



MANUAL



CONTROL UNIT FOR ROTARY HEAT EXCHANGER

MicroStart

Artikelnr. F21008201

IBCcontrol



PAGE REFERENCE

Functional description	1
Technical data	2
Functions	2-3
- Push-button	
- DIP-switches	
- Operation indications	
- Alarm indications	
Connection diagram	4
Connections	4
Motor connections for single phase motors	5
EMC-installations	5
Check before switching on the control unit	6
Putting the equipment into operation	6
Manufacturer's declaration	7
Personal notes	8-11



FUNCTIONAL DESCRIPTION

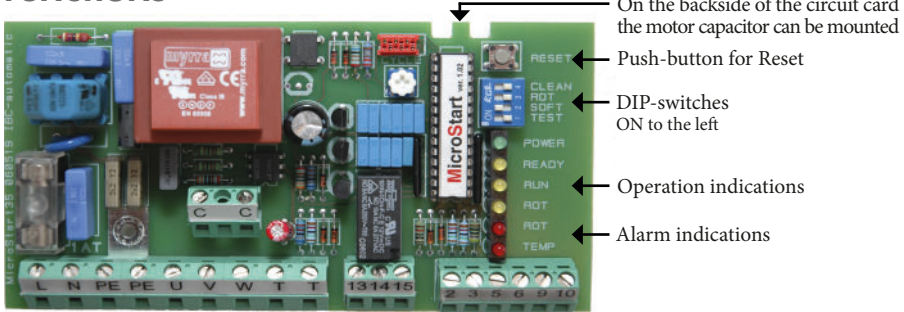
- MicroStart is a hybrid control unit between the simple on/off-control unit and the more advanced stepless control unit
- MicroStart, enclosed IP54, is a control unit intended for single phase motors.
The motor capacitor can be mounted in the control unit.
- MicroStart is intended for wheel diameters up to 1,5 m.
- MicroStart has a built-in soft start-/soft stop function to spare motor and gear.
This function is disconnectable.
- MicroStart has a pause/running time function controlled by the input signal, with a total cycle time of 60 sec. Depending on the level of the input signal, the proportion between pause and running time changes.
If the input signal is below the threshold value 0,5 V, the wheel stops.
- MicroStart has a built-in shift of the input signal, which implies that the efficiency of the wheel becomes proportional to the input signal.
- MicroStart has a build-in cleaning function. When the wheel has been still for 45 minutes, the cleaning function is activated and the wheel rotates for 10 seconds.
This function is disconnectable
- MicroStart has a built-in rotation monitor. A magnetic transmitter is connected to the control unit with a built-in hall element and a magnet with it.
This function is disconnectable.

TECHNICAL DATA

Motor power max	90 W	Incoming fuse max	10 A
Motor current max	1,0 A	Ambient temp.	-25 - +45 °C
Supply input voltage	1x230 V +/-10 %	non condensing	
	50 Hz	Protection rating	IP54
Output voltage	1x230 V	Weight	0,6 kg
Internal fuse*)	1 A	Measures, h x w x d	110x164x60 mm

*) The fuse protects both motor and electronics

FUNCTIONS



PUSH-BUTTON

Reset	Resets control unit after alarm. Automatic restart after voltage drop.
--------------	---

DIP-SWITCHES

Clean	Cleaning function connected at ON. When the wheel has been still for 45 minutes, the cleaning function is activated and the wheel rotates for 10 seconds.
Rot	Rotation monitor connected at ON. Magnet mounted on wheel and magnet transmitter with it.
Soft	Soft start / soft stop connected at ON. This function should always be connected to spare motor and gear. In cases of using a contactor and larger motor, this function should be disconnected.
Test	Manual run at ON. Used at starting up. The motor runs continuously irrespective of the input signal level.

OPERATION INDICATIONS

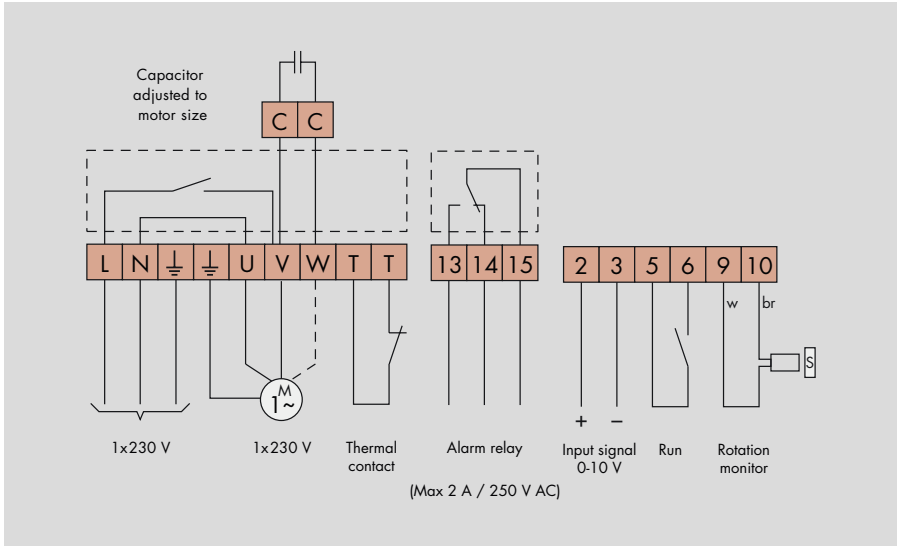
Power	“Current on”, lights with a fixed light. Twinkles at tripped control unit.
Ready	The control unit is in operational level, plinth 5-6 is closed.
Run	Indicates that the rotor is rotating.
Rot	Twinkles when rotation monitor is affected, irrespective of its DIP-switch level.

ALARM INDICATIONS

Green light diode twinkles and red light diode below is lighted. All alarms are remaining.

Rot	Tripped rotation monitor. The control unit trips if a pulse is not received every 5 minutes from the rotation monitor.
Probable cause of fault at installation	<ul style="list-style-type: none"> - Magnet turned the wrong way. - Magnetic transmitter wrongly connected, wrong polarity. - Distance between magnetic transmitter and magnet too large max. 15 mm.
Plausible cause of fault at run	<ul style="list-style-type: none"> - Broken belt - Slipping belt - Stuck wheel - Magnet transmitter or magnet not intact - If thermal contact of motor is not connected to the control unit, the thermal contact may trip. This will make the control unit trip on rotation monitor after 5 minutes.
Temp	Tripped thermal contact Thermal contact in motor tripped due to too high winding temperature. Thermal contact in motor returns to normal position when motor has cooled down.

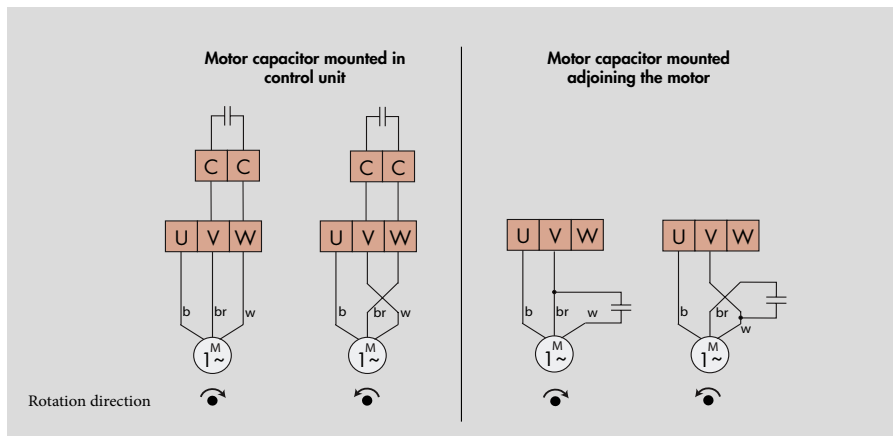
CONNECTION DIAGRAM



CONNECTIONS

Input voltage (L-N)	1x230 V +/- 10 %, 50Hz.
Motor (U-V-W)	Single phase motor 230 V. Also see separate connection diagram on page 5.
Capacitor (C-C)	According to the motor supplier recommendations.
Thermal contact (T-T)	Must be looped if no thermal contact in motor is connected.
Alarm relay (13-14-15)	Closes between 14-15 at alarm or voltage drop. Max 2 A / 250 V AC.
Input signal (2-3)	0-10 V. Plus connected to terminal 2, minus to terminal 3..
Run (5-6)	Must be looped if no external start is used.
Rotation monitor (9-10)	White cable connected to terminal 9, brown to terminal 10. Magnet mounted with south-side (S) pointing at the transmitter. Max. distance 15 mm.

MOTOR CONNECTIONS FOR SINGLE PHASE MOTORS



Colour code: b: black br: brown, w:white

Colours corresponding to our single phase motors 6 – 25 – 40 W.

Otherwise, see respective motor supplier's instructions.

EMC-INSTALLATION



EMC-gland shall be used with shielded cable.

Cables above, or equivalent, shall be used for fulfilling the EMC-terms.

If the thermal contact of the motor is drawn to plinth, this shall be connected to the control unit.

The two leaders of the thermal contact may be integrated in the motor cable.

CHECK BEFORE SWITCHING ON THE CONTROL UNIT

Control that	the motor is single phase 230 V.
Control that	the motor capacitor size is adjusted to the motor.
Control that	the control unit is connected according to instructions on page 4. Input voltage 230 V +/-10 %, 50 Hz.
Control that	the input signal is 0-10 V.

PUTTING THE EQUIPMENT INTO OPERATION

Should be done in order

Control that	the motor rotates in the correct direction according to the rotation direction of the wheel. At incorrect rotation direction, see motor connections on page 5.
Control of rotation monitor	Yellow light diode (ROT) should twinkle when magnet passes magnetic transmitter, irrespective of the DIP-switch position.
Control of cleaning function	Turn off voltage. Control that the DIP-switch CLEAN is in position ON, and that the input signal is disconnected. After turning on voltage again, the wheel should rotate for 10 sec.

MANUFACTURER'S DECLARATION

The manufacturer's assurance of the agreement of the product with the demands in THE EMC DIRECTIVE EN61000-6-4 (2001).

Manufacturer	IBC control AB Brännerigatan 5 A, 263 37 HÖGANÄS
Product	Control unit for rotary heat exchangers
Type designation	MicroStart
EC directives applied to the product	EN61000 - 2: 2001 EN61000 - 6 - 3: 2001

The manufacturer assures on his own responsibility that the product which this assurance concerns corresponds with the demands in the EC directives stated above.

This product is corresponding to the RoHS-directive

Höganäs 2006-10-20

IBC control AB



Christer Persson
MD

F21008901GB
VERSION 1.4
202001-14



IBC control AB
Brännerigatan 5 A
SE-263 37 Höganäs
Sweden
Tel +46 42-33 00 10
www.ibccontrol.se
info@ibccontrol.se