



# Connect

## PUMP CONTROL AND SCADA UNIT

6.05

### General

Connect® is an advanced control, regulation, and monitoring unit for technical installations, such as waterworks, pumping stations and waste water treatment plants.

Connect® has many connectivity options and can act as a control unit or as a slave (RTU) in a larger SCADA system.

It is equipped with central CPU and data logger and can be configured as needed with digital and analog in- and outputs.

The unit can work in networks with other MJK Connect® series units, with industry PLCs and meters for flow, pressure, pH, dry matter, turbidity, etc.

Connect® is the result of intensive development work based on many years of experience in supplying equipment to SCADA plants worldwide. Connect® is characterized by high quality, simple and logical operation in clear language, broad functionality and the possibility of upgrading.



### Functions

- Intelligent pump monitoring
- Energy optimized pump control
- Built-in pump capacity calculation
- State machine for individual programming
- Large selection of communication modules
- Overflow calculation with time, number and amount
- Inter lock, either with pump stops or off-set of start/stop levels
- Logic functions (control word) for individual control, combination of alarms and more.

NOW WITH 3G OR  
4G MODEM...

### Applications

- Pump stations
- Registration of emergency overflow
- Retention basins
- Wastewater treatment plants
- Control of aerators in treatment plans
- Energy optimization
- Raw water borings
- Ground water pump stations
- Pressure booster stations
- Filter rinsing.

### DATASHEET

EN 6.05 CONNECT DATASHEET 1901

**mjk**  
a xylem brand

## Connect

### Specifications, base unit

| Connect® base           |                                                                                                                                                                                                                                                    |                                                                             |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Power supply            | 115/230 V AC 50 / 60 Hz, ±10 % or 12 V DC battery                                                                                                                                                                                                  |                                                                             |
| Power consumption       | 25 VA                                                                                                                                                                                                                                              |                                                                             |
| Battery backup          | Built-in battery charger includes supervising an external lead storage battery, 2-30 Ah                                                                                                                                                            |                                                                             |
| Clock                   | Real-time clock incl. built-in lithium battery (expected life circle 10 years@20°C)                                                                                                                                                                |                                                                             |
| Memory                  | 32 Mb flash memory, 10 X 36.000 logs depending on chosen protocol                                                                                                                                                                                  |                                                                             |
| Build-in communication  | 3G modem bands (MHz):<br>B5 (850)/B8(900)/B4 (1700)/B2 (1900)/B1 (2100)                                                                                                                                                                            | or<br>4G modem bands (MHz):<br>B20 (800)/B8(900)/B3(1800)/B1(2100)/B7(2600) |
| Interface               | 1 pcs. RS-485 galvanic separated for 1-4 pcs. Connect®<br>1 pcs. RS-485 galvanic separated for 1-4 pcs. MagFlux®/SuSix® etc.<br>1 pcs. communications module for monitoring systems and other Connect® units<br>1 pcs. USB 1,1 type mini B, female |                                                                             |
| Communications protocol | Internal: ModBus® RTU-mode                                                                                                                                                                                                                         |                                                                             |
|                         | External: ModBus® RTU-mode/COMLI®/AquaCom                                                                                                                                                                                                          |                                                                             |
| Enclosure               | IP 67                                                                                                                                                                                                                                              |                                                                             |
| Cabinet material        | Glass reinforced PC (polycarbonate)                                                                                                                                                                                                                |                                                                             |
| Temperatur range        | - 20 ... + 60°C                                                                                                                                                                                                                                    |                                                                             |
| Weight                  | 1,5 kg                                                                                                                                                                                                                                             |                                                                             |
| CE approvals            | EN 61000-6-4:2001, EN 61000-6-2:2001                                                                                                                                                                                                               |                                                                             |

### I/O module 16-8-6-1

| Connect® I/O module 16-8-6-1* |                                                                                             |
|-------------------------------|---------------------------------------------------------------------------------------------|
| Digital input                 | 16 pcs. DI, 10-28 V DC                                                                      |
| Digital output                | 8 pcs. DO, electronic relays (max. 48 V AC / DC / 120 mA)                                   |
| Analog input                  | 6 pcs. galvanic separated, 16 bit resolution, 4-20 mA, accuracy better than ± 0,25 % of FS* |
| Analog output                 | 1 pcs. 4-20 mA, galvanic separated                                                          |
| Power supply for I/O          | 3 pcs. 15 V DC, 200 mA                                                                      |

\*At operating conditions of 0-50°C

### Communications modules

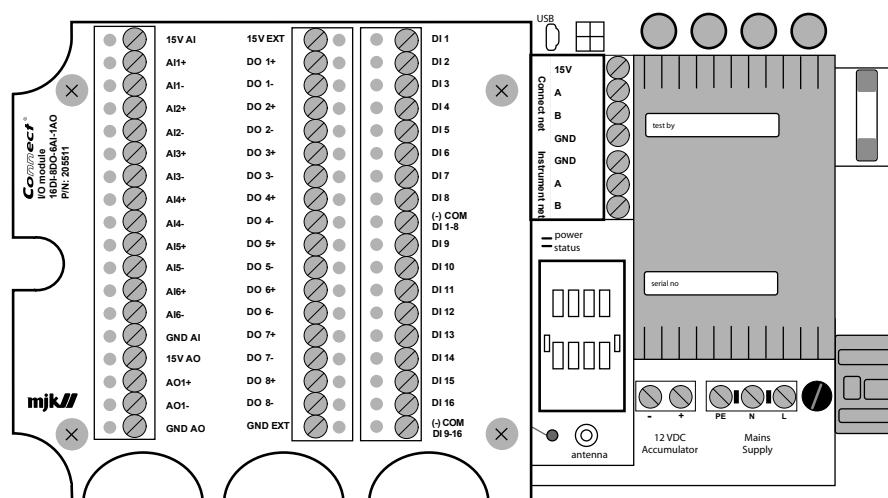
| Connect® communications modules |                                                                |
|---------------------------------|----------------------------------------------------------------|
| 3G                              | 3G modem                                                       |
| 4G                              | 4G modem                                                       |
| RS-232 opto                     | Galvanic isolated RS-232 for data, radio or external equipment |
| RS-485 opto                     | Galvanic isolated RS-485 with repeater for private lines       |

### Specifications, display unit

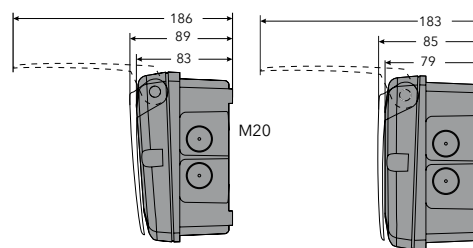
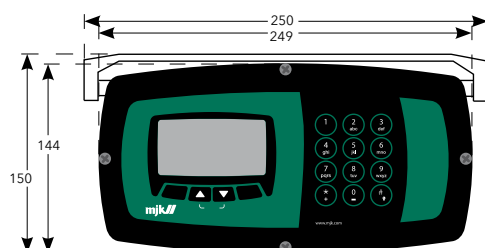
| Connect® display  |                                                                                     |
|-------------------|-------------------------------------------------------------------------------------|
| Display           | Background lit LCD display (64x128 pixels) with softkeys                            |
| Keyboard          | 4 softkeys and a keyboard for entering info                                         |
| Indication        | Indication of measuring, operations data, functions, configuration and graphs       |
| Power supply      | From Connect® base                                                                  |
| Clock             | Real-time clock incl. built-in lithium battery (expected life circle 10 years@20°C) |
| Communication     | RS-485 ModBus® RTU-mode for communication between 1-4 Connect® units                |
| Interface 1       | RS-485                                                                              |
| Interface 2       | USB 1,1 type mini B, female                                                         |
| Interface 3       | Communications module                                                               |
| Memory            | 32 Mb flash memory, 30.000 logs with date, time and measured value (graphs)         |
| Enclosure         | IP 67                                                                               |
| Cabinet material  | Glass reinforced (PC) polycarbonate                                                 |
| Protection lid    | Transparent polycarbonate                                                           |
| Temperature range | - 20 ... +60 °C                                                                     |
| Weight            | 0,5 kg                                                                              |

# Connect

## Electrical connections



## Dimensions



Slante mounted front plate

Straight mounted front plate

## Accessories



**Backup battery** - depending on battery capacity, an additional battery ensures operation of Connect® for several hours in case of power failure.

## Communication

Connect® offers various connectivity options and can easily act as a control unit as well as RTU in an SCADA system.

Connect® consists of a CPU device with 6 analog inputs, 1 analog output, 16 digital inputs and 8 digital outputs.

Connect® communicates via, e.g. Comli or Modbus protocols to SCADA systems for data output - or Instrument Net for connection of meters for flow, level, etc.

As a standard, Connect® is delivered with 3G or 4G communications modem for transmission on the mobile data network.

Connect® is connected to an external Wi-Fi module for operation from a smartphone with MJK Connect App® installed. This allows you to monitor or change start/stop levels, force start and stop, block pumps, and read alarm lists and status.

## Operating



Android



Connect® is operated from different devices:

**Smartphone** - connected via built-in Wi-Fi. iPhone/Android apps are free and downloadable from App Store/Android Market. Scan the QR code and download the MJK Connect app.



**Connect Link™** - for full setup, configuration and communication between Connect® and a PC via a USB cable, 3G or 4G modem or Wi-Fi. See data sheet 6.28.



**Own display** - intuitive multilingual interface. Easy access to start, stop, set points, operations data and measuring values as well as alarms.



**HMI Display** - provides graphical access to pump controls, data reading and real-time operation overview via touchscreen. See data sheet 6.31.



iPhone

# Connect

## Order numbers

| Connect®                        |                                                                          |
|---------------------------------|--------------------------------------------------------------------------|
| 205348                          | Connect® base with display 3G modem I/O module 16-8-6-1                  |
| 205349                          | Connect® base with display 4G modem I/O module 16-8-6-1                  |
| 205354                          | Connect® base, 3G, HMI display I/O module 16-8-6-1                       |
| 205355                          | Connect® base, 4G, HMI display I/O module 16-8-6-1                       |
| Connect® communications modules |                                                                          |
| 205552                          | 3G modem module for Connect®                                             |
| 205553                          | 4G modem module for Connect®                                             |
| 205544                          | RS 232 galvanic separated module                                         |
| 205545                          | RS 485 galvanic separated repeater module                                |
| 205590                          | Wi-Fi, external communications modules, RS 485                           |
| Connect® accessories            |                                                                          |
| 200243                          | Mounting plate for wide cabinet for mounting on universal fitting        |
| 204991                          | Replacement of Connect® modem from 2G modem to 3G modem                  |
| 204992                          | Replacement of Connect® modem from 2G modem to 4G modem                  |
| 205301                          | Connect® base without display I/O module 16-8-6-1                        |
| 205321                          | Connect® base with display I/O module 16-8-6-1                           |
| 205304                          | Connect® base without display 3G modem I/O module 16-8-6-1               |
| 205305                          | Connect® base without display 4G modem I/O module 16-8-6-1               |
| 205410                          | HMI display                                                              |
| 205501                          | Connect® base without I/O module                                         |
| 205505                          | Connect® display unit                                                    |
| 205506                          | Cable set for Connect® for HMI display RS 485 cable, 2,7m.               |
| 205508                          | Mounting kit for display on panel front for Connect®                     |
| 205511                          | Connect® I/O module 16-8-6-1 with socket-outlet and plug                 |
| 207936                          | Panel fitting for wide cabinet                                           |
| 540201                          | 4-wire extender cable RS485 - field display 1,5m.                        |
| 550240                          | Accumulator 12V/2Ah                                                      |
| 550241                          | Accumulator 12V/7,0Ah                                                    |
| 550242                          | Accumulator 12V/12Ah                                                     |
| 550244                          | Accumulator 12V/1,2Ah                                                    |
| 691075                          | Communications cable 2x2x0,5mm <sup>2</sup> twisted pair + screen per m. |
| 691095                          | PC cable mini USB/USB                                                    |
| 840150                          | Connect Link configuration software                                      |
| 901071                          | Connect® Signal Simulator                                                |