size	Valid Range	Initial Value	Units	Mode	Other	Range Check	D/A/M/C D=Discrete A=Analog M=Mandatory C=Common	Control Valve	On/Off Valve
CLOSED_POS_DEADBAND	S	Float	S	4							C	O	O
CHARACTERIZATION	S	Unsigned8	S	1	0: Linear 1: Equal Percent 2: Quick Opening 3: Custom 4-7: Reserved 8-255: Mfg Specific	0	E	Not in Auto			CS	O	na
CLOSED_POS_SHIFT	S	Float	N	4					Rd Only		C	O	O
CUSTOM_CURVE_DESCRIPTION	R	DS-180							Rd Only		C		
CUSTOM_CURVE_XY	R	DS-181	S					Not in Auto			C	O	na
CUSTOM_CURVE_XY_FLOAT	R	DS-182	S					Not in Auto			C		
CYCLE_CNTR_DEADBAND	S	Float	S	4			%				C	O	O
CYCLE_CNTR	S	Unsigned32	N	4					Rd Only		MC/MD	O	M
CYCLE_CNTR_LIM	S	Unsigned32	S	4							C	O	M
DEVIATION_DEADBAND	S	Float	S	4			%				MC	O	O
DEVIATION_TIME	S	Float	S	4			Sec				MC	O	O

Parameter Mnemonic	Obj Type	Data Type/ Structure	Store	Size	Valid Range	Initial Value	Units	Mode	Other	Range Check	D/A/M/C D=Discrete A=Analog M=Mandatory C=Common	Control Valve	On/Off Valve
DEVIATION_VALUE	S	Float	D	4					Rd Only		MC	M	O
FRICTION_UNITS	S	Unsigned16	S	2			E	OOS			C	O	O
FRICTION	S	Float	N	4			Fric Unit		Rd Only		C	O	O
FST_BREAKOUT_TIME	S	Float	S	4			Sec		Rd Only		CF	na	na
FST_BREAKOUT_TIMEOUT	S	Float	S	4			Sec				CF	na	na
FST_RAMP_RATE	S	Float	S	4			%/s				CF	na	na
FST_STRK_TRAV_TIMEOUT	S	Float	S	4			Sec				CF	na	na
FST_COMPLETION_TIMEOUT	S	Float	S	4			Sec				CF	na	na
HYSTERISIS	S	Float	N	4			%				C	O	na
INTERNAL_TEMP	S	Float	N	4			E		Rd Only		CT		
INTERNAL_TEMP_MIN	S	Float	N	4			Internal Temp Units		Rd Only		CT		
INTERNAL_TEMP_MAX	S	Float	N	4			Internal Temp Units		Rd Only		CT		
INTERNAL_TEMP_UNITS	S	Unsigned16	S	2			E	OOS			CT	O	O
STROKE_TIME_CLOSE_LIM	S	Float	S	4		0	Sec	Not in Auto			CS	O	O
STROKE_TIME_OPEN_LIM	S	Float	S	4		0	Sec	Not in Auto			CS	O	O
PRESSURE_PORT_A	S	Float	D	4			Pres Unit		Rd Only		CP	O	O
PRESSURE_PORT_B	S	Float	D	4			Pres Unit		Rd Only		CP	O	O
POS_ALERT_HI	S	Float	S	4			%				MC	O	O

Parameter Mnemonic	Obj Type	Data Type/ Structure	Store	Size	Valid Range	Initial Value	Units	Mode	Other	Range Check	D/A/M/C D=Discrete A=Analog M=Mandatory C=Common	Control Valve	On/Off Valve
POS_ALERT_LO	S	Float	S	4			%				MC	O	O
POS_DEADBAND	S	Float	S	4				Not in Auto			C	O	na
POS_FEATURES	S	Bit String	S	2	0: Group A 1: Group B 2: Group C 3: Group D 4: Group E 5: Group F 6: Group G 7: Group H 8: Group I 9: Group J 10: Group K 11: Group L 12-15 Reserved		E		Rd Only				
PRESSURE_UNITS	S	Unsigned16	S	2			E	OOS			CP	O	O
PST_BREAKOUT_TIME	S	Float	N	4			Sec		Rd Only		CA	na	na
PST_BREAKOUT_TIMEOUT	S	Float	S	4			Sec				CA	na	na
PST_INITIAL_START_TIME	S	Date	S	7							CA	na	na
PST_INTERVAL	S	Float	S	4		0	Days				CA	Na	na
PST_OPTIONS	S	Bit String	S	2	0: Freeze analog Feedback 1: Freeze discrete Feedback 2-7: Reserved 8-15: Mfg Specific		E				CA	Na	na
PST_RAMP_RATE	S	Float	S	4			%/s				CA	Na	na
PST_STRK_TRAV	S	Float	S	4	0 to 100	10	%			YES	CA	Na	na
PST_STRK_TRAV_TIMEOUT	S	Float	S	4			Sec				CA	Na	na

Parameter Mnemonic	Obj Type	Data Type/ Structure	Store	Size	Valid Range	Initial Value	Units	Mode	Other	Range Check	D/A/M/C D=Discrete A=Analog M=Mandatory C=Common	Control Valve	On/Off Valve
PST_COMPLETION_TIMEOUT	S	Float	S	4			Sec				CA	Na	na
RATED_TRAVEL	S	Float	S	4			Tvl Units				MC	O	O
SIGNAL_ACTION	S	Unsigned8	S	1	0 : Increase to Open 1: Increase to Close	0	E	Not in Auto		YES	MC/MD		
STOP_HI_POS	S	Float	S	4			%	Not in Auto			MC	O	O
STOP_LO_POS	S	Float	S	4			%	Not in Auto			MC	O	O
STROKE_TIME_CLOSED	S	Float	S	4					Rd Only		C	O	O
STROKE_TIME_OPEN	S	Float	S	4					Rd Only		C	O	O
PRESSURE_SUPPLY	S	Float	D	4			Pres Unit		Rd Only		CP	O	O
TORQUE_UNITS	S	Unsigned16	S	2			E	OOS			CE	O	O
TORQUE	S	Float	N	4			Torque Unit		Rd Only		CE	O	O
TRAVEL_ACCUM_DEADBAND	S	Float	S	4			%				C	O	O
TRAVEL_ACCUM	S	Float	N	4			TAU		Rd Only		MC	O	O
TRAVEL_ACCUM_LIM	S	Float	S	4			TAU				CS	O	O
TRAVEL_ACCUM_UNITS	S	Unsigned16	S	2			E	OOS			CS		
TRAVEL_UNITS	S	Unsigned16	S	2			E	OOS			MC	O	O
TRIP_TIMEOUT	S	Float	S	4			Sec				C	na	na

Parameter Mnemonic	Obj Type	Data Type/ Structure	Store	Size	Valid Range	Initial Value	Units	Mode	Other	Range Check	D/A/M/C D=Discrete A=Analog M=Mandatory C=Common	Control Valve	On/Off Valve
VST_COMMAND	S	Unsigned8	D	1	0: Un-initialized 1: Execute VST (store as reference) 2: Execute VST (store as current) 3: Abort stroke test 4: Reset VST_RESULT to "no initial result" 5...7: Reserved 8-255: Mfg Specific	0	E				MV	na	na
VST_DETAILED_RESULT	S	Bit String	N	2	0: Test command rejected 1: Time Limit Exceeded 2: Pres Limit Exceeded 3: Friction Limit Exceeded 4: PST Travel Limit Exceeded 5: Overridden (abort due to external event) 6-7: Reserved 8-15: Mfg Specific		E		Rd Only		CF	na	na
VST_MODE	S	Unsigned8	S	1	0: Disable 1: PST for ESD valves 2: FST for ESD valves 3..7: Reserved 8-255: Mfg Specific	0	E				MV	na	na
VST_PAUSE	S	Float	S	4			Sec				CF	na	na
VST_RESULT	S	Unsigned8	N	1	0: No initial results 1: Last VST successful 2: Last VST failed	0	E		Rd Only		MV	na	na
WORKING_POS	R	DS-65	D	5					Rd Only		MC	O	na
READBACK_SELECT	S	Unsigned8	S	1	0: Final Position Value 1: Working Position Value	0	E				MC/MD	O	O

Parameter Mnemonic	Obj Type	Data Type/ Structure	Store	Size	Valid Range	Initial Value	Units	Mode	Other	Range Check	D/A/M/C D=Discrete A=Analog M=Mandatory C=Common	Control Valve	On/Off Valve
WORKING_POS_D	R	DS-66	D	2					Rd Only		MD	na	O
WORKING_SP_D	R	DS-66	N	2				Not in Auto			MD	na	M
WORKING_SP	R	DS-65	N	5	FVR		FVR	Not in Auto			MC	M	na
XD_COMMAND	S	Unsigned16	D	2	0: Normal Operation 1-7: Reserved 8-65535: Mfg Specific	0	E	Not in Auto			MC/MD	O	O
XD_COMMAND_FLAGS	S	Bit String	D	2	0: No Procedure Selected 1-7: Reserved 8-15: Mfg Specific	0	E	Not in Auto			C	O	O
XD_COMMAND_STATE	S	Unsigned16	D	2	0: Normal Operation 1-7: Reserved 8-65535: Mfg Specific	0	E		Rd Only		MC/MD	O	O
XD_FSTATE_OPT	S	Unsigned8	S	1	0: Hold Last Value 1: Fail Closed 2: Fail Open 3: XD_FSTATE_VAL 4-7: Reserved 8-255: Mfg Specific	0	E				MC/MD	M	M
XD_FSTATE_VAL	S	Float	S	4	FINAL_VALUE_RANGE	0	FVR				MC	M	na
XD_FSTATE_VAL_D	S	Unsigned8	S	1		0					MD	na	M
XD_OOS_OPT	S	Unsigned8	S	1	0: Hold Last Value 1: Fail Closed 2: Fail Open 3: XD_FSTATE_VAL 4-7: Reserved 8-255: Mfg Specific	0	E				MC/MD	M	M
FINAL_POSITION_VALUE	R	DS-65	D	5			FVR		Rd Only				
FINAL_VALUE	R	DS-65	N	5			FVR		See t1				

Parameter Mnemonic	Obj Type	Data Type/ Structure	Store	Size	Valid Range	Initial Value	Units	Mode	Other	Range Check	D/A/M/C D=Discrete A=Analog M=Mandatory C=Common	Control Valve	On/Off Valve
FINAL_VALUE_CUTOFF_HI	S	Float	S	4	FINAL_VALUE_RANGE, +INF	+INF	FVR	O/S					
FINAL_VALUE_CUTOFF_LO	S	Float	S	4	4 FINAL_VALUE_RANGE, -INF	-INF	FVR	O/S					
FINAL_VALUE_D	R	DS-66	N	2			none		See t1				
FINAL_VALUE_RANGE	R	DS-68	S	11			FVR						
FINAL_POSITION_VALUE_D	R	DS-66	D	2			None		Rd Only				
ACT_FAIL_ACTION	S	Unsigned8	S	1	See Standard Tables Specification (TN-016)	0	E						
ACT_MAN_ID	S	Unsigned 32	S	4			none						
ACT_MODEL_NUM	S	Visible String	S	32		Spac	none						
ACT_SN	S	Visible String	S	32		Spac	none						
VALVE_MAN_ID	S	Unsigned 32	S	4			none						
VALVE_MODEL_NUM	S	Visible String	S	32		Spac	none						
VALVE_SN	S	Visible String	S	32		Spac	none						
VALVE_TYPE	S	Unsigned8	S	1	See Standard Tables Specification (TN-016)	0	E						
XD_CAL_LOC	S	Visible String	S	32		Spac	none						

Parameter Mnemonic	Obj Type	Data Type/ Structure	Store	Size	Valid Range	Initial Value	Units	Mode	Other	Range Check	D/A/M/C D=Discrete A=Analog M=Mandatory C=Common	Control Valve	On/Off Valve
XD_CAL_DATE	S	Date	S	7			none						
XD_CAL_WHO	S	Visible String	S	32		Spac	none						

3 Parameter Descriptions

3.1 Function Block Parameter Descriptions

Parameter Descriptions
ACK_OPTION Selection of whether alarms associated with the block will be automatically acknowledged.
ALARM_HYS Amount the PV must return within the alarm limits before the alarm condition clears. Alarm Hysteresis is expressed as a percent of the PV span .
ALARM_SUM The current alert status, unacknowledged states, unreported states, and disabled states of the alarms associated with the function block.
ALERT_KEY The identification number of the plant unit. This information may be used in the host for sorting alarms, etc.
BAL_TIME This specifies the time for the internal working value of bias or ratio to return to the operator set bias or ratio, in seconds. In the PID block, it may be used to specify the time constant at which the integral term will move to obtain balance when the output is limited and the mode is Auto, Cas, or RCas.
BIAS The bias value used in computing the function block output, expressed in engineering units.
BKCAL_HYS The amount that the output must change away from its output limit before the limit status is turned off, expressed as a percent of the span of the output.
BKCAL_IN The value and status from a lower block's BKCAL_OUT that is used to prevent reset windup and to initialize the control loop.
BKCAL_OUT The value and status required by an upper block's BKCAL_IN so that the upper block may prevent reset windup and provide bumpless transfer to closed loop control.
BKCAL_OUT_D The output value and status provided to an upstream discrete block. This information is used to provide bumpless transfer to closed loop control.

Parameter Descriptions
BKCAL_SEL_1 Control selector output value and status associated with SEL_1 input which is provided to BKCAL_IN of the block connected to SEL_1 in order to prevent reset windup.
BKCAL_SEL_2 Control selector output value and status associated with SEL_2 input which is provided to BKCAL_IN of the block connected to SEL_2 in order to prevent reset windup.
BKCAL_SEL_3 Control selector output value and status associated with SEL_3 input which is provided to BKCAL_IN of the block connected to SEL_3 in order to prevent reset windup.
BLOCK_ALM The block alarm is used for all configuration, hardware, connection failure or system problems in the block. The cause of the alert is entered in the subcode field. The first alert to become active will set the Active status in the Status attribute. As soon as the Unreported status is cleared by the alert reporting task, another block alert may be reported without clearing the Active status, if the subcode has changed.
BLOCK_ERR This parameter reflects the error status associated with the hardware or software components associated with a block. It is a bit string, so that multiple errors may be shown.
BYPASS The normal control algorithm may be bypassed through this parameter. When bypass is set, the setpoint value (in percent) will be directly transferred to the output. To prevent a bump on transfer to/from bypass, the setpoint will automatically be initialized to the output value or process variable, respectively, and the path broken flag will be set for one execution.
CAS_IN This parameter is the remote setpoint value, which must come from another Fieldbus block, or a DCS block through a defined link.
CAS_IN_D This parameter is the remote setpoint value of a discrete block, which must come from another Fieldbus block, or a DCS block through a defined link.
CHANNEL The number of the logical hardware channel that is connected to this I/O block. This information defines the transducer to be used going to or from the physical world.
CLR_FSTATE Writing a Clear to this parameter will clear the device fault state if the field condition, if any, has cleared.
CONFIRM_TIME The time the resource will wait for confirmation of receipt of a report before trying again. Retry shall not happen when CONFIRM_TIME = 0.
CONTROL_OPTS Options which the user may select to alter the calculations done in a control block.
CYCLE_SEL Used to select the block execution method for this resource.
CYCLE_TYPE Identifies the block execution methods available for this resource.
DD_RESOURCE String identifying the tag of the resource which contains the Device Description for this resource.
DD_REV Revision of the DD associated with the resource - used by an interface device to locate the DD file for the resource.
DEV_REV Manufacturer revision number associated with the resource - used by an interface device to locate the DD file for the resource.
DEV_TYPE Manufacturer's model number associated with the resource - used by interface devices to locate the DD file for the resource.
DISC_ALM The status and time stamp associated with the discrete alarm.
DISC_LIM State of discrete input which will generate an alarm.
DISC_PRI Priority of the discrete alarm.
DV_HI_ALM The status and time stamp associated with the high deviation alarm.
DV_HI_LIM The setting of the high deviation alarm limit in engineering units.
DV_HI_PRI Priority of the high deviation alarm.

Parameter Descriptions
DV_LO_ALM The status and time stamp associated with the low deviation alarm.
DV_LO_LIM The setting of the low deviation alarm limit in engineering units.
DV_LO_PRI Priority of the low deviation alarm.
FAULT_STATE Condition set by loss of communication to an output block, fault promoted to an output block or a physical contact. When Fault State condition is set, Then output function blocks will perform their FSTATE actions.
FEATURE_SEL Used to select resource block options.
FEATURES Used to show supported resource block options.
FF_GAIN The gain that the feed forward inpt is multiplied by before it is added to the calculated control output.
FF_SCALE The feedforward input high and low scale values, engineering units code, and number of digits to the right of the decimal point.
FF_VAL The feed forward value and status.
FIELD_VAL Raw value of the field device in percent of thePV range, with a status reflecting the Transducer condition, before signal characterization (L_TYPE) or filtering (PV_FTIME).
FIELD_VAL_D Raw value of the field device discrete input, with a status reflecting the Transducer condition.
FREE_SPACE Percent of memory available for further configuration. Zero in a preconfigured resource.
FREE_TIME Percent of the block processing time that is free to process additional blocks.
FSTATE_TIME The time in seconds from detection of fault of the output block remote setpoint to the output action of the block output if the condition still exists.
FSTATE_VAL The preset analog SP value to use when fault occurs. This value will be used if the I/O option Fault State to value is selected.
FSTATE_VAL_D The preset discrete SP_D value to use when fault occurs. This value will be used if the I/O option Fault State to value is selected.
GAIN Dimensionless value used by the block algorithm in calculating the block output.
GRANT_DENY Options for controlling access of host computer and local control panels to operating, tuning and alarm parameters of the block.
HARD_TYPES The types of hardware available as channel numbers.
HI_ALM The status for high alarm and its associated time stamp.
HI_HI_ALM The status for high high alarm and its associated time stamp.
HI_HI_LIM The setting for high high alarm in engineering units.
HI_HI_PRI Priority of the high high alarm.
HI_LIM The setting for high alarm in engineering units.

Parameter Descriptions
HI_PRI Priority of the high alarm.
IO_OPTS Options which the user may select to alter input and output block processing.
IN The primary input value of the block, required for blocks that filter the input to get the PV.
IN_1 Auxiliary input value to the block, used for other values than the PV.
ITK_VER Major revision number of the interoperability test case used in certifying this device as interoperable. The format and range of the version number is defined and controlled by the Fieldbus Foundation. Note: The value of this parameter will be zero (0) if the device has not been registered as interoperable by the FF.
LIM_NOTIFY Maximum number of unconfirmed alert notify messages allowed.
L_TYPE Determines if the values passed by the transducer block to the AI block may be used directly (Direct) or if the value is in different units and must be converted linearly (Indirect), or with square root (Ind Sqr Root), using the input range defined by the transducer and the associated output range.
LO_ALM The status of the low alarm and its associated time stamp.
LO_LIM The setting for the low alarm in engineering units.
LO_LO_ALM The status of the low low alarm and its associated time stamp.
LO_LO_LIM The setting of the low low alarm in engineering units.
LO_LO_PRI Priority of the low low alarm.
LO_PRI Priority of the low alarm.
LOW_CUT Limit used in square root processing. A value of zero percent of scale is used in block processing if the transducer value falls below this limit, in % of scale. This feature may be used to eliminate noise near zero for a flow sensor.
MANUFAC_ID Manufacturer identification number - used by an interface device to locate the DD file for the resource.
MAX_NOTIFY Maximum number of unconfirmed notify messages possible.
MEMORY_SIZE Available configuration memory in the empty resource. To be checked before attempting a download.
MIN_CYCLE_T Time duration of the shortest cycle interval of which the resource is capable.
MODE_BLK The actual, target, permitted, and normal modes of the block.
NV_CYCLE_T Minimum time interval specified by the manufacturer for writing copies of NV parameters to non-volatile memory. Zero means it will never be automatically copied. At the end of NV_CYCLE_TIME, only those parameters which have changed (as defined by the manufacturer) need to be updated in NVRAM
OUT The primary analog value calculated as a result of executing the function.
OUT_D The primary discrete value calculated as a result of executing the function.

Parameter Descriptions
OUT_HI_LIM Limits the maximum output value.
OUT_LO_LIM Limits the minimum output value.
OUT_SCALE The high and low scale values, engineering units code, and number of digits to the right of the decimal point to be used in displaying the OUT parameter and parameters which have the same scaling as OUT.
OUT_STATE Index to the text describing the states of a discrete output.
PV Either the primary analog value for use in executing the function, or a process value associated with it. May also be calculated from the READBACK value of an AO block.
PV_D Either the primary discrete value for use in executing the function, or a process value associated with it. May also be calculated from the READBACK_D value of a DO block.
PV_FTIME Time constant of a single exponential filter for the PV, in seconds.
PV_SCALE The high and low scale values, engineering units code, and number of digits to the right of the decimal point to be used in displaying the PV parameter and parameters which have the same scaling as PV.
PV_STATE Index to the text describing the states of a discrete PV.
RA_FTIME Time constant of a single exponential filter for the value to be ratioed, in seconds.
RATE Defines the derivative time constant, in seconds.
RCAS_IN Target setpoint and status provided by a supervisory Host to a analog control or output block.
RCAS_IN_D Target setpoint and status provided by a supervisory Host to a discrete control or output block.
RCAS_OUT Block setpoint and status after ramping - provided to a supervisory Host for back calculation and to allow action to be taken under limiting conditions or mode change.
RCAS_OUT_D Block setpoint and status provided to a supervisory Host for back calculation and to allow action to be taken under limiting conditions or mode change.
READBACK This indicates the readback of the actual continuous valve or other actuator position, in transducer units.
READBACK_D This indicates the readback of the actual discrete valve or other actuator position, in the transducer state.
RESET The integral time constant, in seconds per repeat.
RESTART Allows a manual restart to be initiated. Several degrees of restart are possible. They are 1: Run, 2: Restart resource, 3: Restart with defaults, and 4: Restart processor.
ROUT_IN Target output and status provided by a Host to the control block for use as the output (ROut mode).
ROUT_OUT Block output and status - provided to a Host for back calculation in ROut mode and to allow action to be taken under limited conditions or mode change.
RS_STATE State of the function block application state machine.
SEL_1 First input value to the selector.

Parameter Descriptions
SEL_2 Second input value to the selector.
SEL_3 Third input value to the selector.
SEL_TYPE This parameter specifies the type of selector action, from choices of High, Medium, and Low.
SET_FSTATE Allows the Fault State condition to be manually initiated by selecting Set.
SHED_OPT Defines action to be taken on remote control device timeout.
SHED_RCAS Time duration at which to give up on computer writes to function block RCas locations. Shed from RCas shall never happen when SHED_RCAS = 0.
SHED_ROUT Time duration at which to give up on computer writes to function block ROut locations. Shed from Rout shall never happen when SHED_ROUT = 0.
SIMULATE Allows the transducer analog input or output to the block to be manually supplied when simulate is enabled. When simulation is disabled, the simulate value and status track the actual value and status.
SIMULATE_D Allows the transducer discrete input or output to the block to be manually supplied when simulate is enabled. When simulation is disabled, the simulate value and status track the actual value and status.
SP The analog setpoint of this block.
SP_D The discrete setpoint of this block.
SP_HI_LIM The setpoint high limit is the highest setpoint operator entry that can be used for the block.
SP_LO_LIM The setpoint low limit is the lowest setpoint operator entry that can be used for the block.
SP_RATE_DN Ramp rate at which downward setpoint changes are acted on in Auto mode, in PV units per second. If the ramp rate is set to zero, then the setpoint will be used immediately. For control blocks, rate limiting will apply only in Auto. For output blocks, rate limiting will apply in Auto, Cas, and RCas modes.
SP_RATE_UP Ramp rate at which upward setpoint changes are acted on in Auto mode, in PV units per second. If the ramp rate is set to zero, then the setpoint will be used immediately. For control blocks, rate limiting will apply only in Auto. For output blocks, rate limiting will apply in Auto, Cas, and RCas modes.
ST_REV The revision level of the static data associated with the function block. To support tracking changes in static parameter attributes, the associated block's static revision parameter will be incremented each time a static parameter attribute value is changed. Also, the associated block's static revision parameter may be incremented if a static parameter attribute is written but the value is not changed.
STATUS_OPTS Options which the user may select in the block processing of status.
STRATEGY The strategy field can be used to identify grouping of blocks.. This data is not checked or processed by the block.
TAG_DESC The user description of the intended application of the block.
TEST_RW Read/write test parameter - used only for conformance testing.
TRK_IN_D This discrete input is used to initiate external tracking of the block output to the value specified by TRK_VAL.
TRK_SCALE The high and low scale values, engineering units code, and number of digits to the right of the decimal point, associated with TRK_VAL.
TRK_VAL This input is used as the track value when external tracking is enabled by TRK_IN_D.

Parameter Descriptions
UPDATE_EVT This alert is generated by any change to the static data.
WRITE_ALM This alert is generated if the write lock parameter is cleared.
WRITE_LOCK If set, no writes from anywhere are allowed, except to clear WRITE_LOCK. Block inputs will continue to be updated.
WRITE_PRI Priority of the alarm generated by clearing the write lock.
XD_SCALE The high and low scale values, engineering units code, and number of digits to the right of the decimal point used with the value obtained from the transducer for a specified channel.
XD_STATE Index to the text describing the states of a discrete for the value obtained from the transducer.

3.2 Transducer Parameter Descriptions

Parameter Descriptions
ACT_FAIL_ACTION Specifies the final failure position of the actuator as defined in the standard tables in TN-016. It is a recommendation that only the first four enumerations of the table be used.
ACT_MAN_ID Actuator manufacturer identification.
ACT_MODEL_NUM Actuator model number
ACT_SN Actuator Serial Number
CHARACTERIZATION Desired characterization operation. Enumerations defined in Standard Tables (TN-016)
CLOSED_POS_DEADBAND User defined deadband for the closed position
CLOSED_POS_SHIFT Closed position change since last calibration
CUSTOM_CURVE_DESCRIPTION Describes size and data type of the curve.
CUSTOM_CURVE_XY Array unsigned of coordinate pairs for custom characterization curve.
CUSTOM_CURVE_XY_FLOAT Array float of coordinate pairs for custom characterization curve.
CYCLE_CNTR Totalized cycle counts since last reset.

Parameter Descriptions
CYCLE_CNTR_DEADBAND User defined minimum movement before incrementing cycle counter.
CYCLE_CNTR_LIM User defined limit of cycle counter value that will trigger alert.
DEVIATION_DEADBAND The user defined allowable deviation before alert.
DEVIATION_TIME The user defined allowable duration in seconds of deviation before alert.
DEVIATION_VALUE Difference between working setpoint and working position
FINAL_POSITION_VALUE The actual valve position and status after the de-characterization; can be used as the READBACK_VALUE in the AO block.
FINAL_POSITION_VALUE_D The actual valve position and status; can be used as the READBACK_VALUE in a DO block.
FINAL_VALUE The requested valve position and status, before characterization, written by an analog Function Block.
FINAL_VALUE_CUTOFF_HI If the final value is more positive than this value, the valve is forced to it's maximum high value (fully open).
FINAL_VALUE_CUTOFF_LO If the final value is more negative than this value, the valve is forced to it's maximum low value (fully closed).
FINAL_VALUE_D The requested valve position and status written by a discrete Function Block
FINAL_VALUE_RANGE The allowable range for final value.
FRICITION Calculated dynamic friction value.
FRICITION_UNITS Friction units as defined in standard table in (TN-016)
FST_BREAKOUT_TIME The actual delay until movement is detected.
FST_BREAKOUT_TIMEOUT Allowable delay at the start of a Full Stroke Valve test
FST_RAMP_RATE Defined rate of valve travel (% per second) during the valve test.
FST_COMPLETION_TIMEOUT Maximum time allowed initiating valve travel until test is aborted.
FST_STRK_TRAV_TIMEOUT Allowed time to reach the fully closed position.
HYSTERISIS Maximum measured amount of difference between desired and actual position after a signal reversal.
INTERNAL_TEMP Internal device temperature in user defined temperature units.
INTERNAL_TEMP_UNITS Internal temperature units as defined in standard table in (TN-016).
STROKE_TIME_CLOSE_LIM The user defined time of a full span travel in closing direction in seconds, used to slow down valve movement.

Parameter Descriptions
STROKE_TIME_OPEN_LIM The user defined time of a full span travel in opening direction in seconds, used to slow down valve movement.
INTERNAL_TEMP_MIN Minimum internal device temperature in user defined temperature units over operation lifetime of device.
INTERNAL_TEMP_MAX Maximum internal device temperature in user defined temperature units over operation lifetime of device.
PRESSURE_PORT_A Pressure value of output port A (1) in user defined pressure units.
PRESSURE_PORT_B Pressure value of output port B (2) in user defined pressure units.
POS_ALERT_HI User defined high position threshold that when FINAL_VALUE is more positive will trigger a position high alert.
POS_ALERT_LO User defined low position threshold that when FINAL_VALUE is more negative will trigger a position low alert.
POS_DEADBAND Configurable deadband for the control algorithm.
POS_FEATURES BIT_ENUMERATED parameter indicating the parameter groups supported by this transducer block
PRESSURE_UNITS Pressure units as defined in standard table in TN-016.
PST_BREAKOUT_TIME Actual delay until movement is detected.
PST_BREAKOUT_TIMEOUT Allowable delay at start of PST test.
PST_INITIAL_START_TIME Date and time scheduled for start of initial PST.
PST_INTERVAL Time interval between the periodic execution of the partial stroke test (hours). Setting of 0 indicates no PST.
PST_OPTIONS Options which the user may select to influence block behavior during valve stroke test 1. Enumerations defined in Standard Tables (TN-016).
PST_RAMP_RATE Defined rate of valve travel (% per second) during the valve stroke test
PST_STRK_TRAV Target position for valve travel during partial stroke test.
PST_STRK_TRAV_TIMEOUT Allowed time to reach the PST target.
PST_COMPLETION_TIMEOUT Maximum time allowed to until partial stroke test will be aborted.
RATED_TRAVEL Nominal travel of actuator/valve in travel units.
READBACK_SELECT Selects whether working position or final position value is passed back to connected function block. Enumerations defined in Standard Tables (TN-016).
SIGNAL_ACTION Defines actuator movement relative to increasing command. Enumerations defined in Standard Tables (TN-016).
STOP_HI_POS User defined high limit for valve position that when reached will set a stop hi position limit bit.

Parameter Descriptions
STOP_LO_POS User defined low limit for valve position that when reached will set a stop lo position limit bit.
STROKE_TIME_CLOSED Measured stroke time in seconds to close.
STROKE_TIME_OPEN Measured stroke time in seconds to open.
PRESSURE_SUPPLY Available supply pressure in user defined pressure units.
TORQUE Calculated dynamic torque value.
TORQUE_UNITS Torque units as defined in standard table in TN-016.
TRAVEL_ACCUM_DEADBAND User defined allowable movement before incrementing travel accumulator.
TRAVEL_ACCUM Totalized travel value since last reset.
TRAVEL_ACCUM_LIM User defined limit of accumulator value that will trigger alert.
TRAVEL_ACCUM_UNITS Travel accumulator units as defined in standard table in TN-016.
TRAVEL_UNITS Travel units as defined in standard table in TN-016.
TRIP_TIMEOUT Time in seconds beyond which an alert will be set if the target is not reached during an actual trip event.
VALVE_MAN_ID Valve manufacturer identification.
VALVE_MODEL_NUM Valve model number.
VALVE_SN Valve serial number.
VALVE_TYPE The type of valve as defined in the standard tables in TN-016.
VST_COMMAND Command for VST (PST or FST) execution. Enumerations defined in Standard Tables (TN-016).
VST_DETAILED_RESULT Detailed results of valve stroke test if VST_RESULT indicates failure. Enumerations defined in Standard Tables (TN-016).
VST_MODE Specifies different modes of the valve stroke test (start at normal operating position). Enumerations defined in Standard Tables (TN-016).
VST_PAUSE Pause time between test ramp and ramp back to start position.
VST_RESULT Result of latest valve stroke test. Enumerations defined in Standard Tables (TN-016).
WORKING_POS The actual measured feedback position before de-characterization.
WORKING_POS_D The actual measured discrete feedback position before de-characterization.

Parameter Descriptions	
WORKING_SP	The final command value to the positioning algorithm after characterization.
WORKING_SP_D	The final discrete command value to the positioning algorithm after characterization.
XD_CAL_DATE	The date of the last positioner calibration.
XD_CAL_LOC	The location of last positioner calibration. This describes the physical location at which the calibration was performed. (ex. "NIST", "Acme Labs").
XD_CAL_WHO	The name of the person responsible for the last positioner calibration.
XD_COMMAND	Command to start device-specific procedure. Command value will reset to zero after execution of procedure regardless of value of XD_COMMAND_STATE. Enumerations defined in Standard Tables (TN-016).
XD_COMMAND_FLAGS	Manufacturer specific enumerated procedures.
XD_COMMAND_STATE	The state of the procedure initiated by XD_COMMAND. Enumerations defined in Standard Tables (TN-016).
XD_ERROR	One of the error codes defined in section 5 Transducer Block Enumerations XD_ERROR and Block Alarm Sub-codes below.
XD_FSTATE_OPT	Defines an action to be taken on a transducer fault state. Enumerations defined in Standard Tables (TN-016).
XD_FSTATE_VAL	User defined position incase of fault state of transducer.
XD_FSTATE_VAL_D	User defined discrete position incase of fault state of transducer.
XD_OOS_OPT	Defines an action to be taken whenever the Transducer Block transitions to Out of Service mode.