

## Instruction manual

### General

Thank you for choosing Pump Controller 701. Pump Controller 701 is a new compact unit for level control of 1 pump and 1 level alarm, or 2 pumps in alternation.

Pump Controller 701 is supplied in a housing for DIN rail mounting and is easy to install and operate from the front panel.



### Hydrostatic measuring system

Pump Controller 701 is supplied with Pressure Transmitter 7060 or 7070 covering measuring ranges from 0 - 3 m to 0 - 30 m. Pressure Transmitter 7060 is manufactured in polypropylene and developed for measuring in wastewater and liquids with suspended solids. Pressure Transmitter 7070 is manufactured in stainless steel, with small external diameter and is applied in clean liquids such as water drillings. The pressure transmitters are manufactured as 2-wire 4 - 20 mA transmitters, which generates an output signal proportional with the level.

Measurement is based on the following principle:

The pressure transmitter is immersed to the bottom of the liquid and measures the hydrostatic pressure. The pressure transmitter submits an electrical signal, which is proportional with the pressure on the diaphragm of the pressure transmitter. The pressure transmitter has an equalizing hose in the cable, for air pressure compensation. The pressure transmitter is connected to Pump Controller 701 where the signal is applied for start and stop limits and alarm.

## Specifications

### Pump Controller 701

Dimension:	86 x 70 x 60 mm (h x w x d)
Supply:	230 VAC (Can also be supplied for other voltages.)
Power consumption:	10 VA (For 230 VAC supply)
Temperature range:	- 20 ... + 60 °C
Input:	4 - 20 mA from pressure transmitter
Measuring range:	Determined from pressure transmitter
Accuracy:	± 1 %
Output:	2 relays with potentialfree switch
Charge:	250 V, 4 A resistive, max. 100 VA inductive
Enclosure:	IP 22

## Pressure Transmitter 7060 or 7070

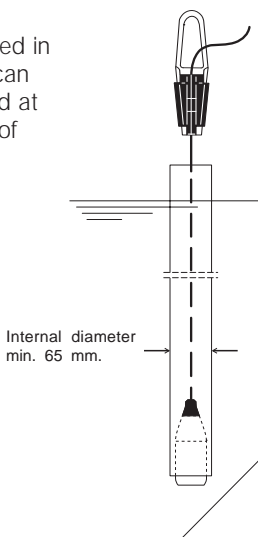
Measuring range:	0 - 3 m:	Pressure Transmitter 7060 / 7070 - 1413
	0 - 10 m:	Pressure Transmitter 7060 / 7070 - 1423
	0 - 30 m:	Pressure Transmitter 7060 / 7070 - 1433
Dimension:	Type 7060:	Ø 60 x 140 mm
	Type 7070:	Ø 22 x 150 mm
Output:	4 - 20 mA	
Supply:	12 - 30 VDC	
Accuracy:	±1 % (0 - 50 °C)	
Temperature:	- 10 ... + 60 °C	
Materials:	House 7060:	Polypropylene
	House 7070:	Steel AISI 316
	Membrane:	Steel AISI 316
Cable:	Dimension:	2 x 0,5 mm <sup>2</sup>
	Insulation:	PVC, outer layer of oil resistant PVC.
	Length:	12 m (35 m for 7060 / 7070-1433)
Enclosure:	IP 68, waterproof, max. 3 bar.	

## Installation and connection

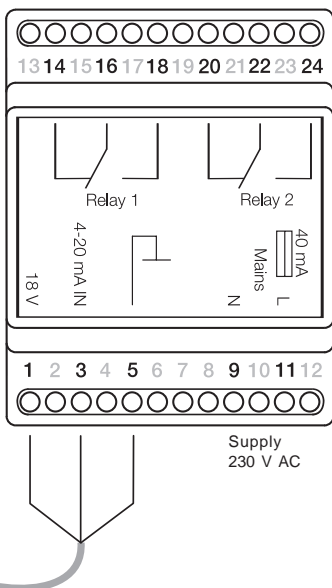
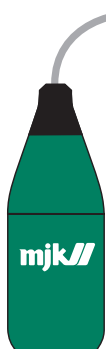
### Pressure transmitter

The pressure transmitter is immersed in the well. The pressure transmitter can be mounted in a tube, and fastened at the top end of the tube, by means of cable fittings.

If the pressure transmitter is mounted in a tube, it facilitates cleaning and inspection.



## Pump Controller



## Settings

Pump Controller 701 is operated from the front panel, where start- and stop levels, or alarm setpoint for each relay output is adjusted with 2 potentiometers. The pump controller is adjusted by connection of a voltmeter between the test bushes, marked "TEST" and "COMMON" and by adjusting the potentiometer to the desired level. Dependent of the "LEVEL" switch position, 0 - 3 / 0 - 30 m measuring range is proportional with 0 - 3 V on the voltmeter and measuring range

0 - 10 m is equal with 0 - 1 V.

The switch for alternation "ALTERNATION" is set on "ON", if the pump controller shall be set for alternation.

The voltmeter - (negative) cable is connected to the test bush "COMMON" and + (positive) is connected to the test bush "TEST", opposite the function which has to be adjusted.

The pump controller is in operation when connected to voltage, and calibration can always be made during operation.

## Start- and stop setpoint

Start- and stop setpoint for the connected pump, is adjusted on the two potentiometers. The circuit is implemented so the pump is running when level reach the adjusted start setpoint, and stops when level reach the adjusted stop setpoint.

## Empty/ fill functions

The pump controller automatically changes between empty and fill function. Dependent of start, set-point is adjusted to be higher than stop set-point (pumping out), or stop set-point is adjusted to be higher than start set-point (pumping in.)

*Please note that the difference between start and stop set-point, must be at least 2 % of the measuring range.*

## Alarm function

Pump Controller 701 can also be applied as level alarm if only one pump is connected. Alarm set-point is adjusted on the start- and stop potentiometer, opposite the chosen output.

*Please note that the difference between start and stop set-point, must be at least 2 % of the measuring range.*

## Various

### Maintenance

The pump controller requires no special maintenance, just as the pressure transmitter normally not requires cleaning.

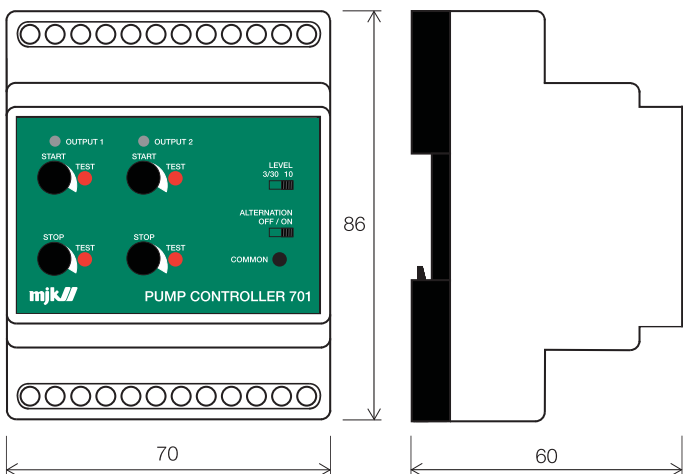
Cleaning of the diaphragm of the pressure transmitter, must be exercised with great care.

## Spare parts

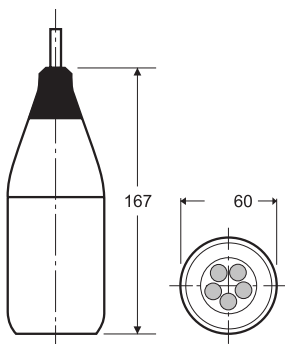
Item no:	Description
202930	7060-1413 Pressure transmitter 0 - 3 m
202935	7060-1423 Pressure transmitter 0 - 10 m
202940	7060-1433 Pressure transmitter 0 - 30 m
202950	7070-1413 Pressure transmitter 0 - 3 m
202955	7070-1423 Pressure transmitter 0 - 10 m
202960	7070-1433 Pressure transmitter 0 - 30 m
201950	Pump Controller 701 without transmitter
550029	Fuse 40 mA
560915	Cable fitting for Presure Transmitter 7060
560916	Cable fitting for Presure Transmitter 7070

## Dimensions

### Pump Controller 701



### Pressure Transmitter Type 7060



### Pressure Transmitter Type 7070

