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TECHNICAL BROCHURE
P0002566

ecocirc® XL BACnet Objects

Bell & Gossett
a xylem brand

Table of Contents

1. Purpose of this document

The purpose of this document is to provide a list and a simple explanation of the BACnet objects implemented in the "ecocirc XL" electronic drive.

For further information related to the BACnet standard protocol, refer to **"ANSI/ASHRAE Standard 135-2004, BACnet A Data Communication Protocol For Building Automation and Control Networks"** document or latest version of the same.

2. Legend

MS/TP	Master-Slave / Token Passing
UART	Universal Asynchronous Receiver/Transmitter
MIN	Minimum
MAX	Maximum
DEF	Default
R	Readable
R/W	Readable & Writable
RPM	Revolutions per Minute
Q	Flow Rate
H	Head
P	Power
PROP.	Proportional
W	Watt
A	Ampere
LSW / MSW	Least Significant Word / Most Significant Word
PWR	Power
FW	Firmware
KI	Integral constant
KP	Proportional constant
EIA	Electronic Industries Alliance
N.U.	Not used
N.D.	Not Defined
N.A.	Not accessible
N.P.	Not Provided

3. BACnet Protocol Implementation Conformance Statement (PICS)

DATE	22 October 2019
VENDOR NAME	Xylem
PRODUCT NAME	ecocirc XL
PRODUCT MODEL NUMBER	ecocirc XL… (see table below)
APPLICATION SOFTWARE VERSION	001
FIRMWARE REVISION	12
BACNET PROTOCOL VERSION	1

3.1 *Product model number*

The ecocirc XL is a range of electronic circulators based on the same software; the PICS are the same for all products listed below.

PRODUCT	OPTION
ecocirc XL 20-35	(N)
ecocirc XL 36-45	(N)
ecocirc XL 15-75	(N)
ecocirc XL 55-45	(N)
ecocirc XL 20-140	(N)
ecocirc XL 65-130	(N)
ecocirc XL 40-200	(N)
ecocirc XL 70-145	(N)
ecocirc XL 40-275	(N)
ecocirc XL 95-125	(N)
ecocirc XL 27-375	(N)
ecocirc XL 105-155	(N)
ecocirc XL 45-340	(N)
ecocirc XL 110-180	(N)
ecocirc XL 45-375	(N)
ecocirc XL 95-160 (*)	(N)
ecocirc XL 27-320 (*)	(N)

N = Stainless Steel

3.2 *Product description*

ecocirc XL is a wet rotor circulation pump with energy-efficient electronically commutated permanent magnet (ECM) technology. Being equipped with an advanced electronic drive with communication capabilities, the pump can be used as a stand-alone or network device with BACnet (or ModBus) communication.

3.3 *BACnet standarized device profile (Annex L)*

☐	**BACnet Advanced Workstation**	(B-AWS)
☐	**BACnet Operator Workstation**	(B-OWS)
☐	**BACnet Operator Display**	(B-OD)
☐	**BACnet Building Controller**	(B-BC)
☐	**BACnet Advanced Application Controller**	(B-AAC)
☐	**BACnet Application Specific Controller**	(B-ASC)
☐	**BACnet Smart Sensor**	(B-SS)
☑	**BACnet Smart Actuator**	(B-SA)

3.4 *BACnet interoperability building blocks supported (Annex K):BIBB*

3.4.1 Data sharing

☐	**Data Sharing – Read Property-A**	DS-RP-A
☑	**Data Sharing – Read Property-B**	DS-RP-B
☐	**Data Sharing – Read Property Multiple-A**	DS-RPM-A
☐	**Data Sharing – Read Property Multiple-B**	DS-RPM-B
☐	**Data Sharing – Write Property-A**	DS-WP-A
☑	**Data Sharing – Write Property-B**	DS-WP-B
☐	**Data Sharing – Write Property Multiple-A**	DS-WPM-A
☐	**Data Sharing – Write Property Multiple-B**	DS-WPM-B
☐	**Data Sharing – Change of Value-A**	DS-COV-A
☐	**Data Sharing – Change of Value-B**	DS-COV-B
☐	**Data Sharing – Change of Value Property-A**	DS-COVP-A
☐	**Data Sharing – Change of Value Property-B**	DS-COV-B
☐	**Data Sharing – Change of Value Unsolicited-A**	DS-COVU-A
☐	**Data Sharing – Change of Value Unsolicited-B**	DS-COVU-B
☐	**Data Sharing – View-A**	DS-V-A
☐	**Data Sharing – Advanced View-A**	DS-AV-A
☐	**Data Sharing – Modify-A**	DS-M-A
☐	**Data Sharing – Advanced Modify-A**	DS-AM-A

3.4.2 Alarm and event management
N.P.

3.4.3 Scheduling
N.P.

3.4.4 Trending
N.P.

3.4.5 Device & network management

☐	**Device Management – Dynamic Device Binding-A**	DM-DDB-A
☑	**Device Management – Dynamic Device Binding-B**	DM-DDB-B
☐	**Device Management – Dynamic Object Binding-A**	DM-DOB-A
☐	**Device Management – Dynamic Object Binding-B**	DM-DOB-B
☐	**Device Management – Device Communication Control-A**	DM-DCC-A
☐	**Device Management – Device Communication Control -B**	DM-DCC-B
☐	**Device Management – Private Transfer-A**	DM-PT-A
☐	**Device Management – Private Transfer-B**	DM-PT-B
☐	**Device Management – Text Message-A**	DM-TM-A
☐	**Device Management – Text Message-B**	DM-TM-B
☐	**Device Management – Time Synchronization-A**	DM-TS-A
☐	**Device Management – Time Synchronization-B**	DM-TS-B
☐	**Device Management – UTC Time Synchronization-A**	DM-UTC-A
☐	**Device Management – UTC Time Synchronization-B**	DM-UTC-B
☐	**Device Management – Reinitialize Device-A**	DM-RD-A
☐	**Device Management – Reinitialize Device-B**	DM-RD-B
☐	**Device Management – Backup and Restore-A**	DM-BR-A
☐	**Device Management – Backup and Restore-B**	DM-BR-B
☐	**Device Management – Restart-A**	DM-R-A
☐	**Device Management – Restart-B**	DM-R-B
☐	**Device Management – List Manipulation-A**	DM-LM-A
☐	**Device Management – List Manipulation-B**	DM-LM-B
☐	**Device Management – Object Creation and Deletion-A**	DM-OCD-A
☐	**Device Management – Object Creation and Deletion-B**	DM-OCD-B
☐	**Device Management – Virtual Terminal-A**	DM-VT-A
☐	**Device Management – Virtual Terminal-B**	DM-VT-B
☐	**Device Management – Automatic Network Mapping-A**	DM-ANM-A
☐	**Device Management – Automatic Device Mapping-A**	DM-ADM-A
☐	**Device Management – Automatic Time Synchronization-A**	DM-ATS-A
☐	**Device Management – Manual Time Synchronization-A**	DM-MTS-A

3.4.6 Network management
N.P.

3.5 *Standard object types supported*

OBJECT TYPE	SUPPORTED	CREATED/ DELETED DYNAMICALLY	OPTIONAL PROPERTIES SUPPORTED	WRITEABLE PROPERTIES
Analog Input (*)	☑	☐	Description	
Analog Value (**)	☑	☐	Description	
Analog Device	☑	☐	Description, Max_Master, Max_Info_Frames	Object_Identifier

(*) See par. 5.2 for further specification
(**) See par. 5.1 for further specification

3.6 *Segmentation capability*

N.P.

3.7 *Data link layer options*

☐	**BACnet IP, (Annex J)**	
☐	**BACnet IP, (Annex J), Foreign Device**	
☐	**ISO 8802-3, Ethernet (Clause 7)**	
☐	**ANSI/ATA 878.1, 2.5Mb. ARCNET (Clause 8)**	
☐	**ANSI/ATA 878.1, 2.5Mb. ARCNET (Clause 8), baud rate(s)**	
☑	**MS/TP master (Clause 9), baud rate(s)**	4800 9600 14400 19200 38400 (*) 56000 57600
☐	**MS/TP slave (Clause 9), baud rate(s)**	
☐	**Point-To-Point, EIA 232 (Clause 10), baud rate(s)**	
☐	**Point-To-Point, modem (Clause 10), baud rate(s)**	
☐	**LonTalk (Clause 11), medium**	
☐	**Other**	

(*) It is suggested to set a baud rate equal to or greater than 38400bps to avoid timing issues.

3.8 *Device address binding*

Is static device binding supported?	☐ Yes	☑ No

(required for two-way communication between MS/TP, slaves and other devices)

3.9 *Networking options*

N.P.

3.10 *Network security options*

N.P.

3.11 *Character sets supported*

N.P.

4. “BACnet device” and “BACnet device object” identifier

A “BACnetDevice” is any device, real or virtual, that supports digital communication using the BACnet protocol: hence ecocirc XL is a “BACnetDevice”.

Each “BACnetDevice” contains exactly one Device Object, which is a standardized object whose properties represent the externally visible characteristics of a “BACnetDevice”

In case of ecocirc XL connected to a local MS/TP network, each device can be uniquely located referring to (both):

- the Device Object_Identifier
- the MAC address

4.1 *BACnet Device Object Identifier*

For ecocirc XL, each Device Object_Identifier is factory pre-set to a default value = 84000 (decimal number).

In case the user needs to change/update the pre-set value of the Device Object_Identifier, this can be done by using the provided “WriteProperty” Service onto the property “Object_Identifier” of the Device Object.

4.2 *ecocircXL MAC address*

For ecocirc XL, the MAC address corresponds to the Address available on the Sub-Menu of the Communication Settings: it is factory pre-set to a default value = 1.

The user has to verify that every ecocircXL connected to the same local MS/TP network is identified by a *different Address*: the procedure to change Address is described on the Electronic Drive Manual.

5. BACnet virtual memory

The complete data-set managed by ecocirc XL accessible by considering a BACnet virtual memory made exclusively of 2 objects: *Analog Values* (whose "Present_Value" Property is readable and writable) and *Analog Inputs* (whose "Present_Value" Property is readable).

5.1 *Virtual memory - analog values table*

It is a set of Analog Value objects, whose "Present_Value" Property is readable and writable **[R/W]**, used for *standard settings*: generally the same operations or functions a user can perform/activate through the user interface.

OBJECT_ IDEN-TIFIER	OBJECT_NAME	UNITS	PRESENT_VALUE			Description
			MIN	MAX	DEF	
0	**ON OFF**	-	0	1	1	**OPERATING MODE** 0 = OFF 1 = ON
1	**OP. MODALITY**	-	1	3	2	**CONTROL MODE**[1] 1 = CONSTANT PRESSURE 2 = PROPORTIONAL PRESSURE 3 = CONSTANT CURVE
2	**NIGHT MODE**	-	0	1	0	**NIGHT-MODE ACTIVATION** 0 = NOT ACTIVE 1 = ACTIVE
3	**AIR VENTING**	-	0	1	1	**AIR VENTING PROCEDURE** 0 = NOT ACTIVE 1 = ACTIVE
4	**A. VEN. PWR ON**	-	0	1	1	**AIR VENTING POWER ON** 0 = NOT ACTIVE 1 = ACTIVE
5	**PROP. H.S.P.**	[m]	2,40	10,00	5,00	**PROPORTIONAL PRESSURE SETPOINT**[2] (for CONTROL MODE = 2)
6	**CONST. H.S.P.**	[m]	1,20	9,00	5,00	**CONSTANT PRESSURE SETPOINT**[1] (for CONTROL MODE = 1)
7	**RPM S.P.**	[rpm]	1500	4500	2000	**CONSTANT CURVE SETPOINT**[2] (for CONTROL MODE = 3)
8	**T REG. TYPE**	-	0	2	0	**TEMPERATURE CONTROL MODE** 0 = NOT ACTIVE 1 = PROP. TEMPERATURE TO HEAD 2 = CONSTANT TEMPERATURE
9	**ABS T S.P.**	[°C]	(-10) 30	110	50	**ABSOLUTE TEMPERATURE SETPOINT**[3]
10	**DIFF T S.P.**	[°C]	5	30	20	**DIFFERENTIAL TEMPERATURE SETPOINT**
11	**T ACQ. TYPE**	-	0	2	0	**TEMPERATURE PROBE** 0 = INTERNAL 1 = EXTERNAL 2 = DIFFERENTIAL
12	**T SLOPE**	-	0	1	0	**TEMPERATURE SLOPE** 0 = INCREASING 1 = DECREASING

5.1 *Virtual memory - analog values table (continued)*

OBJECT_ IDEN-TIFIER	OBJECT_NAME	UNITS	PRESENT_VALUE			Description
			MIN	MAX	DEF	
13	**KP CONST. T**	-	1	5000	100	**K_p FOR TEMPERATURE CONTROL**
14	**KI CONST. T**	-	0	500	50	**K_I FOR TEMPERATURE CONTROL**
15	**T PI PERIOD**	[ms]	100	10000	100	**TEMPERATURE CONTROL SAMPLING TIME**
16	**TWIN MOD.**	-	0	3	1	**TWIN PUMPS CONTROL MODE** 0 = BACKUP 1 = ALTERNATE 2 = PARALLEL 3 = FORCED PARALLEL
17	**LOG IDX SEL.**	-	0	7	0	**DATA-LOG MATRIX ROW INDEX**[4]

1 [CONTROL MODE = 0] is reserved for future implementation

2 The MIN, MAX and DEFAULT value depends strictly on the pump model: values in the table are only for reference.

3 In case [T REG. TYPE = 1], the ABSOLUTE TEMPERATURE SET POINT can be set from 30°C to 110°C.
In case [T REG. TYPE = 2], the ABSOLUTE TEMPERATURE SET POINT can be set from -10°C to 110°C.

4 This object is the selection index (from 0 to 7) of one of the 8 errors stored in the error queue; all the other information related to each error can be collected using the Analog Input Objects from 28 to 43 (see par. 5.2)

5.2 *Virtual memory - analog inputs table*

It is a set of Analog Inputs objects, whose "Present_Value" Property is readable and writable **[R]**, used for *standard settings*: generally the same data a user can acquire through the user interface.

OBJECT_ IDEN-TIFIER	OBJECT_NAME	UNITS	PRESENT_VALUE			Description
			MIN	MAX	DEF	
0	**CIRC. CONF**	-	0	2	2	**CIRCULATOR CONFIGURATION** 0 = TWIN MASTER 1 = TWIN SLAVE 2 = SINGLE
1	**POWER**	[W]	…	…	…	**INPUT POWER**[1]
2	**CURR. H**	[m]	…	…	…	**HEAD [H]**[1]
3	**CURR. Q**	[m3/h]	…	…	…	**FLOW [Q]**[1]
4	**CURR. RPM**	[rpm]	…	…	…	**SPEED**[1]
5	**CAN TEMP**	[°C]	-20,0	130,0	…	**WATER TEMPERATURE**[2]
6	**EXT. TEMP**	[°C]	-20,0	130,0	…	**EXTERNAL WATER TEMPERATURE**[2]
7	**WIND 1 TEMP**	[°C]	0	255	…	**WINDING 1 TEMPERATURE**[3]
8	**WIND 2 TEMP**	[°C]	0	255	…	**WINDING 2 TEMPERATURE**[3]
9	**WIND 3 TEMP**	[°C]	0	255	…	**WINDING 3 TEMPERATURE**[3]
10	**MODULE TEMP**	[°C]	0	255	…	**POWER MODULE TEMPERATURE**[3]
11	**IQ**	[A]	…	…	…	**QUADRATURE CURRENT**[1]
12	**IO B.F. STS**	-	0	65535	0	**BIT FIELDS STATUS I/O**[4] Bit 0: 0/10V SIGNAL STATUS Bit 1: 4/20mA SIGNAL STATUS Bit 2: START/STOP SIGNAL STATUS Bit 3: TEMP PROBE SIGNAL STATUS Bit 4 ÷ 7: N. U. Bit 8: OUTPUT RELAY STATUS Bit 9 ÷ 15: N. U.
13	**ALARM 1 B.F.**	-	0	65535	0	**BIT FIELDS ALARM**[14] Bit 0: WATER PROBE ALARM (A01) Bit 1: WATER OVERTEMPERATURE ALARM (A02) Bit 2: POWER MODULE OVERTEMP. ALARM (A03) Bit 3: N. U. Bit 4: DATA MEMORY CORRUPTED ALARM (A05) Bit 5: EXT. WATER TEMP. PROBE ALARM[5] (A06) Bit 6: PRESSURE SENSOR ALARM (A07) Bit 7 ÷ 10: N. U. Bit 11: TWIN COMM. LOST[6] (A12) Bit 12: TWIN COMM. LOST[7] (A12) Bit 13 ÷ 15: N. U.

5.2 *Virtual memory - analog inputs table (continued)*

OBJECT_ IDEN-TIFIER	OBJECT_NAME	UNITS	PRESENT_VALUE			Description
			MIN	MAX	DEF	
14	**ALARM 2 B.F.**	-	0	65535	0	**BIT FIELDS ALARM[24]** Bit 0: INTERNAL ALARM[8] (A20) Bit 1: INTERNAL ALARM[9] (A20) Bit 2: INTERNAL ALARM[10] (A20) Bit 3: INTERNAL ALARM[11] (A20) Bit 4: INTERNAL ALARM[12] (A20) Bit 5: INTERNAL ALARM[13] (A20) Bit 6: INTERNAL ALARM[14] (A20) Bit 7 ÷ 15 = N.U.
15	**ERROR 1 B.F.**	-	0	65535	0	**BIT FIELDS ERRORS[4]** Bit 0: INTERNAL COMM. LOST (E01) Bit 1: MOTOR OVERLOAD (E02) Bit 2: DC-BUS OVERVOLTAGE (E03) Bit 3: TRIP CONTROL ERROR (E04) Bit 4: DATA MEMORY CORRUPTED ERROR[15] (E05) Bit 5: GRID VOLTAGE ERROR (E06) Bit 6: MOTOR WINDING TEMPERATURE ERROR (E07) Bit 7: POWER MODULE TEMPERATURE ERROR (E08)[16] Bit 8: NTC HW ERROR (E09)[17] Bit 9: DATA MEMORY CORRUPTED ERROR[18] (E05) Bit 10: DATA MEMORY CORRUPTED ERROR[19] (E05) Bit 11: DRY-RUN DETECT (E10) Bit 12: NTC POWER MODULE FAIL (E09) Bit 13: ROTOR BLOCKED (E04) Bit 14: MOTOR UNCONNECTED (E09) Bit 15 = N.U.

5.2 *Virtual memory - analog inputs table (continued)*

OBJECT_ IDEN-TIFIER	OBJECT_NAME	UNITS	PRESENT_VALUE			Description
			MIN	MAX	DEF	
16	**CURR. ERROR**	-	0	65535	0	**ACTIVE ERROR** CODE 0 = NO ERROR 1 = INTERNAL COMM. LOST 2 = MOTOR OVERLOAD 3 = DC-BUS OVERVOLTAGE 4 = TRIP CONTROL ERROR 5 = DATA MEMORY CORRUPTED ERROR 6 = GRID VOLTAGE ERROR 7 = MOTOR WINDING TEMPERATURE ERROR 8 = POWER MODULE TEMPERATURE ERROR 9 = GENERIC HW ERROR 10 = DRY-RUN DETECT
17	**SLAVE PWR**	[W]	…	…	…	**TWIN SLAVE INPUT POWER**[1]
18	**SLAVE H**	[m]	…	…	…	**TWIN SLAVE HEAD [H]**[1]
19	**SLAVE Q**	[m3/h]-	…	…	…	**TWIN SLAVE FLOW [Q]**[1]
20	**SLAVE RPM**	[rpm]	…	…	…	**TWIN SLAVE SPEED**[1]
21	**SLAVE W.1 T**	[°C]	0	255	…	**TWIN SLAVE WINDING 1 TEMPERATURE**[3]
22	**SLAVE W.2 T**	[°C]	0	255	…	**TWIN SLAVE WINDING 2 TEMPERATURE**[3]
23	**SLAVE W.3 T**	[°C]	0	255	…	**TWIN SLAVE WINDING 3 TEMPERATURE**[3]
24	**SLAVE MOD. T**	[°C]	0	255	…	**TWIN SLAVE POWER MODULE TEMPERATURE**[3]
25	**SLAVE IQ**	[A]	…	…	…	**TWIN SLAVE QUADRATURE CURRENT**[1]
26	**SLAVE B.F. A1**	-	0	65535	0	**TWIN SLAVE BIT FIELDS ALARM 1**[20]
27	**SLAVE B.F. A2**	-	0	65535	0	**TWIN SLAVE BIT FIELDS ALARM 2**[21]
28	**SLAVE B.F. E2**	-	0	65535	0	**TWIN SLAVE BIT FIELDS ERRORS**[22]
29	**LOG ACT ERR**	-	0	10	0	**ACTIVE ERROR CODE X**[23]
30	**LOG ERR STA T**	[s]	0	4294967296	0	**START TIME ERROR X**[23]
31	**LOG ERR END T**	[s]	0	4294967296	0	**END TIME ERROR X**[23]
32	**LOG ERR B.F.**	-	0	65535	0	**BIT FIELDS ERROR X**[23]
33	**LOG ERR COUNT**	-	0	40000	0	**COUNTER ERROR X**[23]
34	**LOG RPM SET**	[rpm]	…	…	…	**SPEED SETPOINT**[23]
35	**LOG RPM VALUE**	[rpm]	…	…	…	**SPEED**[23]

5.2 *Virtual memory - analog inputs table (continued)*

OBJECT_ IDEN-TIFIER	OBJECT_NAME	UNITS	PRESENT_VALUE			Description
			MIN	MAX	DEF	
36	**LOG IQ**	[A]	…	…	…	**QUADRATURE CURRENT[23]**
37	**LOG AL 1 B.F.**	-	0	65535	0	**BIT FIELDS ALARM 1[23]**
38	**LOG AL 2 B.F.**	-	0	65535	0	**BIT FIELDS ALARM 2[23]**
39	**LOG B.F. IO**	-	0	65535	0	**BIT FIELDS STATUS I/O[23]**
40	**LOG PWR**	[W]	…	…	…	**INPUT POWER[23]**
41	**LOG Q**	[m3/h]-	…	…	…	**FLOW [Q][23]**
42	**LOG H**	[m]-	…	…	…	**HEAD [H][23]**
43	**LOG PWR M T**	[°C]	0	255	…	**POWER MODULE TEMPERATURE[23]**
44	**LOG ON-OFF**	-	0	1	1	**OPERATING MODE[23]**
45	**N.U.**	-	-	-	-	**Available for next development**
46	**N.U.**	-	-	-	-	**Available for next development**
47	**N.U.**	-	-	-	-	**Available for next development**
48	**N.U.**	-	-	-	-	**Available for next development**
49	**LIFE TMR**	[s]	0	4294967296	0	**LIFE TIMER**
50	**TMR P 0-25**	[s]	0	4294967296	0	**POWER CONSUMPTION 0-25 TIMER**
51	**TMR P 25-50**	[s]	0	4294967296	0	**POWER CONSUMPTION 25-50 TIMER**
52	**TMR P 50-75**	[s]	0	4294967296	0	**POWER CONSUMPTION 50-75 TIMER**
53	**TMR P 75-100**	[s]	0	4294967296	0	**POWER CONSUMPTION 75-100 TIMER**
54	**SYSTEM_STATUS**	-	-	-	-	**SYSTEM STATUS** **1 = Initialization** **10 = Air Purge procedure** **11 = Circulator running in Constant Pressure (Head) control mode** **12 = Circulator running in ConstΔP/T control mode** **13 = Circulator running in Proportional Pressure (Head) control mode** **14 = Circulator running in PropΔP/T control mode** **15 = Circulator running in Fixed Speed control mode** **16 = Circulator running in Fixed Speed 0-10V control mode** **17 = Circulator running in ConstT or ConstΔT control mode** **18 = Night Mode active** **19 = Anti-Lock rotor procedure** **30 = Error** **31 = Stop** **32 = Off** **33 = Off 0-10V** **34 = Standby**

1 The MIN, MAX and DEFAULT value depends strictly on the pump model.
2 If Present Value = 3.40282347e+38F the temperature probe could be in a fault condition.
3 If Present Value = 255 the temperature probe could be in a fault condition.
4 The Present Value of this Object has to be converted in a 16bit binary data (i.e. 35 ⇒ 0b0000000000100011).
5 This alarm is enabled only if "TEMP. CONTROL MODE" is active (> 0)
6 This bit field is enabled only in Twin Slave
7 This bit field is enabled only in Twin Master
8 This bit field refers to internal communication problem, specifically UNKNOWN COMMAND
9 This bit field refers to internal communication problem, specifically INCORRECT DATA LENGTH
10 This bit field refers to internal communication problem, specifically INCORRECT DATA VALUE
11 This bit field refers to internal communication problem, specifically INCORRECT MOTOR CONFIGURATION
12 This bit field refers to internal communication problem, specifically INCORRECT PWM FREQUENCY
13 This bit field refers to internal communication problem, specifically PARAMETER NOT SAVED
14 This bit field refers to internal communication problem, specifically COMMAND NOT ACCEPTED
15 This bit field refers to EEPROM data corruption
16 This bit field refers to over-temperature, probe open or shortened
17 This bit field refers to stuck probe
18 This bit field refers to factory data corruption
19 This bit field refers to hydraulic maps corruption
20 Bit Field alarm with the same active bits as in object 12
21 Bit Field alarm with the same active bits as in object 13
22 Bit Field error with the same active bits as in object 14
23 Log information referring to error number X, selected by Analog Value object n°18 (see par. 5.1)
24 If flow < 0.3m^3/h then register value=0.3m^3/h

Xylem |'zīləm|

1) The tissue in plants that brings water upward from the roots;
2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

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