ECONTROL CLASSIC

Control Panel for the automatic operation of 1 x Pump

ECONTROL CLASSIC 230
Voltage: 230V - 50 Hz
Power Rating: kW: 0.25 - 1.5 / A: 1.0 - 11.0 - IP 63 (Art. No. 6430000374)

ECONTROL CLASSIC 400 A
Voltage: 400V - 50 Hz
Power Rating: kW: 0.50 - 4.0 / A: 1.0 - 11.0 - IP 63 (Art. No. 6430000377)

ECONTROL CLASSIC 400 B
Voltage: 400V - 50 Hz
Power Rating: kW: 0.50 - 5.5 / A: 3.0 - 18.0 - IP 63 (Art. No. 6430000378)

Dimensions: 175 x 200 x 100 mm

- Automatic operation with connected pressure-switch or float-switch
- Manual operation possible
- Digital display for operating conditions and Error-messages
- Cable connections: 4 x M20 (mains supply, pump, pressure-switch/float-switch, alarm)
- Alarm Exit: potential-free contact for Central Building Control System (max. 230 V/4.0 A)
- Alternatively an External Alarm Light/Buzzer (230 V) can be connected
- ON/OFF Switch
- Overload Protection, Short Circuit Protection, Phase-malfunction protection
- dry-running protection via COS φ

(the control panel is equipped with an integrated learning programme, which ascertains all of the operational parameters – incl. the amount of pump-starts and the duration of the intervals after dry-running protection – these can also be adjusted manually)

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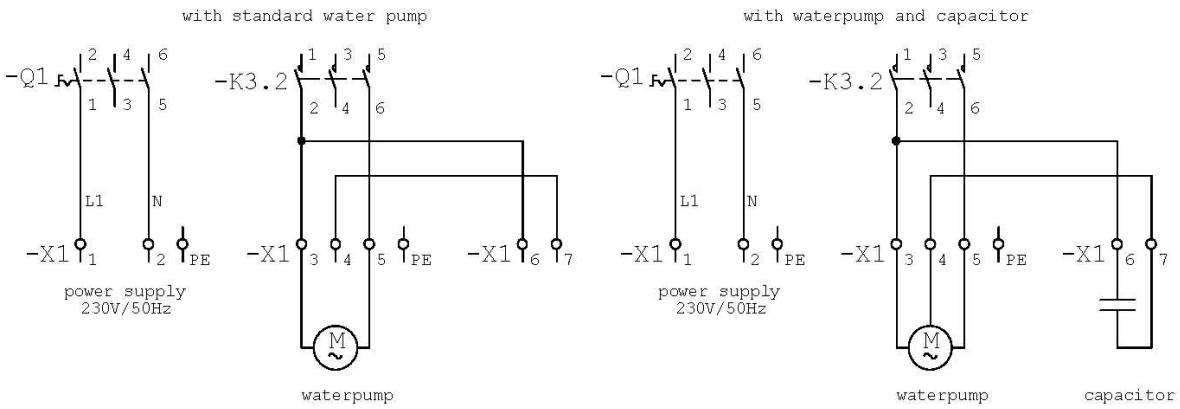
Operating Manual EBARA Control Classic 230/1

The pump control 230/1 of the classic line is an efficient and convenient control for operating 230V single pump systems with a power of 250W to 1,5kW. Read this operating manual carefully and attend the safety instructions before start working.
EBARA Pumps Europe refuses all liability for accident or damage, which arises as a result of failure to follow this operating manual.

1) Electrical Connection

Attention: Electrical connection must be carried out by an authorized electrician only. Observe the instructions of VDE and of the common network operator for installation by customer. Disconnect the controller from the mains before carrying out all assembly and connection work.
Attention: 230V supply voltage at marked area on printed board.
Ensure that type plate data of the controller (power consumption and voltage) is corresponding with the motor data.



Connect the pressure switch, respectively float level switch, to the appropriate marked terminal on printed board. The same applies by using the alarm output.

2) Commissioning

Switch on the control by using the main switch on the right side of the housing. The display shortly shows the program version and afterwards the operating state of the pump (0n=on, 0f=off). **Attention: The controller is ready to operate immediately. If float level switch is on, the pump will get started!** Now perform the desired settings (see chapter 3). Refill the pump, respectively the piping, completely with water by using the manual mode to prepare the operating state. Set the switch off conditions for dry run and for current surge detection. **For this purpose the system has to be bleed and has to be in operating state. Use the special learning program to detect switch off values. Activate this function by pushing the "Prog" button (display shows "Lr") while switching the controller on.** The pump will be started for circ. 10 s and the obtained data will be saved. Afterwards the controller works normally. If the operating conditions are strong unsteady it is rarely possible to carry out a fine tuning. Use therefor the menus "P1" and "P2" (see chapter 3b and 3c). **Attention: Without setting the switch off values the water pump has no guard against over-current. Check the dry run detection after setting the values.**

3) Programming

Push the "Prog" button to get into the menu. Use "Plus" and "Minus" to change between several menu items. Activate the menu item by pushing the "Prog" button. Modify the values by "Plus" and "Minus". The „Prog" button saves the modified values. The controller works normally during programming. Modified values will be assumed after saving.

Menu	Function	Range of Values	Factory Settings
P0	quit selection menu		
P1	threshold Cos Phi for dry run detection	0,4 - 0,95	0,70
P2	current breaker at overload	1-11A	--
P3	lag time until dry run is detected	1-99s	5
P4	time interval of repeats after dry run detection	1-99min	10
P5	number of repeats after dry run detection	0-10	4
P6	display of currently measured Cos Phi		
P7	display of current consumption (A)		
P8	manual operation		

3a) Quit Menu Selection (P0)

Activate this function to quit the programming level of the controller.

3b) Threshold Cos Phi for Dry Run Detection (P1)

Water pump will switch off, if operation value falls below the value set in "P1", for the time (set in "P3"). The display shows "tr" and the alarm contact will be closed. In case of manual input choose a value slightly under Cosinus Phi, which occurs during operation.

3c) Current Breaker at overload (P2)

If power consumption of the water pump is above the set value in "P2", water pump will switch off and the controller changes into fault mode. The higher the measured power, the faster happens the switch off. The display shows "AL" and the alarm contact will be closed. For trouble shooting see chapter 4. The set value should be 5% above nominal current of the water pump.
The display shows values bigger than 9,9A with a decimal point after the last digit. Here some examples:

- 5,6A is shown as 5.6
- 9,9A is shown as 9.9
- 10,3A is shown as 0.3.
- 15,3A is shown as 5.3.

3d) Lag Time until Dry Run is Detected (P3)

For this time the measured Cosinus Phi must fall below the value set in „P1" until switch off.

3e) Time Interval of Repeats after Dry Run Detection (P4)

Choose the time interval, when the controller should start operations again after dry run detection (if existing requirement are assumed). Set the number of these time intervals of repeats under „P5".

3f) Number of Repeats after Dry Run Detection (P5)

After the first dry run detection the controller tries to start operations for the time set in "P5". The breaks between two trials are set in „P4". If even the last trial results in a dry run of the pump, the controller changes into fault mode. The display shows "AL" and the alarm contact will be closed. For trouble shooting see chapter 4.

3g) Display of currently measured Cos Phi (P6)

This function helps to detect switch off values for dry run detection in manual programming. The current measured value for Cos Phi is always shown. Quit the menu by pushing the "Prog" button.

3h) Display of Current Consumption (P7)

This function helps to detect the switch off values for over-current switch off in manual programming. The currently measured power consumption of the pump is always shown. Quit the menu by pushing the "Prog" button.
Currents over 9.9A are shown with a decimal point of the unit position.

3i) Manual Operation (P8)

Using this function an electrician has the opportunity to switch on respectively switch off the pump irrespective of the position of the float level switch. This is recommended for bleeding after installation. Use the "Plus" button to switch on and the "Minus" button to switch off manual operation. Quit the menu by pushing the "Prog" button. **Attention: Safety functions like over-current and dry run are switched off during manual operation. Use the manual operation for installation and test purposes only.**

4) Trouble Shooting

The water pump is switched off after failure (display shows "AL"). The controller stays in this mode until resetting to normal operation. After remedying the default switch off and switch on again by using the main switch. If the default reason could not be identified, it is possible to show the failure by shortly pushing the "Prog" button. The display shows a trouble code. The meaning of the code is shown in the following table:

Dis-play	Meaning	Trouble Shooting
F1	pump is switched on but no motor current is measured (I<0,5A)	check wiring
F2	switch off because of over-current (value of P2)	check pump, and set-tings in menu "P2"
F3	dry run occurs, repeats follow to start the pump	check pump
F4	switch off after dry run (all repeats fail)	check pump
F5	measuring of motor current although relay is switched off (device is defective)	repairing necessary
F6	maximum current of the control (10A) is exceeded	check wiring and pump
F7	Cos Phi measuring defective	repairing necessary
F8	checksum error in memory	repairing necessary
F9	memory defective	repairing necessary
FA	failure occurs at current learning. Learned value	(I <1.0A or > 8,5A)
FB	failure occurs at Cos Phi learning	(Cos Phi < 0.4)
FC	automatic matching of current measuring defective	repairing necessary
FD	asymmetric current consumption of the pump	check pump

After readout and troubleshooting push the "Prog" button for circ. 2s.

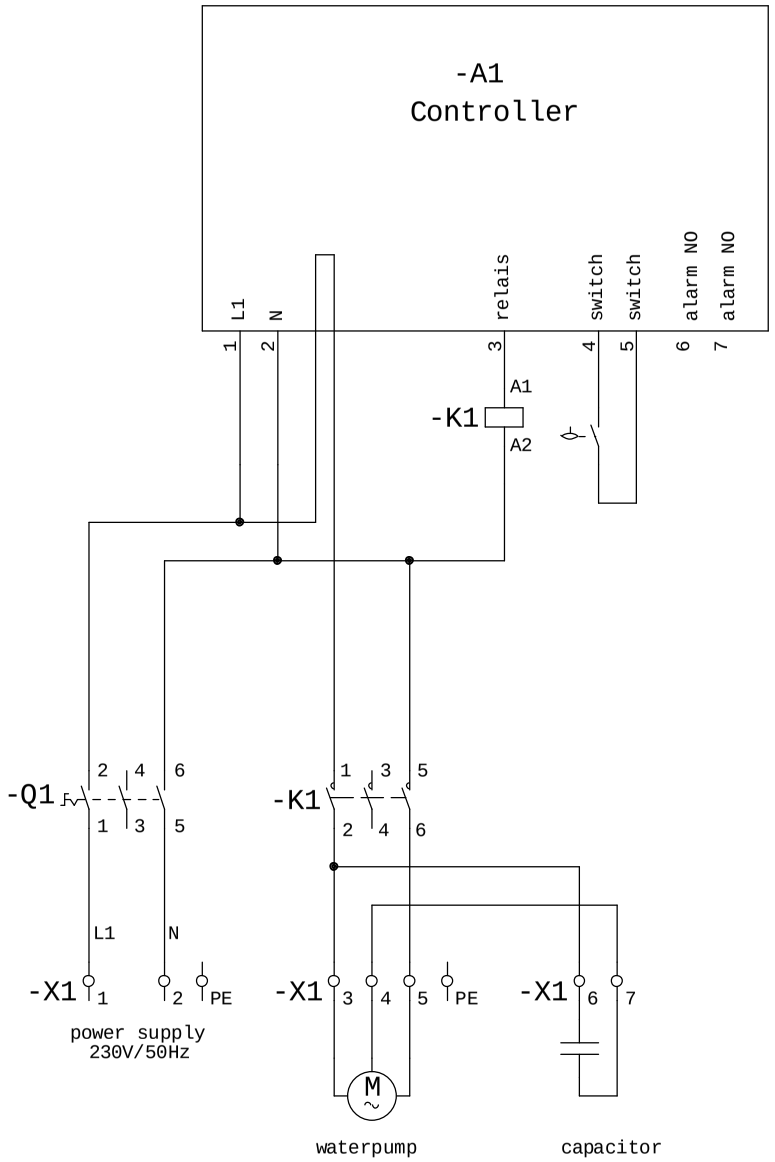
5) Reset to Factory Settings

Programmed settings can be set back to factory settings. Switch on the controller by push-ing the "Prog", "Plus" and "Minus" buttons at the same time. Display shows "rE". **Attention: Shut off values for the water pump must be entered respectively learned new after reset.**

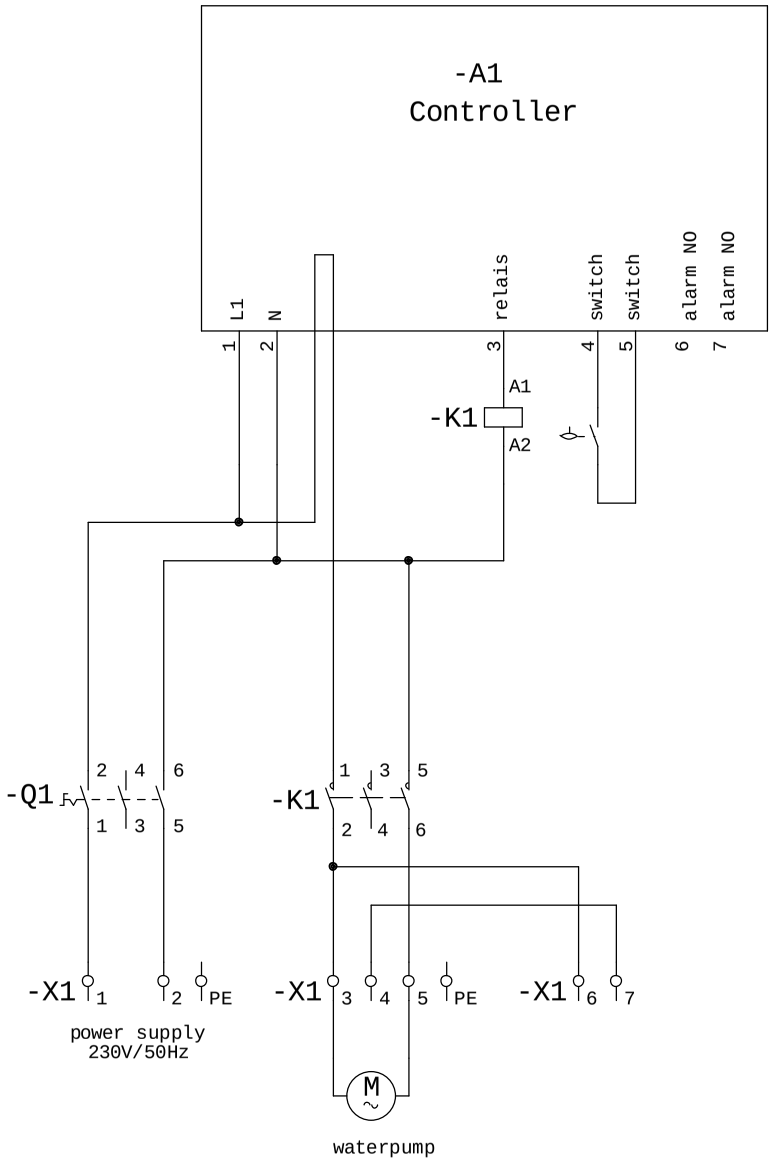
6) Technical Data

Power supply:	230V 50Hz +/- 10%
Power of pump motor:	250W – 1.5kW
Allowed current:	1A – 8,5A
Float level switch:	12VDC, 30mA
Alarm contact:	potential free (max. 230V, 4A)
Protection class:	IP63
Temperature range:	-10 to 40°C, without condensation
Housing dimensions:	175 x 250 x 100mm (l x w x h)

Pump 230V/50Hz with capacitor



Pump 230V/50Hz



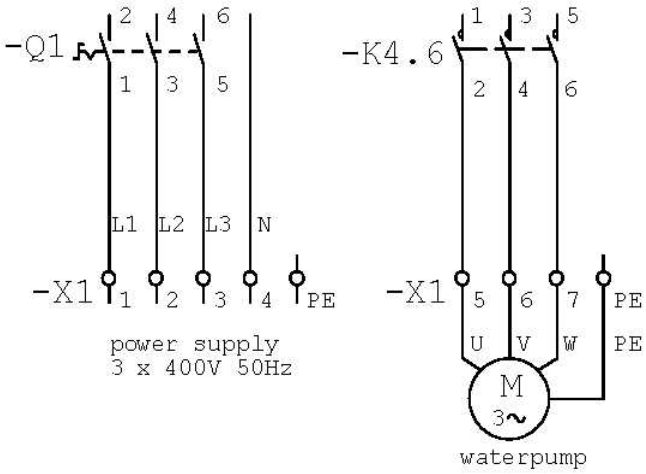
				Datum	17.11.2009	EBARA Pumps Europe S.p.A. 63128 Dietzenbach Philipp-Reis-Strasse 15		Classic	Typ 230/1 0,25-1,5kW = +
				Bearb.	Grote				
				Gepr.					Blatt 5
Zust.	Änderung	Datum	Name	Norm		Urspr.	Ers. f.	Ers. d.	von 8Bl.

Operating Manual EBARA Control Classic 400/A

The pump control 400/A of the classic line is an efficient and convenient control for operating 400V single pump systems with a power of 500W to 4.0kW. Read this operating manual carefully and attend the safety instructions before start working.
EBARA Pumps Europe refuses all liability for accident or damage, which arises as a result of failure to follow this operating manual.

1) Electrical Connection

Attention: Electrical connection must be carried out by an authorized electrician only. Observe the instructions of VDE and of the common network operator for installation by customer. Disconnect the controller from the mains before carrying out all assembly and connection work.
Attention: 230V supply voltage at marked area on printed board.
Ensure that type plate data of the controller (power consumption and voltage) is corresponding with the motor data.



Connect the pressure switch, respectively float level switch, to the appropriate marked terminal on printed board. The same applies by using the alarm output.

2) Commissioning

Switch on the control by using the main switch on the right side of the housing. The display shortly shows the program version and afterwards the operating state of the pump (0n=on, 0f=off). **Attention: The controller is ready to operate immediately. If float level switch is on, the pump will get started!** Now perform the desired settings (see chapter 3). Refill the pump, respectively the piping, completely with water by using the manual mode to prepare the operating state. Set the switch off conditions for dry run and for current surge detection. **For this purpose the system has to be bleed and has to be in operating state. Use the special learning program to detect switch off values. Activate this function by pushing the "Prog" button (display shows "Lr") while switching the controller on.** The pump will be started for circ. 10 s and the obtained data will be saved. Afterwards the controller works normally. If the operating conditions are strong unsteady it is rarely possible to carry out a fine tuning. Use therefor the menus "P1" and "P2" (see chapter 3b and 3c). **Attention: Without setting the switch off values the water pump has no guard against over-current. Check the dry run detection after setting the values.**

3) Programming

Push the "Prog" button to get into the menu. Use "Plus" and "Minus" to change between several menu items. Activate the menu item by pushing the "Prog" button. Modify the values by "Plus" and "Minus". The „Prog" button saves the modified values. The controller works normally during programming. Modified values will be assumed after saving.

Menu	Function	Range of Values	Factory Settings
P0	quit selection menu		
P1	threshold Cos Phi for dry run detection	0,4 - 0,95	0,70
P2	current breaker at overload	1-11A	--
P3	lag time until dry run is detected	1-99s	5
P4	time interval of repeats after dry run detection	1-99min	10
P5	number of repeats after dry run detection	0-10	4
P6	overtravel time	0-99s	0s
P7	display of currently measured Cos Phi		
P8	display of current consumption (A)		
P9	manual operation		

3a) Quit Menu Selection (P0)

Activate this function to quit the programming level of the controller.

3b) Threshold Cos Phi for Dry Run Detection (P1)

Water pump will switch off, if operation value falls below the value set in "P1", for the time (set in "P3"). The display shows "tr" and the alarm contact will be closed. In case of manual input choose a value slightly under Cosinus Phi, which occurs during operation.

3c) Current Breaker at overload (P2)

If power consumption of the water pump is above the set value in "P2", water pump will switch off and the controller changes into fault mode. The higher the measured power, the faster happens the switch off. The display shows "AL" and the alarm contact will be closed. For trouble shooting see chapter 4. The set value should be 5% above nominal current of the water pump.

3d) Lag Time until Dry Run is Detected (P3)

For this time the measured Cosinus Phi must fall below the value set in „P1" until switch off.

3e) Time Interval of Repeats after Dry Run Detection (P4)

Choose the time interval, when the controller should start operations again after dry run detection (if existing requirement are assumed). Set the number of these time intervals of repeats under „P5".

3f) Number of Repeats after Dry Run Detection (P5)

After the first dry run detection the controller tries to start operations for the time set in "P5". The breaks between two trials are set in „P4". If even the last trial results in a dry run of the pump, the controller changes into fault mode. The display shows "AL" and the alarm contact will be closed. For trouble shooting see chapter 4.

3g) Overtravel Time (P6)

After switching off the pressure switch or the float level switch the water pump runs for the time set in "P6" (0-99s).

3h) Display of currently measured Cos Phi (P7)

This function helps to detect switch off values for dry run detection in manual programming. The current measured value for Cos Phi is always shown. Quit the menu by pushing the "Prog" button.

3i) Display of Current Consumption (P8)

This function helps to detect the switch off values for over-current switch off in manual programming. The currently measured power consumption of the pump is always shown. Quit the menu by pushing the "Prog" button.
Currents over 9.9A are shown with a decimal point of the unit position.

3j) Manual Operation (P9)

Using this function an electrician has the opportunity to switch on respectively switch off the pump irrespective of the position of the float level switch. This is recommended for bleeding after installation. Use the "Plus" button to switch on and the "Minus" button to switch off manual operation. Quit the menu by pushing the "Prog" button. **Attention: Safety functions like over-current and dry run are switched off during manual operation. Use the manual operation for installation and test purposes only.**

4) Trouble Shooting

The water pump is switched off after failure (display shows "AL"). The controller stays in this mode until resetting to normal operation. After remedying the default switch off and switch on again by using the main switch. If the default reason could not be identified, it is possible to show the failure by shortly pushing the "Prog" button. The display shows a trouble code. The meaning of the code is shown in the following table:

Dis-play	Meaning	Trouble Shooting
F1	pump is switched on but no motor current is measured (I<0,5A)	check wiring
F2	switch off because of over-current (value of P2)	check pump, and set-tings in menu "P2"
F3	dry run occurs, repeats follow to start the pump	check pump
F4	switch off after dry run (all repeats fail)	check pump
F5	measuring of motor current although relay is switched off (device is defective)	repairing necessary
F6	maximum current of the control (10A) is exceeded	check wiring and pump
F7	Cos Phi measuring defective	repairing necessary
F8	checksum error in memory	repairing necessary
F9	memory defective	repairing necessary
FA	failure occurs at current learning. Learned value	(I <1.0A or > 8.5A)
FB	failure occurs at Cos Phi learning	(Cos Phi < 0.4)
FC	automatic matching of current measuring defective	repairing necessary
FD	asymmetric current consumption of the pump	check pump

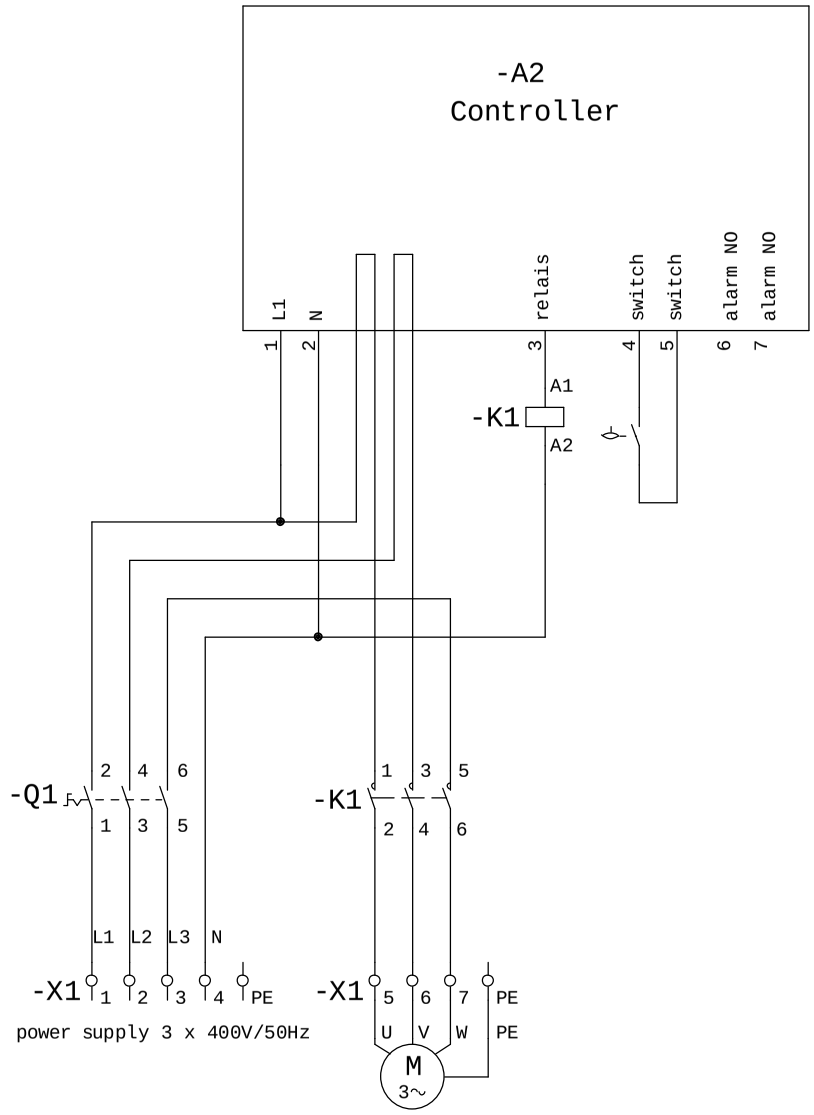
After readout and troubleshooting push the "Prog" button for circ. 2s.

5) Reset to Factory Settings

Programmed settings can be set back to factory settings. Switch on the controller by push-ing the "Prog", "Plus" and "Minus" buttons at the same time. Display shows "rE". **Attention: Shut off values for the water pump must be entered respectively learned new after reset.**

6) Technical Data

Power supply:	3 x 400V 50Hz +/- 10%
Power of pump motor:	500W – 4.0kW
Allowed current:	1A – 8,5A
Float level switch:	12VDC, 30mA
Alarm contact:	potential free (max. 230V, 4A)
Protection class:	IP63
Temperature range:	-10 to 40°C, without condensation
Housing dimensions:	175 x 250 x 100mm (l x w x h)



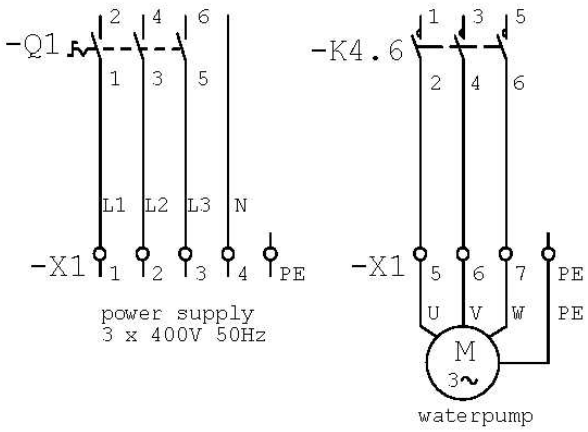
				Datum	17.11.2009	EBARA Pumps Europe S.p.A. 63128 Dietzenbach Philipp-Reis-Strasse 15		Classic	Typ 400/1 0,5-5,5kW = +
				Bearb.	Grote				
				Gepr.					Blatt 6
Zust.	Änderung	Datum	Name	Norm		Urspr.	Ers. f.	Ers. d.	von 8Bl.

Operating Manual EBARA Control Classic 400/B

The pump control 400/B of the classic line is an efficient and convenient control for operating 400V single pump systems with a power of 1kW to 5,5kW. Read this operating manual carefully and attend the safety instructions before start working.
EBARA Pumps Europe refuses all liability for accident or damage, which arises as a result of failure to follow this operating manual.

1) Electrical Connection

Attention: Electrical connection must be carried out by an authorized electrician only. Observe the instructions of VDE and of the common network operator for installation by customer. Disconnect the controller from the mains before carrying out all assembly and connection work.
Attention: 230V supply voltage at marked area on printed board.
Ensure that type plate data of the controller (power consumption and voltage) is corresponding with the motor data.



Connect the pressure switch, respectively float level switch, to the appropriate marked terminal on printed board. The same applies by using the alarm output.

2) Commissioning

Switch on the control by using the main switch on the right side of the housing. The display shortly shows the program version and afterwards the operating state of the pump (0n=on, 0f=off). **Attention: The controller is ready to operate immediately. If float level switch is on, the pump will get started!** Now perform the desired settings (see chapter 3). Refill the pump, respectively the piping, completely with water by using the manual mode to prepare the operating state. Set the switch off conditions for dry run and for current surge detection. **For this purpose the system has to be bleed and has to be in operating state. Use the special learning program to detect switch off values. Activate this function by pushing the "Prog" button (display shows "Lr") while switching the controller on.** The pump will be started for circ. 10 s and the obtained data will be saved. Afterwards the controller works normally. If the operating conditions are strong unsteady it is rarely possible to carry out a fine tuning. Use therefor the menus "P1" and "P2" (see chapter 3b and 3c). **Attention: Without setting the switch off values the water pump has no guard against over-current. Check the dry run detection after setting the values.**

3) Programming

Push the "Prog" button to get into the menu. Use "Plus" and "Minus" to change between several menu items. Activate the menu item by pushing the "Prog" button. Modify the values by "Plus" and "Minus". The „Prog" button saves the modified values. The controller works normally during programming. Modified values will be assumed after saving.

Menu	Function	Range of Values	Factory Settings
P0	quit selection menu		
P1	threshold Cos Phi for dry run detection	0,4 - 0,95	0,70
P2	current breaker at overload	3-16A	--
P3	lag time until dry run is detected	1-99s	5
P4	time interval of repeats after dry run detection	1-99min	10
P5	number of repeats after dry run detection	0-10	4
P6	overtravel time	0-99s	0s
P7	display of currently measured Cos Phi		
P8	display of current consumption (A)		
P9	manual operation		

3a) Quit Menu Selection (P0)

Activate this function to quit the programming level of the controller.

3b) Threshold Cos Phi for Dry Run Detection (P1)

Water pump will switch off, if operation value falls below the value set in "P1", for the time (set in "P3"). The display shows "tr" and the alarm contact will be closed. In case of manual input choose a value slightly under Cosinus Phi, which occurs during operation.

3c) Current Breaker at overload (P2)

If power consumption of the water pump is above the set value in "P2", water pump will switch off and the controller changes into fault mode. The higher the measured power, the faster happens the switch off. The display shows "AL" and the alarm contact will be closed. For trouble shooting see chapter 4. The set value should be 5% above nominal current of the water pump.

The display shows values bigger than 9,9A with a decimal point after the last digit. Here some examples:

- 5,6A is shown as 5.6
- 9,9A is shown as 9.9
- 10,3A is shown as 0.3.
- 15,3A is shown as 5.3.

3d) Lag Time until Dry Run is Detected (P3)

For this time the measured Cosinus Phi must fall below the value set in „P1" until switch off.

3e) Time Interval of Repeats after Dry Run Detection (P4)

Choose the time interval, when the controller should start operations again after dry run detection (if existing requirement are assumed). Set the number of these time intervals of repeats under „P5".

3f) Number of Repeats after Dry Run Detection (P5)

After the first dry run detection the controller tries to start operations for the time set in "P5". The breaks between two trials are set in „P4". If even the last trial results in a dry run of the pump, the controller changes into fault mode. The display shows "AL" and the alarm contact will be closed. For trouble shooting see chapter 4.

3g) Overtravel Time (P6)

After switching off the pressure switch or the float level switch the water pump runs for the time set in "P6" (0-99s).

3h) Display of currently measured Cos Phi (P7)

This function helps to detect switch off values for dry run detection in manual programming. The current measured value for Cos Phi is always shown. Quit the menu by pushing the "Prog" button.

3i) Display of Current Consumption (P8)

This function helps to detect the switch off values for over-current switch off in manual programming. The currently measured power consumption of the pump is always shown. Quit the menu by pushing the "Prog" button.
Currents over 9.9A are shown with a decimal point of the unit position.

3j) Manual Operation (P9)

Using this function an electrician has the opportunity to switch on respectively switch off the pump irrespective of the position of the float level switch. This is recommended for bleeding after installation. Use the "Plus" button to switch on and the "Minus" button to switch off manual operation. Quit the menu by pushing the "Prog" button. **Attention: Safety functions like over-current and dry run are switched off during manual operation. Use the manual operation for installation and test purposes only.**

4) Trouble Shooting

The water pump is switched off after failure (display shows "AL"). The controller stays in this mode until resetting to normal operation. After remedying the default switch off and switch on again by using the main switch. If the default reason could not be identified, it is possible to show the failure by shortly pushing the "Prog" button. The display shows a trouble code. The meaning of the code is shown in the following table:

Dis-play	Meaning	Trouble Shooting
F1	pump is switched on but no motor current is measured (I<1A)	check wiring
F2	switch off because of over-current (value of P2)	check pump, and set-tings in menu "P2"
F3	dry run occurs, repeats follow to start the pump	check pump
F4	switch off after dry run (all repeats fail)	check pump
F5	measuring of motor current although relay is switched off (device is defective)	repairing necessary
F6	maximum current of the control (16A) is exceeded	check wiring and pump
F7	Cos Phi measuring defective	repairing necessary
F8	checksum error in memory	repairing necessary
F9	memory defective	repairing necessary
FA	failure occurs at current learning. Learned value	(I <3.0A or > 16A)
FB	failure occurs at Cos Phi learning	(Cos Phi < 0.4)
FC	automatic matching of current measuring defective	repairing necessary
FD	asymmetric current consumption of the pump	check pump

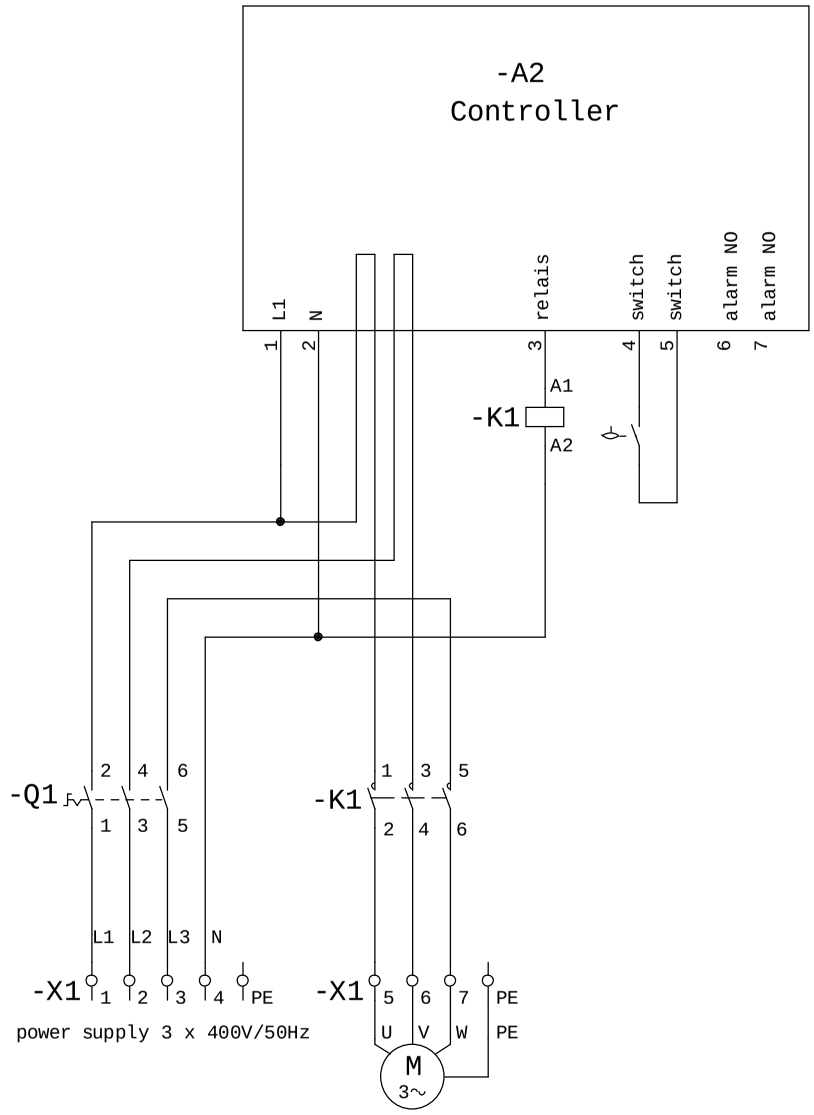
After readout and troubleshooting push the "Prog" button for circ. 2s.

5) Reset to Factory Settings

Programmed settings can be set back to factory settings. Switch on the controller by push-ing the "Prog", "Plus" and "Minus" buttons at the same time. Display shows "rE". **Attention: Shut off values for the water pump must be entered respectively learned new after reset.**

6) Technical Data

Power supply:	3 x 400V 50Hz +/- 10%
Power of pump motor:	1kW – 5.5kW
Allowed current:	3A – 16A
Float level switch:	12VDC, 30mA
Alarm contact:	potential free (max. 230V, 4A)
Protection class:	IP63
Temperature range:	-10 to 40°C, without condensation
Housing dimensions:	175 x 250 x 100mm (l x w x h)



				Datum	17.11.2009	EBARA Pumps Europe S.p.A. 63128 Dietzenbach Philipp-Reis-Strasse 15		Classic	Typ 400/1 0,5-5,5kW = +
				Bearb.	Grote				
				Gepr.					Blatt 6
Zust.	Änderung	Datum	Name	Norm		Urspr.	Ers. f.	Ers. d.	von 8Bl.