



**BERNARD®  
CONTROLS**

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## **Profibus - Addressing guide INTELLI+ AND LOGIC**

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SUG\_18008s - Ind. -.01  
Art: TBD



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# 1 CONTROLS AND INDICATIONS

The Profibus DPV1 system has a cyclic communication (compatible with Profibus DP) and acyclic communication.

The cyclic communication is mainly use for the Process. Data are read and written in a well-defined timing. The useful data are selected in the list below and transmitted in a cyclic way. The selection of only a few data also increases the communication speed. The acyclic communication is mainly use for maintenance. The data are collected only on request that avoid to reduce the cyclic communication speed. See below "§ 5 Acyclic communication"

## 1.1 CONTROLS

Valve control by the Profibus fieldbus is possible only if the actuator rotating selector is in the "remote" position. Conditions which can prevent a command to be executed:

- Actuator rotating selector on "local" or "OFF"
- Alarm tripped (motor thermal overload)
- Emergency command received (ESD)
- Command is set by hardware

### Control byte description

Actuators controls are located at the addresses 0 to 4 on the Profibus interface module. These controls are:

#### Address 0: ON-OFF control

Bit N°	Value	Description
BIT 0	0	NO COMMAND
	1	OPEN COMMAND
BIT 1	0	NO COMMAND
	1	CLOSE COMMAND
BIT 2	0	STOP (OR MAINTAINED COMMAND MODE)
	1	NO STOP (OR PULSE COMMAND MODE)
BIT 3 TO 6		NOT USED
BIT 7	0	NO LOCAL COMMAND INHIBITION
	1	LOCAL COMMAND INHIBITION

**OPEN/CLOSE:** Open and close command. According to the actuator configuration, it is possible to select a priority to the opening or to the closing command (refer to the actuator's manual). By default, there is no priority given to either opening or closing.

Priority can be used to:

- Allow to reverse the actuator rotation direction during a manoeuvre without having to use the stop command. In this case it is necessary to set a priority to the opening or to the closing direction.
- Give priority to one or the other rotation direction: if the actuator receives the open and close commands simultaneously and the priority has been given to the opening, the actuator will run the open position.

**STOP:** if this command is maintained at 0 (most common case), the open and close commands have to be maintained. If this command is set to 1, a short duration open / close command pulse is sufficient to drive the valve to the open or closed position. In this case, the stop command (0) can be used to stop the actuator during the travel in its current position.

**LOCAL COMMAND INHIBIT:** the local command inhibit is remotely controlled. This command inhibits the local opening and closing commands, and enables remote commands, even if the local/remote selector of the actuator is set to local.

### Address 1: Auxiliary commands

Bit N°	Value	Description
BIT 1 & 0		00 : ACTUATOR CONTROL THE LOCAL/REMOTE ; 01= REMOTE ; 10 LOCAL ; 11=LOCAL+ REMOTE
BIT 3 & 2		00 (OR 11) = ACTUATOR CONTROL THE PROPORTIONAL/DIGITAL; 10= CONTROL BY THE ADDRESS 0; 01= CONTROL BY THE ADDRESS 2 OR 3)
BIT 4		OPENING INHIBIT
BIT 5		CLOSING INHIBIT
BIT 6*	0	NO ESD COMMAND
	1	ESD COMMAND
BIT 7*	0	NO PARTIAL STROKE COMMAND
	1	PARTIAL STROKE COMMAND

\* Only available with Intelli+ control

**Bit 1 & 0:** This is used to force the local remote of the actuator, if these two bits are set to zero, the local remote is given by the actuator selector, if set to 01, 10 or 11 the value overrides the selector (the selector has no effect).

**Bit 3 & 2:** This can only be used if the actuator is a positioning or modulating actuator. This is used to force the positioner activation or not (see § 3.4 setup). If the value of the bits is set to 00, the menu indicates the type of command (on-off or positioning), if you send 1 in the bit 3 and 0 in the bit 2, the control is by command on-off.

**LOCAL or REMOTE:** substitutes for the local/remote selector of the actuator and is used to remotely enable either remote control or local control.

**LOCAL+REMOTE:** same definition as above, but local and remote control can be enabled simultaneously.

**OPEN, CLOSE INHIBIT:** this command is used to inhibit opening or closing of the actuator.

**PROPORTIONAL/DIGITAL:** for an actuator used in modulation with positioner function, it is possible to issue remote commands via proportional control (equivalent to 4-20mA) or via opening/closing/stop commands. The PROPORTIONAL/DIGITAL command is used to switch over from one type of command to another.

**ESD:** the ESD (Emergency Shut Down) is configured by the menu.

**PARTIAL STROKE:** This command performs automatically a test to confirm that the actuator is still operational. The test consists to operate the actuator on a partial stroke and return. The start position and the stroke % can be configured. An alarm is emitted if the stroke is not performed in a predetermined delay. This delay is worked out from the rated operating time.

**Address 2 and 3:** Proportional control (set-point), only on modulation actuator

Address N°	Bit N°	Value	Description
2	BIT 0 TO 7	MSB	INCREMENT 0.01%. RANGE 0 TO 10000. 0= CLOSED, 10000= OPEN
3	BIT 0 TO 7	LSB	

To choose between proportional and ON-OFF control, set the menu positioner activation on 'Enable' for proportional command (see §3.4 setup) or send address 1 bit 3&2 to 01.

#### Address 4: Relay output

Bit N°	Value	Description
BIT 0	0	RELAY 1 CONTACT OPEN
	1	RELAY 1 CONTACT CLOSED
BIT 1	0	RELAY 2 CONTACT OPEN
	1	RELAY 2 CONTACT CLOSED
BIT 2	0	RELAY 3 CONTACT OPEN
	1	RELAY 3 CONTACT CLOSED
BIT 3*	0	RELAY 4 CONTACT OPEN
	1	RELAY 4 CONTACT CLOSED
BIT 4*	0	RELAY 5 CONTACT OPEN
	1	RELAY 5 CONTACT CLOSED
BIT 5*	0	RELAY 6 CONTACT OPEN
	1	RELAY 6 CONTACT CLOSED
BIT 6*	0	RELAY 7 CONTACT OPEN
	1	RELAY 7 CONTACT CLOSED
BIT 7		NOT USED

\* Bit 3 to bit 6 is optional.

The relays could be used to have an output indication (wired as a non fieldbus actuator) or to drive outside devices through Profibus. These optional relays could be configured in Logic/Intelli+ menu for actuator indication or output controls.



## 1.2 ACTUATOR FEEDBACK INDICATION

### Indication byte description

The first five words of the Profibus interface give the actuator status.

#### Address 0: Indications

Bit N°	Value	Description
BIT 0	0	VALVE NOT OPEN
	1	VALVE OPEN
BIT 1	0	VALVE NOT CLOSED
	1	VALVE CLOSED
BIT 2	0	NO ACTION
	1	TORQUE LIMITER ACTION IN OPEN DIRECTION
BIT 3	0	NO ACTION
	1	TORQUE LIMITER ACTION IN CLOSE DIRECTION
BIT 4	0	ACTUATOR NOT TO LOCAL MODE
	1	ACTUATOR TO LOCAL MODE
BIT 5	0	ACTUATOR NOT TO REMOTE MODE
	1	ACTUATOR TO REMOTE MODE
BIT 6	0	ACTUATOR NOT TO OFF MODE
	1	ACTUATOR TO OFF MODE
BIT 7	0	POWER OFF (ABSENCE OF MAIN POWER SUPPLY OR TOO LOW)
	1	POWER ON (PRESENCE OF MAIN POWER SUPPLY)

**VALVE OPEN/CLOSE:** confirms the valve is open or closed

**TORQUE LIMITER ACTION OPEN/CLOSE:** torque limiter action in opening/closing direction. This information is transmitted even if the valve stops normally on torque.

**ACTUATOR TO LOCAL MODE:** No command allowed from Profibus. Indications are always available.

**ACTUATOR TO REMOTE MODE:** command allowed from Profibus. Indications are always available.

**ACTUATOR TO OFF MODE:** no command allowed in local or from Profibus. Indications are always available.

**POWER ON:** The actuator is normally powered.

## Address 1: Indications

Bit N°	Value	Description
BIT 0	0	ACTUATOR NOT OPENING
	1	ACTUATOR OPENING
BIT 1	0	ACTUATOR NOT CLOSING
	1	ACTUATOR CLOSING
BIT 2	0	NO HANDWHEEL ACTION
	1	HANDWHEEL ACTION
BIT 3*	0	NO ESD COMMAND
	1	ACTUATOR RECEIVES AN EMERGENCY COMMAND ESD
BIT 4	0	THE ACTUATOR IS NOT RUNNING
	1	ACTUATOR RUNNING
BIT 5	0	ACTUATOR AVAILABLE
	1	ACTUATOR FAULT INDICATION
BIT 6	0	NO POSITION SENSOR FAULT
	1	POSITION SENSOR FAULT
BIT 7	0	NO TORQUE SENSOR FAULT
	1	TORQUE SENSOR FAULT

\* Only available with Intelli+ control

**ACTUATOR OPENING/CLOSING:** the actuator is operated in opening/closing direction.

**HANDWHEEL ACTION:** the handwheel has been actuated since the last electrical operation.

**ACTUATOR RECEIVES AN EMERGENCY COMMAND ESD:** The actuator is not available because it receives an emergency command which overrides all other commands.

**ACTUATOR RUNNING:** the actuator is operated in opening or closing direction.

**ACTUATOR FAULT INDICATION:** The actuator is not available due to a following event, motor thermal overload, lost phase (in case of 3ph supply) or locked rotor. Including additional faults (refer to the control manual to configure).

**POSITION OR TORQUE POWER FAULT:** Intelli+ receives no information from the position or torque sensor.

## Address 2: Alarms

Bit N°	Value	Description
BIT 0	0	NO LOCKED MOTOR OPEN ALARM
	1	LOCKED MOTOR OPEN
BIT 1	0	NO LOCKED MOTOR CLOSE ALARM
	1	LOCKED MOTOR CLOSE
BIT 2	0	NO MOTOR THERMAL OVERLOAD
	1	MOTOR THERMAL OVERLOAD
BIT 3	0	NO LOST PHASE ALARM
	1	LOST PHASE
BIT 4	0	NO OVERTRAVEL ALARM
	1	OVERTRAVEL ALARM
BIT 5	0	NO DIRECTION OF ROTATION OPEN ALARM
	1	DIRECTION OF ROTATION OPEN ALARM
BIT 6	0	NO DIRECTION OF ROTATION CLOSE ALARM
	1	DIRECTION OF ROTATION CLOSE ALARM
BIT 7*	0	NO RTC BATTERY FAULT
	1	RTC BATTERY LOW

\* Only available with Intelli+ control

**LOCKED MOTOR OPEN/CLOSE:** The actuator locked in the opening/closing direction.

**MOTOR THERMAL OVERLOAD:** The motor thermal contact tripped. The actuator will be again available as soon as the motor will cool.

**LOST PHASE:** In 3-phase, a phase is missing. No start allowed.

**OVERTRAVEL ALARM:** Position overshoot > 5% after motor shut down.

**DIRECTION OF ROTATION OPEN/CLOSE:** Opening/closing direction of rotation discrepant

**BATTERY LOW OR IS NOT PRESENT:** The battery should be replaced because of low voltage or the battery is missing (refer to the Intelli+ manual).

**Address 3: Running torque in%**

Bit N°	Value	Description
BIT 0 TO 7	0-150	RUNNING TORQUE IN %

**RUNNING TORQUE:** Indication of the instantaneous torque. 100% is the maximum actuator rated torque

**Address 4-5: Actuator position feedback**

Address	Bit N°	Value	Description
2	BIT 0 TO 7	MSB	INCREMENT 0.01%. RANGE 0 TO 10000. 0= CLOSED, 10000= OPEN.
3	BIT 0 TO 7	LSB	

**ACTUATOR POSITION FEEDBACK:** 0,00%= closed, 100,00%= open

**Address 6: Indication**

Bit N°	Value	Description
BIT 0	0	NO HUNTING
	1	ACTUATOR HUNTING
BIT 1	0	HMI COMMUNICATION IS RUNNING
	1	HMI COMMUNICATION IS IN FAULT
BIT 2	0	POSITION IS CORRECT
	1	POSITION IS IN FAULT (<-10% OR >110%)
BIT 3	0	NO ACTIVITY MEMORY FAULT
	1	ACTIVITY MEMORY FAULT
BIT 4	0	NO STOP MID TRAVEL
	1	STOP MID TRAVEL
BIT 5	0	NO LOST SIGNAL
	1	LOST SIGNAL 4-20MA
BIT 6*	0	NO PARTIAL STROKE IN PROGRESS
	1	PARTIAL STROKE IN PROGRESS
BIT 7*	0	NO PARTIAL STROKE FAULT
	1	PARTIAL STROKE FAULT

\* Only available with Intelli+ control

**ACTUATOR HUNTING:** positioning is unstable.

**HMI:** Communication between the HMI and the base board.

**POSITION:** Error due to a positioning measurement out of the normal range (-10% 110%).

**STOP MID TRAVEL:** The actuator is at a stop, neither open nor closed.

**LOST SIGNAL:** 4 to 20mA lost signal (In case of analogue and hardwired input signal)

**PARTIAL STROKE IN PROGRESS:** A partial stroke command has been issued and this test is not ended.

**PARTIAL STROKE FAULT:** The partial stroke test has detected a fault. The actuator is not fully available.

#### Address 7: Alarms

Bit N°	Value	Description
BIT 0*	0-1	NAMUR NE107 MAINTENANCE REQUIRED
BIT 1*	0-1	NAMUR NE107 OUT OF SPECIFICATION
BIT 2*	0	NAMUR NE107 FUNCTION CHECK
BIT 3*	0	NAMUR NE107 FAILURE
BIT 4*	0	TORQUE NOT APPROCHING THE LIMIT (BIT 3 ADDRESS 4)
	1	TORQUE APPROCHING THE LIMIT
BIT 5	0	NO ERROR ENTRY AUX2 (BIT 10 ADDRESS 3)
	1	ERROR HW ENTRY AUX2
BIT 6	0	NOT TOO MANY START LAST HOUR
	1	TOO MANY STARTS IN THE LAST HOUR
BIT 7	0	24V AUX PRESENT
	1	LOST OF 24V AUXILLIARY

\* Only available with Intelli+ control



**Namur NE107:** The NE107 recommendation defines that detailed device-specific diagnostics are summarised as four simple status signals. These signals ensure that the plant operator is not inundated with device troubleshooting details and cryptic error codes. The NAMUR NE107 recommendation harmonises the display of status for devices. Each fault or warning can be assigned to one signalling, please refer to the Intelli+ manual for configuration of this signalling.

**TORQUE APPROCHING THE LIMIT:** This indicates that, during the travel, the torque is approaching the limit. This is only a warning and does not stop the actuator.

**ERROR HW ENTRY AUX2:** A hardware error is detected on the main board on the Aux 2 entry. The main board should be replaced.

**TOO MANY STARTS IN THE LAST HOUR:** Starting rate exceeding the actuator class average.

**LOST OF 24V AUXILLIARY:** Auxiliary power supply fault for external circuits.

**Address 8: Information**

Bit N°	Value	Description
BIT 0*	0	CHANNEL IS BACKUP (REDUNDANCY OPTION)
	1	CHANNEL IS PRIMARY (REDUNDANCY OPTION)
BIT 1*	0	1 CHANNEL AVAILABLE (REDUNDANCY OPTION)
	1	2 CHANNELS AVAILABLE (REDUNDANCY OPTION)
BIT 2*	0	SR MODE (SYSTEM REDUNDANCY) (REDUNDANCY OPTION)
	1	FR MODE (FLYING REDUNDANCY) (REDUNDANCY OPTION)
BIT 3	0	NO BASE BOARD SERIAL COMMUNICATION FAULT
	1	BASE BOARD SERIAL COMMUNICATION FAULT
BIT 4	1	FIELD BUS HAVE COMMAND
	0	HARDWIRED COMMAND
BIT 5*	0	REDONDANT COMMUNICATION
	1	IN CASE OF REDUNDANT BOARD THE COMMUNICATION IS NOT REDONDANT
BIT 6	0-1	VALVE JAMMED
BIT 7	0-1	LOCAL COMMAND INHIBIT

\* Only available with Intelli+ control and with redundant board

**CHANNEL IS PRIMARY/BACKUP:** For a redundant communication the Profibus interface has 2 channels connected to the Profibus line. The one that got a data exchange state is named primary channel and the other one backup channel.

**1 or 2 CHANNELS AVAILABLE:** Indication of how many channels are available.

**SR/FR MODE:** SR mode uses a redundant fieldbus with 2 lines, FR mode uses a redundant fieldbus with only one line.

SR mode is the default configuration.

**BASE BOARD SERIAL COMMUNICATION FAULT:** An error occurs on the communication between the base board and the fieldbus Board. The signalling is not refreshed.

**FIELD BUS HAVE COMMAND / HARDWIRED COMMAND:** Depending on the configuration of the type of control (see § 3.4 setup).

**VALVE JAMMED:** Actuation could not be completed due to excess torque.

**LOCAL COMMAND INHIBIT:** A local command inhibit is currently present, as a consequence of sending the following command: LOCAL COMMAND INHIBITION (Address 0 bit 7 of the control byte). A key is on the LCD screen for signalling this command in local.

**Address 9-10:** External device analogue input signal

Address	Bit N°	Value	Description
9	BIT 0 TO 7	MSB	INCREMENT 0.1%. RANGE 0 TO 1000. 0= 0MA, 1000= 20MA
10	BIT 0 TO 7	LSB	

**EXTERNAL DEVICE INPUT SIGNAL:** A hardwired signal (for example 4 to 20mA) is coming from another device and uses the actuator Profibus interface to communicate the value.

**Address 11: External device input signal/alarms**

Bit N°	Value	Description
BIT 0	0-1	SIGNAL A COMMAND ON STOP HARDWIRED ENTRY
BIT 1	0-1	SIGNAL A COMMAND ON OPEN HARDWIRED ENTRY
BIT 2	0-1	SIGNAL A COMMAND ON CLOSE HARDWIRED ENTRY
BIT 3	0-1	SIGNAL A COMMAND ON AUX1 HARDWIRED ENTRY
BIT 4	0-1	SIGNAL A COMMAND ON AUX2 HARDWIRED ENTRY
BIT 5	0	INTERNAL TEMPERATURE OK
	1	INTERNAL TEMPERATURE OUT OF RANGE
BIT 6*	0	VIBRATION OK
	1	VIBRATION OUT OF RANGE
BIT 7	0	BUTTON OK
	1	BUTTON FAULT

\* Only available with Intelli+ control

**SIGNAL A COMMAND:** Indications of hardwired inputs (enables the communication through Profibus, indications coming from outside devices).

**INTERNAL TEMPERATURE OUT OF RANGE:** The internal sensor detects that the temperature is too low or too high, please check the temperature range of the actuator.

**VIBRATION OUT OF RANGE:** The internal vibration sensor detects that the level of vibration is too high, please check the environment.

**BUTTON FAULT:** The button of the HMI is in fault, please change the HMI board.

**Address 12 to13:** Number of starts last hour

Address	Bit N°	Value	Description
12	BIT 0 TO 7	MSB	NUMBER OF STARTS LAST HOUR (2 BYTES)
13	BIT 0 TO 7	LSB	

**TOTAL NUMBER OF STARTS:** to obtain the accumulated figures since actuator manufacturing.

**Address 14 to 17:** Number of starts

Address	Bit N°	Value	Description
14	BIT 0 TO 7	MSB	NUMBER OF STARTS (4 BYTES)
17	BIT 0 TO 7	LSB	

**TOTAL NUMBER OF STARTS:** to obtain the accumulated figures since actuator manufacturing.

**Address 18 to 21: Running time**

Address	Bit N°	Value	Description
18	BIT 0 TO 7	MSB	RUNNING TIME (4 BYTES)
21	BIT 0 TO 7	LSB	

**TOTAL RUNNING TIME.** To obtain the accumulated figures since actuator manufacturing. Unit is in sec.

**Address 22 to 25: Partial number of starts**

Address	Bit N°	Value	Description
22	BIT 0 TO 7	MSB	PARTIAL NUMBER OF STARTS (4 BYTES)
25	BIT 0 TO 7	LSB	

**PARTIAL NUMBER OF STARTS:** Number of starts since the last reset.

**Address 26 to 29: partial running time**

Address	Bit N°	Value	Description
26	BIT 0 TO 7	MSB	PARTIAL RUNNING TIME (4 BYTES)
29	BIT 0 TO 7	LSB	

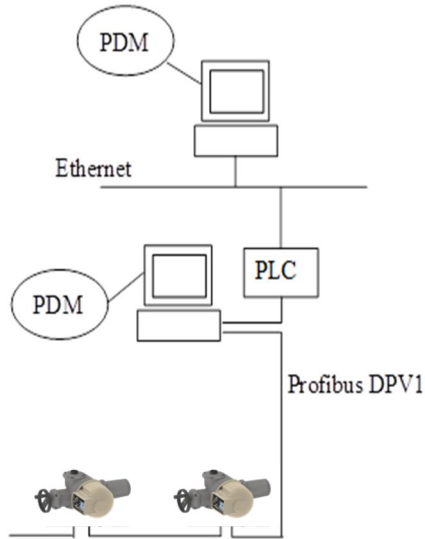
**PARTIAL RUNNING TIME:** Total running time since the last reset. Unit is in sec.

## 2 ACYCLIC COMMUNICATION

The Profibus interface supports acyclic communication (extension V1 of the Profibus protocol) which allows to read the actuator's state, to read all its configuration. It can be also reconfigured through the V1 extension.

There is two type of master in the acyclic communication:

- The master class1 which supports cyclic communication. It is normally the same PLC which manages the actuators.
- The master class2 supports all the acyclic communication. It can be included to Profibus without interference. A laptop equipped with a Profibus module and PDM software may be used as a master class2 anywhere on the line.



The Profibus interface supports the Read and Write messages of the master class1 (MSAC1\_Read, MSAC1\_Write).

For master class 2, this interface supports Initiate, Abort, Read and Write services. Interface board supports a maximum of 2 simultaneous class2 master connections.

The Profibus interface supports the Read and Write messages of the master class1 (MSAC1\_Read, MSAC1\_Write). For master class 2, this interface supports Initiate, Abort, Read and Write services. Interface board supports a maximum of 2 simultaneous class2 master connections. We advise to use PDM Siemens software to read and configure the actuators with a master class2. We can give you an Electronic Device Description (EDD) which allows you to manage our actuators with PDM.

With PDM and this EDD you can configure and parameterise the actuators and also recover information for diagnostics and maintenance. For example, alarms, activity, torque curves...

To use PDM, not straight to the fieldbus but above the PLC then the PLC must be Siemens S7 400 series.

In case of a redundant system, the connection of PDM to one fieldbus line, will collect all data including those communicating on the other line.



## Available data through PROFIBUS acyclic communication

Data is organised in slot and index:

**Slot = 0** are read only for manufacturing configuration  
**Indexes (0 to 47)** are listed below.

Index	Data	Description	Byte	Type
0	SERIAL NUMBER	ACTUATOR SERIAL NUMBER	16	STRING
1	PAINT TYPE	PAINT TYPE	16	STRING
2	TYPE OF POWER SUPPLY	(0= 3PH; 1=SINGLE PHASE; 2= DC)	1	BYTE
3	VOLTAGE OF POWER SUPPLY	(IN V)	2	UINT16
4	POWER FREQUENCY	IN HZ	1	UINT8
5	NOMINAL CURRENT	IN A	4	FLOAT 32
6	NOMINAL CURRENT	IN A	4	FLOAT 32
7	MOTOR POWER	IN KW	4	FLOAT 32
8	WIRING DIAGRAM	WIRING DIAGRAM	20	STRING
9	DIMENSIONAL DRAWING	DIMENSIONAL DRAWING	20	STRING
10	LUBRICANT TYPE	LUBRICANT TYPE	20	STRING
11	VOLUME LUBRICANT	(X0.1)	1	UINT8
12	UNIT OF THE VOLUME	0=LITRE; 1=KG	1	UINT8
13	PROTECTION TYPE	0= WATERPROOF; 1= EXPLOSIONPROOF	1	UINT8

Index	Data	Description	Byte	Type
14	IP	0= IP23; 1=IP44; 2=IP55; 3=IP65; 4=IP67; 5=IP68	1	UINT8
15	REGULATION CLASS		1	UINT8
16	RATIO POSITION SENSOR		4	FLOAT 32
17	MAXIMUM TEMPERATURE	IN °C	1	UINT8
18	MINIMUM TEMPERATURE	IN °C	1	SINT8
19	OUTPUT FLANGE ACTUATOR		1	UINT8
20	OUTPUT FORM ACTUATOR		1	UINT8
21	POSITION SENSOR TYPE		1	UINT8
22	PRESENCE OF TORQUE SENSOR		1	UINT8
23	PRESENCE OF BATTERY		1	UINT8
24	LIMIT OF STARTING TORQUE	IN %	1	UINT8
25	NATURE OF EXPLOSION PROOF		20	STRING
26	APPROVAL OF EXPLOSION PROOF		20	STRING
27	MANUFACTURING DATE	BYTE[0]=DD; BYTE[1]=MM; BYTE[2]=YYXX; BYTE[3]=XXYY	4	UINT8

Index	Data	Description	Byte	Type
28	TORQUE CALIBRATION		8	4*UINT16
29	ACTUATOR MAX TORQUE	IN NM	2	UINT16
30	ACTUATOR NOMINAL SPEED	IN RPM	4	UINT8
31	MEASURE OF TORQUE IN LOCAL COMMAND		1	UINT8
32	PRESENCE OF VARIABLE FREQUENCY DRIVER	0=NO; 1=YES	1	UINT8
33	ETALON INPUT OF 4MA	0-4095	2	UINT16
34	ETALON INPUT OF 20MA	0-4095	2	UINT16
35	CONTACTOR TYPE		1	UINT8
36	NUMBER OF MANUFACTURER CONFIGURATION WRITING		4	UINT32
37	DATE OF LAST MODIFICATION		4	UINT8
38	MAINBOARD SOFTWARE VERSION		3	UINT8
39	HMI BOARD SOFTWARE VERSION		3	UINT8
40	INTELLI BOARD SOFTWARE VERSION		3	UINT8

Index	Data	Description	Byte	Type
41	FIELDBUS BOARD VERSION		3	UINT8
42	ACTUATOR MODEL		20	STRING
43	TYPE OF CONTROL	(1=INTELLI+,0= LOGIC)	1	UINT8
44	MOTOR SPEED	RPM	2	UINT16
45	MOTOR DUTY		1	UINT8
46	TYPE OF ACTUATOR		1	UINT8
47	POSITIONER ACTIVATION		1	UINT8

**Slot =1 are read/write (partial) for user configuration  
Indexes (0 to 76) are listed below.**

**Do not write an illegal value, this can cause a malfunction.**

Index	Data	Description	Byte	Type
0	TAG NAME		20	STRING
1	LOCATION OR PROCESS		20	STRING
2	OUTPUT FLANGE REDUCER		1	UINT8
3	OUTPUT FORM REDUCER		1	UINT8
4	REDUCER MECHANICAL ADVANTAGE		4	FLOAT 32
5	REDUCER GEAR RATIO		4	FLOAT 32
6	CONFIGURATION OF AUX COMMAND 1		1	UINT8
7	CONFIGURATION OF AUX COMMAND 1		1	UINT8
9	BAND GAP		4	FLOAT 32
10	POSITIONING TYPE		1	UINT8
13	GEARBOX MAXIMUM TORQUE		1	UINT8
14	SCREWPITCH		4	FLOAT 32
15	MEASURED STROKE IN DEGREES	(READ ONLY)	4	FLOAT 32

Index	Data	Description	Byte	Type
16	UNITS	0=METRIC; 1=IMPERIAL	1	UINT8
17	DATE FORMAT	0:MM/JJ/AAAA 1:JJ/MM/AAAA 2:AAAA/MM/JJ	1	UINT8
18	CONFIGURATION BY PASS IN ESD*	0:NO 1:MOTOROVERH EATED 2:TORQUE MAX 3: BOTH	1	UINT8

<p>19</p>	<p><b>FAULT RELAY CONFIGURATION*:</b>  <b>BIT 0: ERROR CONFIGURATION MEMORY</b>  <b>BIT1: ERROR ACTIVITY MEMORY</b>  <b>BIT2: VALVE JAMMED</b>  <b>BIT3: PARTIAL STROKE FAULT</b>  <b>BIT 4: PHASE LOST</b>  <b>BIT 5: ERROR POSITION</b>  <b>BIT 6: ERROR DIRECTION OF ROTATION,</b>  <b>CLOSING</b>  <b>BIT 7: ERROR DIRECTION OF ROTATION</b>  <b>OPENING</b>  <b>BIT 8: ERROR BLOCKING IN CLOSING</b>  <b>BIT 9: ERROR BLOCKING IN OPENING</b>  <b>BIT 10: ACTUATOR HUNTING</b>  <b>BIT 11: RTC BATTERY FLAT</b>  <b>BIT 12: ERROR POSITION SENSOR</b>  <b>BIT 13: ERROR TORQUE SENSOR</b>  <b>BIT 14: LOST OF 4-20MA</b>  <b>BIT 15: OVERTRAVEL</b>  <b>BIT 16: ELECTRONIC TEMPERATURE</b>  <b>EXCESSIVE</b>  <b>BIT 17: COMMUNICATION HMI MAIN</b>  <b>BOARD</b>  <b>BIT 18: MOTOR THERMAL SWITCH</b>  <b>BIT 19: HANDWHEEL COMMAND</b>  <b>BIT 20: FIELDBUS REDUNDANCY</b>  <b>BIT 21: FIELDBUS COMMUNICATION</b>  <b>BIT 22: TOO HIGHT VIBRATION</b>  <b>BIT 23: LOST OF 24V AUXILIARY</b>  <b>BIT 24: TOO MANY STARTS</b>  <b>BIT 25: ERROR INTERNAL AUX2</b>  <b>COMMAND</b>  <b>BIT 26: ERROR LOST POWER SUPPLY</b>  <b>BIT 27: ERROR HMI BUTTON</b>  <b>BIT 28: PHASE NOT CONFORM</b>  <b>BIT 29: MODE IS LOCAL</b>  <b>BIT 30: MODE IS OFF</b>  <b>BIT 31 TORQUE PRE ALERT</b></p>	<p>4</p>	<p>UINT32</p>
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20	<p>RELAY CONFIGURATION 1:          BIT 0: VALVE IS OPEN          BIT 1: VALVE IS CLOSE          BIT 2: LIMIT IN OPENING REACHED          BIT 3: LIMIT IN CLOSING REACHED          BIT 4: IN OPENING          BIT 5: IN CLOSING          BIT 6: IN MOVE          BIT 7: POSITION BETWEEN X AND Y          BIT 8: ESD PRESENCE*          BIT 9: MODE IS OFF          BIT 10: MODE IS LOCAL          BIT 11: MODE IS REMOTE          BIT 12: MID STOP          BIT 13: MOTOR OVERHEATED          BIT 14: VALVE BLOCKED          BIT 15: PHASE LOST          BIT 16: PRESENCE OF PRINCIPAL POWER SUPPLY          BIT 17: HANDWHEEL COMMAND          BIT 18: COMMAND BUS OR HARDWIRED          BIT 19: OVERTORQUE          BIT 20: BATTERY FLAT*          BIT 21: IN PARTIAL STROKE*          BIT 22: PARTIAL STROKE FAULT*          BIT 23: MAINTENANCE*          BIT 24: FUNCTION CHECK*          BIT 25: OUT OF SPECIFICATION*          BIT 26: FAILURE*          BIT 27: ANALOG SETPOINT LOST          BIT 28: SENSE OF RELAY (0 NO, 1 NC)          BIT 29: BLINKING</p>		4	UINT32
21	RELAY CONFIGURATION 2	IDEM	4	UINT32
22	RELAY CONFIGURATION 3	IDEM	4	UINT32
23	RELAY CONFIGURATION 4	IDEM	4	UINT32



24	RELAY CONFIGURATION 5	IDEM	4	UINT32
25	RELAY CONFIGURATION 6	IDEM	4	UINT32
26	RELAY CONFIGURATION 7	IDEM		
27	SENSE OF REMOTE COMMANDS		1	UINT8
28	LIMIT BTO TORQUE	40 TO 101	4	UINT32
29	LIMIT RTO TORQUE	40 TO 100	4	UINT32
30	LIMIT ETO TORQUE	40 TO 100	4	UINT32
31	LIMIT BTC TORQUE	40 TO 101	4	UINT32
32	LIMIT RTC TORQUE	40 TO 100	4	UINT32
33	LIMIT ETC TORQUE	40 TO 100	4	UINT32
34	BUS TYPE	(READ ONLY) 0:FIELDBUS BOARD NOT PRESENT 1:MODBUS 2:PROFIBUS SIMPLE 3:PROFIBUS REDUNDANT 4:DEVICENET 5:FF 6:CAN	1	UINT8
35	DISPLAY ORIENTATION	0=0°;1=90°;2=18 0°;3=270°	1	UINT8
36	DISPLAY LANGUAGE		1	UINT8
37	CLOSING/OPENING ZONE	3 TO 20	1	UINT8

38	NAMUR CONFIGURATION NE107		20	UINT8
39	PASSWORD 1	FOR READ ONLY (0 TO 999)	2	UINT16
40	PASSWORD 2	FOR READ WRITE (0 TO 999)	2	UINT16
41	START POSITION OF PARTIAL STROKE*	0= OPEN; 1= CLOSE	1	UINT8
42	STROKE PERCENTAGE OF PARTIAL STROKE*	1 TO 100	1	UINT8
43	PRIORITY	PRIORITY 0:NONE 1:OPENING 2:CLOSING 3:BOTH (OPENING AND CLOSING)	1	UINT8
44	SELF LEARNING POSITIONNING	0: DISABLE 1: ENABLE	1	UINT8
45	TIMING IN CLOSING*	IN S	2	UINT16
46	TIMING IN OPENING*	IN S	2	UINT16
47	TYPE OF HALT IN CLOSING	0:TORQUE 1:POSITION	1	UINT8
48	TYPE OF HALT IN OPENING	0:TORQUE 1:POSITION	1	UINT8
49	DIRECTION OF CLOSING	0:CW 1:CCW	1	UINT8

50	TYPE AND SENSE OF INPUT ANALOG SIGNAL	0:4-20MA 1:20-4MA 2:4-12MA 3:12-4MA 4:12-20MA 5:20-12MA 6:0-20MA/0-10V 7:20-0MA/10-0V	1	UINT8
51	TYPE AND SENS OF ANALOG OUTPUT SIGNAL		1	UINT8
52	NUMBER OF USER CONFIGURATION WRITING	(READ ONLY)	4	UINT32
53	DATE OF LAST MODIFICATION OF USER CONFIG.	(READ ONLY)	4	4XUINT8
54	LED COLOR	0=RED-CLOSE; 1=RED OPEN	1	UINT8
55	CONFIG AUTO OR ONOFF	(READ ONLY)	1	UINT8
56	SECURITY POSITION ANALOG LOSS	0:OPEN 1:CLOSE 2:STAYPUT	1	UINT8
57	SECURITY POSITION PROFIBUS LOSS	0:OPEN 1:CLOSE 2:STAYPUT	1	UINT8
58	START OF TIMING ZONE IN CLOSING*	0-100	1	UINT8
59	END OF TIMING ZONE IN CLOSING*	0-100	1	UINT8
60	START OF TIMING ZONE IN OPENING*	0-100	1	UINT8
61	END OF TIMING ZONE IN OPENING*	0-100	1	UINT8
62	XY CONFIGURATION FOR RELAY 1	X=TAB[0], Y=TAB[1]	2	2XUINT8

63	XY CONFIGURATION FOR RELAY 2	X=TAB[0], Y=TAB[1]	2	2XUINT8
64	XY CONFIGURATION FOR RELAY 3	X=TAB[0], Y=TAB[1]	2	2XUINT8
65	XY CONFIGURATION FOR RELAY 4	X=TAB[0], Y=TAB[1]	2	2XUINT8
66	XY CONFIGURATION FOR RELAY 5	X=TAB[0], Y=TAB[1]	2	2XUINT8
67	XY CONFIGURATION FOR RELAY 6	X=TAB[0], Y=TAB[1]	2	2XUINT8
68	XY CONFIGURATION FOR RELAY 7	X=TAB[0], Y=TAB[1]	2	2XUINT8
69	BUS COMMAND OR HARDWIRED COMMANDS		1	UINT8
70	CONFIG LOCAL COMMAND TYPE		1	UINT8
71	DATE AND TIME*	POSIX FORMAT	4	SINT32
72	PROFIBUS ADDRESS	(READ ONLY)	1	UINT8
73	TYPE OF HALT ON TORQUE		1	UINT8
74	CONFIGURATION ESD FIELDBUS COMMAND		1	UINT8
75	CONFIGURATION ESD FIELDBUS COMMAND*		1	UINT8
76	CONFIGURATION ESD HW COMMAND*		1	UINT8

\* Only available with Intelli+ control

**Slot =2 are read only for status  
Indexes (0 to 18) are listed below.**

Index	Data	Description	Byte	Type
0	INDICATION ADDRESS 0	REPLICATE THE DATA OF THE CYCLIC REGISTER	1	UINT8
1	INDICATION ADDRESS 1	REPLICATE THE DATA OF THE CYCLIC REGISTER	1	UINT8
2	INDICATION ADDRESS 2	REPLICATE THE DATA OF THE CYCLIC REGISTER	1	UINT8
3	INDICATION ADDRESS 3	REPLICATE THE DATA OF THE CYCLIC REGISTER	1	UINT8
4	INDICATION ADDRESS 4-5	REPLICATE THE DATA OF THE CYCLIC REGISTER	2	UINT16
5	INDICATION ADDRESS 6	REPLICATE THE DATA OF THE CYCLIC REGISTER	1	UINT8
6	INDICATION ADDRESS 7	REPLICATE THE DATA OF THE CYCLIC REGISTER	1	UINT8
7	INDICATION ADDRESS 8	REPLICATE THE DATA OF THE CYCLIC REGISTER	1	UINT8
8	INDICATION ADDRESS 9-10	REPLICATE THE DATA OF THE CYCLIC REGISTER	2	UINT16
9	INDICATION ADDRESS 11	REPLICATE THE DATA OF THE CYCLIC REGISTER	1	UINT8
10	INDICATION ADDRESS 12-13	REPLICATE THE DATA OF THE CYCLIC REGISTER	2	UINT16

Index	Data	Description	Byte	Type
11	INDICATION ADDRESS 14-17	REPLICATE THE DATA OF THE CYCLIC REGISTER	4	UINT32
12	INDICATION ADDRESS 18-21	REPLICATE THE DATA OF THE CYCLIC REGISTER	4	UINT32
13	INDICATION ADDRESS 22-25	REPLICATE THE DATA OF THE CYCLIC REGISTER	4	UINT32
14	INDICATION ADDRESS 26-29	REPLICATE THE DATA OF THE CYCLIC REGISTER	4	UINT32
15	OPENING TORQUE CURVE	LAST OPENING TORQUE CURVE	201	UINT8[ ]
16	CLOSING TORQUE CURVE	LAST OPENING TORQUE CURVE	201	UINT8[ ]
17	TEMPERATURE LOG	TEMPERATURE LOG H-1 TO H-240	240	UINT8[ ]
18	TEMPERATURE LOG ACTIVITY LOG	NUMBER OF START PR HOUR LOG H-1 TO H-120	240	UINT16[ ]



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