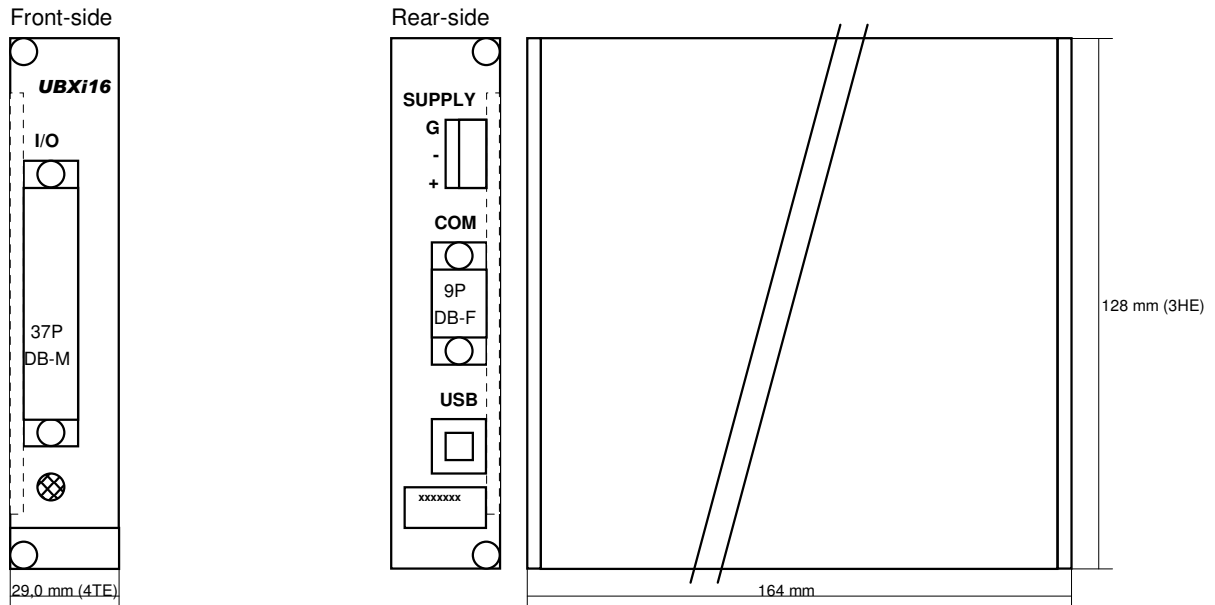


2008-10-17

## UBXi16 (I/O-expansion)



### FEATURES UBXi16

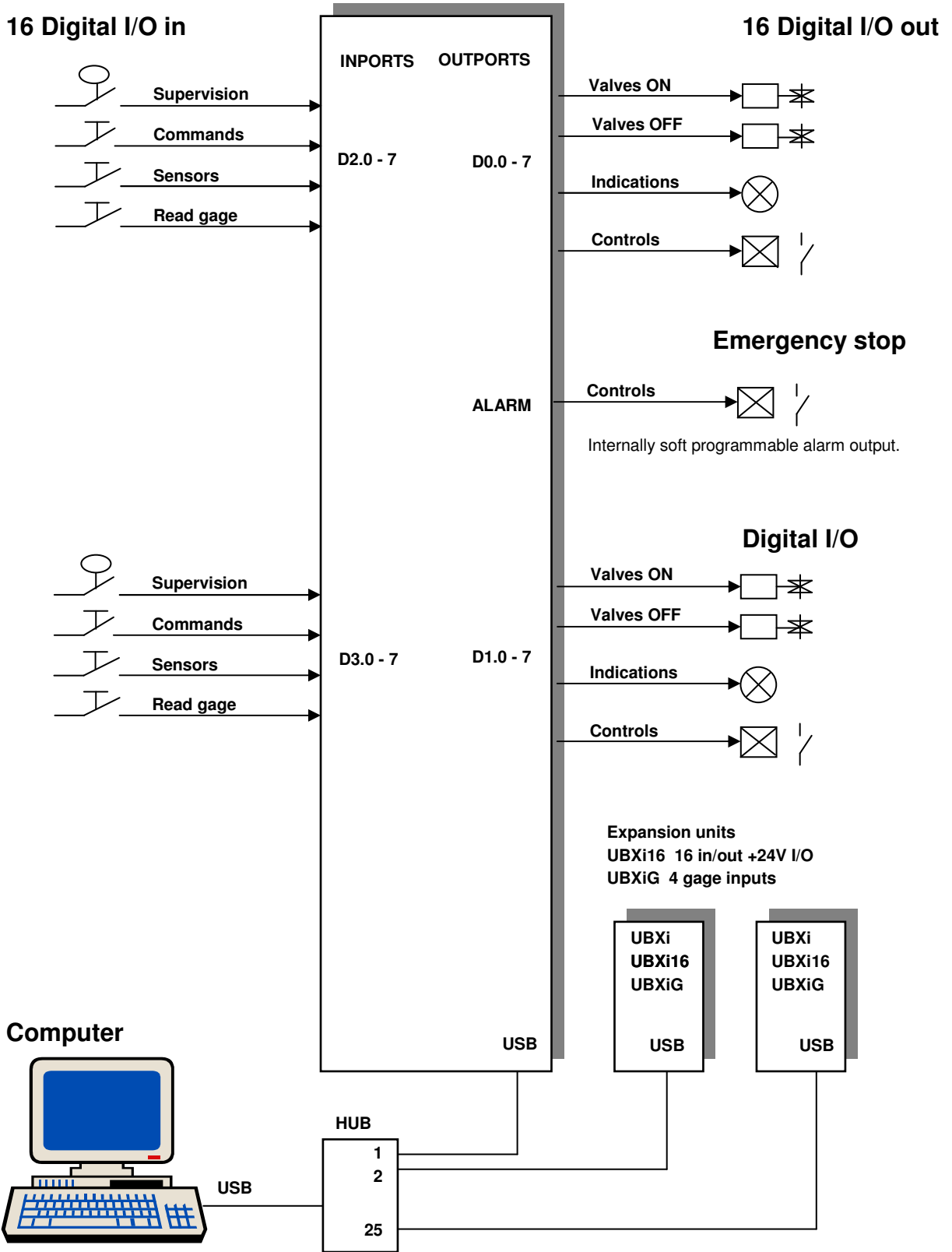
- USB adapted system according to specification 1.1, 12Mbits/sec transfer.
- Specially adapted for using with unit UBXi as expansion general PLC control.
- 16 digital outputs and inputs (+24V), including programmable functions for:
  - ◆ Asynchronies trigg inputs of pushbuttons, and other external signals.
  - ◆ Asynchronies larmoutput.
- Able to connect up to 16 units to one personal computer using the USB-buss, for a configuration of total of 256 input and outputs, or one single unit using RS232C-communication.

### CONFORMANCE TO EC DIRECTIVES

This unit conforms to the following EC Directives:

- EMC Directive (89/336/EEC)
  - EN55011: 1992, Group 1, Class B EMC emission
  - EN50082-2: 1995, Industrial environment EMC immunity

**UBXi16 (expansionsystem)**



**SPECIFICATIONS****Main data**

Update frequency	100 Hz (10 ms) for all in/outputs and final readout values.
Operating temperature	0 to 40° degrees C (20%RH to 80%RH, without condensation)

**Power supply**

Power supply	DC +12 to +30V, normal industry standard.
Connector pins	Connector: LMI 245 203 01, 3-pole terminal block/plug.
1:	PLUS (+24V)
2:	MINUS (0V)
3:	Protected ground.

**USB**

Number of USB input	1
Standard	1.1 USB specification, max 12 Mbits/sec.
Connector pins	Connector: USB-peripheral (type B).

**RS-232C**

Number of RS232C	1
Protocol	Start/stop.
Fixed setup	19200 kBaud, even parity, 8 databits, 1 stopbit, Xon/Xoff method.
Connector pins	Connector: 9p DSUB female (screw locking).
1:	NC <i>PC-side/signals</i>
2: out	TXD ----- RXD inp
3: inp	RXD ----- TXD out
9:	NC
Applicable cables	DB9M - DB9F pin to pin (modem).

**Digital I/O port output**

Number of ports output	2 (8 bits)
Sourcedata	+24V (pos logic) optoisolated, max 500 mA short-circuit proof.
Portsignals	D0:0-7, D1:0-7 (port 0 and 1).
Connector pins	See common I/O-connector.
Port external supply	DC +15 to +35V, 3 A (max 1A/channel PTC), normal industry standard.

**Digital I/O port input**

Number of ports input	2 (8 bits)
Input	+24V (pos logic) optoisolated, DC +15 to +35V, max 30 mA.
- Triginputs (ports)	2 (50 mS responds time, 100 mS repeat time, flanktrigg).
- Larminputs (ports)	1 (10 mS responds time).
Portsignals	D2:0-7, D3:0-7 (port 2 and 3) including programmable triginputs.
Connector pins	See common I/O-connector.

**Operating commands (USB and RS232C)***General formats (ASCII)*

mmmsson,<d1>,<d2>CR	Command string incl. data/block, else mmmssnCR, if no data.
OK,<resp>CRLF	Respond string incl. n datablock, else OKCRLF, if no data.
OK,<d1 d2 ..>, <d1 d2 ..>, .. CRLF	Responds string incl. multiplier datablocks separated by commas and datatypes separated by   (specially for read out buffer). <b>1)</b>

**1)** The | char and TAB is also used as separate and end char for asynchronies input.

NG,<error>CRLF	Error responds for a command
<error>	Error number 01, 02, ... 99, fixed two chars (see errorlist).
mmm	Command (1:st 3 chars), for ex. INP (input command),
ss	Operand (next 2 chars), for ex. LG (linear gage),
o	Suboperand (next 1 char), for ex. V (actual gage value)
n (for index commands)	Index (last char), for ex. 1 (linear gage no: 1). <b>Note!</b> Not for all commands.
<data>	Write/read data for command, prefixed by comma (,).
See command	<b>Note1!</b> For decimal values, <b>only</b> decimalpoint (.) is used.

**System initialize**

CLRSYS	The commands are active for all subsystems. Clears and initialize all gage, presettings, peakvalues, I/O and buffers. <b>Note!</b> The clear command, do <b>NOT</b> reset the error mask.
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CLRERR	Cancels the current errors.
INPERR	Read pending error bitmask, Resp.= b1,b2, ...b14 (hexformat).
INPVER	Read programversion, Resp.= Ver:4502-0004C Dec 14 2001 (example).
ASC(3) without CRLF	Clears a command in progress, and activate the unit for new command.

**Updating commands** To be used for continuously inputs, program loops.

INPUPD	Resp. = ABCDh,12345,23456,34567,45678,0,0 (7 responds data). Reads err bitmask, port 0-3 and dummy-status (=0) for stepmotor 1,2
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**Digital I/O ports** Data and responds = 0-255 (integer).

SETDIT2-3,<mask>	Setup trigg-mask (0-255) input port P2,3 ( <b>bitchange</b> ). (0= off, mask= on) If trigg, RQ,<portno> <portv>TAB is asynchr. send back. <b>Note!</b> After setup (if OK), Resp= ,RQ,<portno> <portv> <old> <mask>TAB is ALWAYS included (ahead) in acknowledge OKCRLF, if triggmask is valid.
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INPDIT	Read trigg-mask settings. Answer string is "OK,Port2-mask,Port3-maskCRLF"
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SETDIL,<m1>,<m2>, ..	Setup larm-mask(s) (0-255) for input port P3 (only), Max m = 32. <i>Function:</i> Each mask m is logical AND to portstatus, and the final result is set as a logical OR for each mask. If any (or all) of the mask's m(i) differ from m = m AND port, the hardware output (pin 18) LARM is reset. <b>Note 1!</b> When larm, the error bitmask bit 15 is set, the LARM output is set low, and the larm mask is stored for later readout. <b>Note 2!</b> CLRERR resets the LARM output high (if not any larm). <b>Note 3!</b> SETDIL,0 clears <b>all</b> larm masks.
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INPDIL	Read larm-mask settings. Answer string is "OK,m1,m2,...m32CRLF"
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INPLRM	Read active larm mask. If <b>no</b> larm, 0 is respond.
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SETDIO0-1,<data>	Set digital value (0-255) for port 0.
INPDIO0-3	Read digital (set) value (0-255) for port 0 to 3.

**Error list**

No	Internal name	Pending	Description
00			No error present (if read).
10	ubxIllegalCommand		Illegal command or format.
11	ubxIllegalSelection		Illegal selection number.
12	ubxIllegalParameter		Illegal parameter.
14	ubxIllegalData		Illegal parameter value.
15	ubxParityError		Parity error received.
99	ubxInternalHardwareError		Internal hardware error.

**Error mask**

Bit.no	Internal name	Pending	Description
14	ubxPortOutLarm	Yes	Out portlarm (pin 18) is active.

**Note!** The error mask is cleared (reinitialized) by the CLRERR command.

**Common I/O**

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*Connector pins*                      Connector: 37p DSUB female (screw locking).

- 1, 20:    +24V external supply.
  - 2:        D0.0 (Output port P0).
  - 3:        D0.1
  - 4:        D0.2.
  - 5:        D0.3
  - 6:        D0.4
  - 7:        D0.5
  - 8:        D0.6
  - 9:        D0.7
  - 10:       D1.0 (Output port P1)
  - 11:       D1.1
  - 12:       D1.2
  - 13:       D1.3
  - 14:       D1.4
  - 15:       D1.5
  - 16:       D1.6
  - 17:       D1.7
  - 18:       OUT LARM    = \*SEND RL (larm request, inport P3)
  - 21:       D2.0 (Input port P2).
  - 22:       D2.1
  - 23:       D2.2.
  - 24:       D2.3
  - 25:       D2.4
  - 26:       D2.5
  - 27:       D2.6
  - 28:       D2.7
  - 29:       D3.0 (Input port P3)
  - 30:       D3.1
  - 31:       D3.2
  - 32:       D3.3
  - 33:       D3.4
  - 34:       D3.5
  - 35:       D3.6
  - 36:       D3.7
  - 19,37:   0V external supply.
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