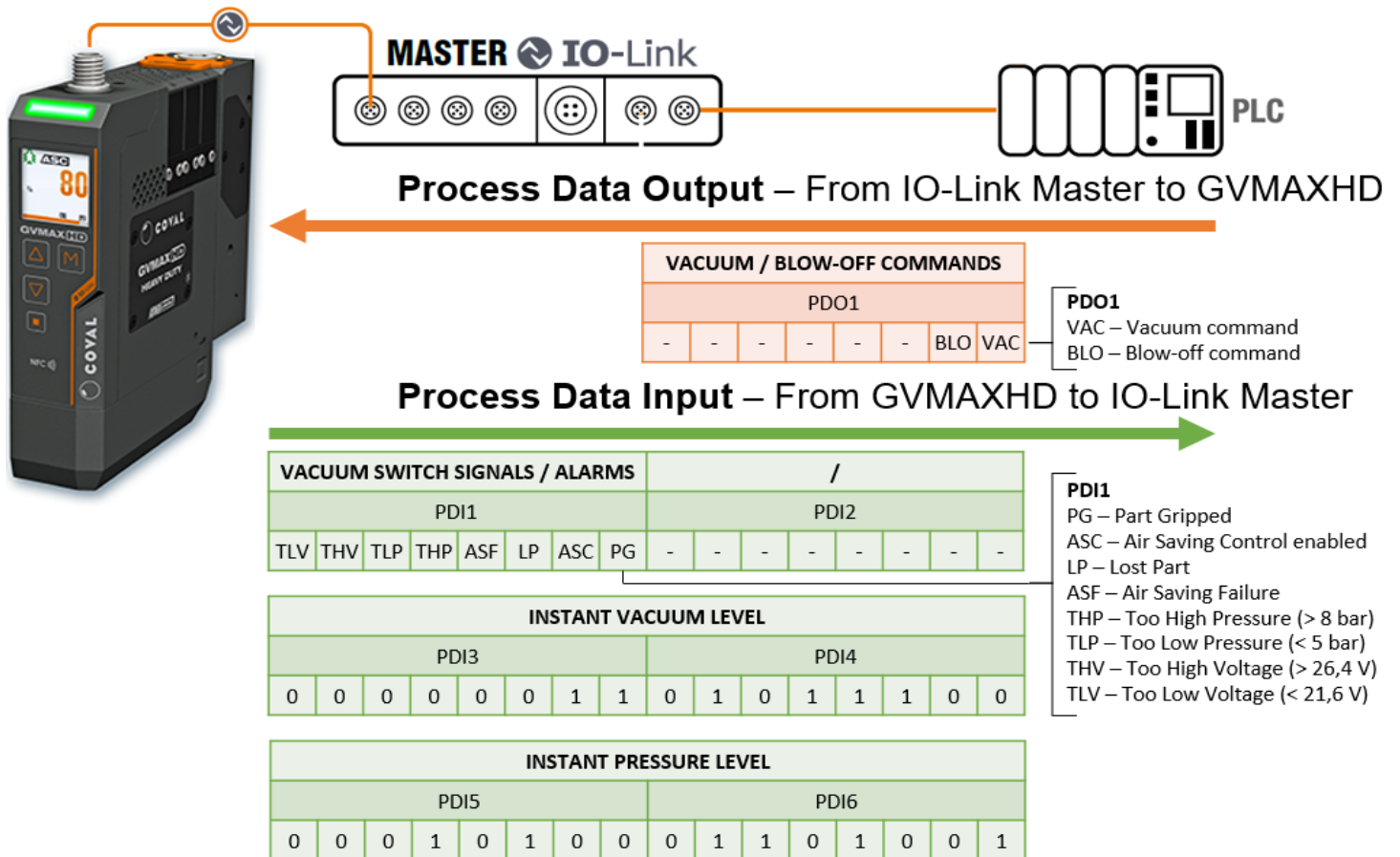


I) IO-Link communication

IO-Link revision	1.1.2	SIO Mode (Standard Input Output)	Yes
Baud rate	COM3 / 230,4 Kbit/s	Process Data Input (PDI)	6 bytes
Minimum cycle time	1 ms	Process Data Output (PDO)	1 byte

II) Cyclic data (PDI/PDO)



Process Data	Parameter	Bit	Length (byte)	R/W	Unit	Comment
PDI1	PG - Part gripped (L1)	0	BOOL	RO		Vacuum level greater than L1 then between L1 and L1-h1
	ASC - Air Saving Control (L2)	1	BOOL	RO		Vacuum level greater than L2 then between L2 and L2-h2
	LP - Lost Part	2	BOOL	RO		Vacuum level lower than L1-h1 during part handling
	ASF - Air Saving Failure	3	BOOL	RO		Vacuum leakages leading to a permanent vacuum state of the ejector
	THP - Too High Pressure	4	BOOL	RO		Compressed air level greater than 8 bar
	TLP - Too Low Pressure	5	BOOL	RO		Compressed air level lower than 5 bar (dynamic)
	THV - Too High Voltage	6	BOOL	RO		Power supply voltage greater than 26,4 V
	TLV - Too Low Voltage	7	BOOL	RO		Power supply voltage lower than 21,6 V (dynamic)
PDI2	-	0-7	8xBOOL	RO		Not used
PDI3 / PDI4	Instant vacuum level	0-15	2	RO	mbar	Instantaneous vacuum level (0 to -1013 mbar)
PDI5 / PDI6	Instant pressure level	0-15	2	RO	mbar	Instantaneous compressed air pressure level (0 to 10 000 mbar)
PDO1	VAC - Vacuum command	0	BOOL	RW		0 : vacuum OFF (NC vacuum control) : vacuum ON (NO vacuum control)
	BLO - Blow-off command	1	BOOL	RW		0 : Blow-off OFF 1 : Blow-off ON
	-	2-7	6xBOOL	RW		Not used

III) Acyclic data

IDENTIFICATION

Index (dec)	Parameter	Length (byte)	R/W	Unit	Value			Comment
					min	Typ.	max	
7	Vendor ID	2	RO	-		0x04		0x0421 = COVAL SAS
8						0x21		
9	Device ID	3	RO	-		0x00		0x2001 = GVMAXHD Series
10						0x20		
11						0x01		
16	Vendor name	9	RO		COVAL SAS			
17	Vendor text	15	RO		Vacuum managers			
18	Product name	32	RO		GVMAXHD--X-----			Full reference
19	Product ID	10	RO		GVMAXHDCxx			Simplified reference
20	Product text	38	RO		Heavy Duty Vacuum Pump			
21	Serial number	8	RO		20420852461000000			
22	Hardware revision	3	RO		1.0			
23	Firmware revision	22	RO		io03.09.00_hmi03.08.00			



PROCESS SETTINGS

Index (dec)	Parameter	Length (byte)	R/W	Unit	Value			Comment
					min	Typ.	max	
64	Gripped product threshold L1	2	RW	mbar	10	650	999	Recommendations : h1 & h2 ≥ 10 L2-h2 ≥ L1 L1 > h1 & L2 > h2
65	Gripping threshold hysteresis h1	2	RW	mbar	0	100	999	
66	Air Saving threshold L2	2	RW	mbar	10	750	999	
67	Air Saving threshold hysteresis h2	2	RW	mbar	0	100	999	
68	ASC (Air Saving Control)	1	RW	-	0	1	1	0 : OFF / 1 : ON
69	DIAG Eco	1	RW	-	0	1	1	0 : OFF / 1 : ON The ejector automatically switches to permanent suction once the vacuum valve bounces more than "Maximum bounces No." during a period of "DIAG Eco analysis time".
70	DIAG Eco Max. bounces number	1	RW	-	1	2	10	
71	Diag Eco analysis time	1	RW	sec	1	1	60	
72	Automatic blow-off	1	RW	-	0	0	1	0 : OFF / 1 : ON Automatic blowing for a period of 100 to 999ms as soon as vacuum control is disabled.
73	Automatic blow-off duration	2	RW	msec	100	500	9999	

▼ Preset configurations ▼

74	CONF1-L1	2	RW	mbar	10	650	999	
75	CONF1-h1	2	RW	mbar	0	100	999	
76	CONF1-L2	2	RW	mbar	10	750	999	
77	CONF1-h2	2	RW	mbar	0	100	999	
78	CONF2-L1	2	RW	mbar	10	500	999	
79	CONF2-h1	2	RW	mbar	0	0	999	
80	CONF2-L2	2	RW	mbar	10	700	999	
81	CONF2-h2	2	RW	mbar	0	50	999	
2	Configuration 1 selection	1	WO	-	162 / 0xA2			Enables the following settings: CONF1-L1/h1/L2/h2
2	Configuration 2 selection	1	WO	-	163 / 0xA3			Enables the following settings: CONF2-L1/h1/L2/h2



DEVICE SETTINGS

Index (dec)	Parameter	Length (byte)	R/W	Unit	Value			Comment
					min	Typ.	max	
90	I/O switching type	1	RW	-	0	0	1	0 : PNP / 1 : NPN

91	Switching output-1 (DO1)	1	RW	-	0	0	1	0 : NO / 1 : NC
92	Switching output-2 (DO2)	1	RW	-	0	0	1	0 : NO / 1 : NC
93	Specific wiring	1	RW	-	0	0	1	0 : OFF / 1 : ON (reverse DO1 ↔ DO2)

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IODD - IO-Link Device Description

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DIAGNOSTIC

Index (dec)	Parameter	Length (byte)	R/W	Unit	Value			Comment
					min	Typ.	max	
100	Custom device name	20	RW	-	GVMAXHD			Free field, 20 characters max.
101	HMI serial number	20	RO	-	20420852461000000			
▼ Vacuum network diagnostic feature ▼								
2	Start vacuum network diagnostic (initial check)	1	WO		164 / 0xA4			The vacuum network diagnostic feature aims to periodically measure the vacuum drop to compare it to the initial measurement done when commissioning the ejector.
2	Start vacuum network diagnostic (periodic check)	1	WO		165 / 0xA5			An alarm is triggered when the measured vacuum drop is greater or equal to Vacuum drop reference (index 103) + Allowed vacuum drop threshold (index 105). See detailed instructions in main user manual.
102	Last test result	1	RO	-	0	0	2	0 : Test not done / 1 : Test failed / 2 : Test OK
103	Vacuum drop reference	2	RO	mbar	0	0	999	Vacuum drop measured when commissioning the ejector (Initial check : Index 2 / 164d). Shall be ≤ 200 mbar to get "Test OK" result.
104	Last vacuum drop measured value	2	RO	mbar	0	0	999	
105	Allowed vacuum drop threshold	2	RW	mbar	10	100	200	Defines the allowed margin of vacuum drop before triggering the "Clogged vacuum network" alarm.
▼ Cycles counters ▼								
110	External vacuum commands counter	4	RO	-	0	0	1E+08	
111	Internal vacuum commands counter	4	RO	-	0	0	1E+08	
112	Blow-off commands counter	4	RO	-	0	0	1E+08	
113	Grip counter	4	RO	-	0	0	1E+08	
114	Grip faults counter	4	RO	-	0	0	1E+08	
115	ASC counter	4	RO	-	0	0	1E+08	
116	ASC faults counter	4	RO	-	0	0	1E+08	
117	Power supply too high faults counter	4	RO	-	0	0	1E+08	
118	Power supply too low faults counter	4	RO	-	0	0	1E+08	
119	Vacuum and blow-off in the same time counter	4	RO	-	0	0	1E+08	
120	Pressure too high faults counter	4	RO	-	0	0	1E+08	
121	Pressure too low faults counter	4	RO	-	0	0	1E+08	
122	Blow-off faults counter	4	RO	-	0	0	1E+08	
▼ Sensors calibration ▼								
2	Vacuum sensor calibration	1	WO	-	160 / 0xA0			
2	Pressure sensor calibration	1	WO	-	161 / 0xA1			
▼ Factory settings ▼								
2	Reset Process settings	1	WO	-	166 / 0xA6			
2	Reset all settings	1	WO	-	130 / 0x82			

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