MOVEX

CONTROL UNITS
Extraction arms

Adaptable to all types of applications, Movex control units support a highly efficient working environment. Choosing the right control unit reduces energy costs and lowers noise levels.

Control automation incorporates specially adapted and proven components and will even influence recommendations for appropriate system selections. In the installation examples on pages 2 through 5, there are suggestions for various solutions to help find systems to satisfy most needs. Local extraction arms are presented in various system solutions within the examples. Automation can even be used in other applications, such as when connecting extractors directly to machinery.

For control of automotive exhaust installations, see the Controls-Vehicle Exhaust Extraction brochure.

Most types of sensors (such as for gas, heat, light and vibrations) can be combined with the S 200 and S 400 control units.

For help in optimizing extractor installations or calculating energy savings, please contact Movex.

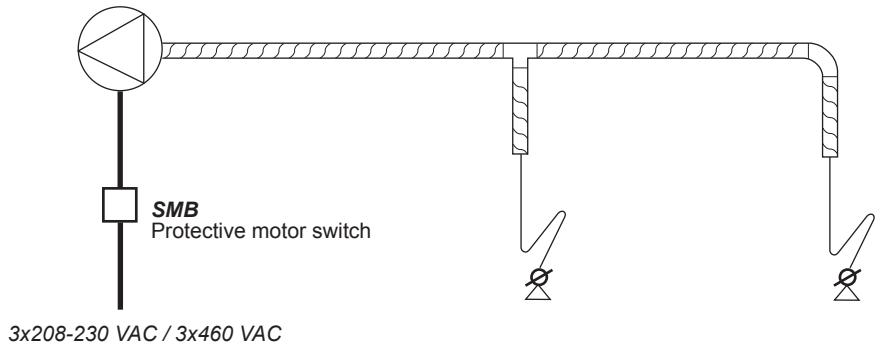
Movex also offers a wide range of local extractors, fans, accessories and filters.

Start and stop of fans, with or without speed control

System 1:1
Manual start and stop of fan

The fan is manually started and stopped with a protective motor switch SMB.

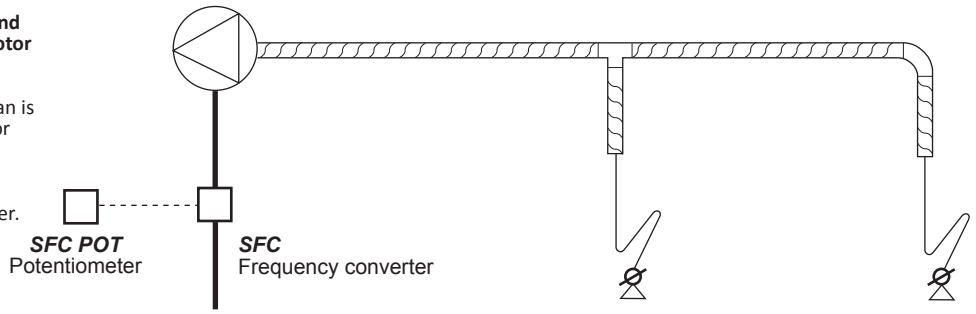
The protective motor switch has a thermal-magnetic release and phase failure protection.



System 1:2
Manual speed control of fan is started and stopped with external signal 3-phase motor only

The signal for starting and stopping the fan is produced with an external signal from, for example, a central monitoring system.

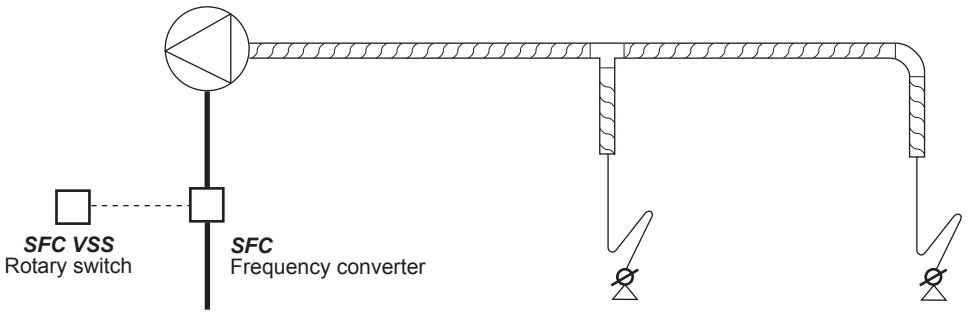
The fan's speed is regulated manually as necessary with the SFC POT potentiometer.



System 1:3
Manual start and stop of fan with two speeds 3-phase motor only

The fan is manually started and stopped with the SFC VSS rotary switch.

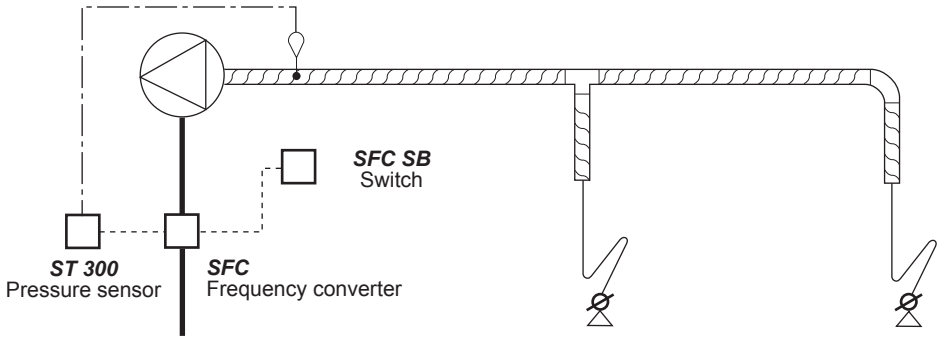
With the rotary switch, the fan speed can be regulated between two preset speeds that are programmed on the frequency converter display.



System 1:4
Manual start and stop of fan and need-adapted control of fan speed 3-phase motor only

The fan is manually started and stopped with the SFC SB switch.

The frequency converter maintains a constant negative pressure in the main duct via the pressure sensor.



3x208-230 VAC/ 3X460 VAC
Signal cable
Plastic tubing

Start and stop fans with contactor

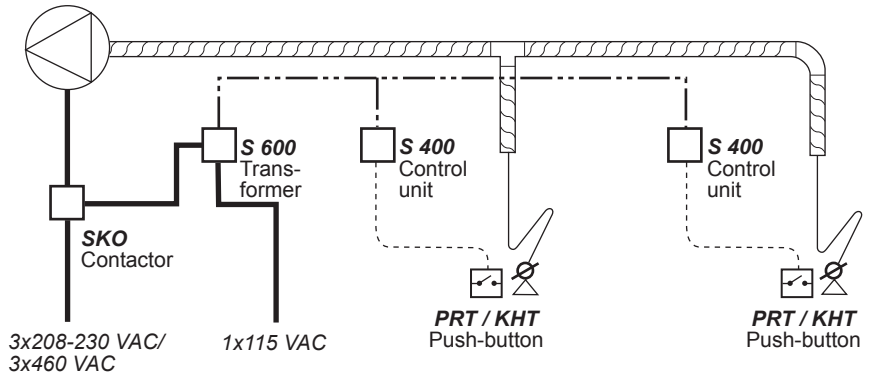
Manual control from work station with time delay

System 2:2

Manual start and stop of fan.

Start and stop is made manually with a push-button mounted on the extractor.

The S 400 control unit has a built-in adjustable time delay of 0 - 15 minutes.



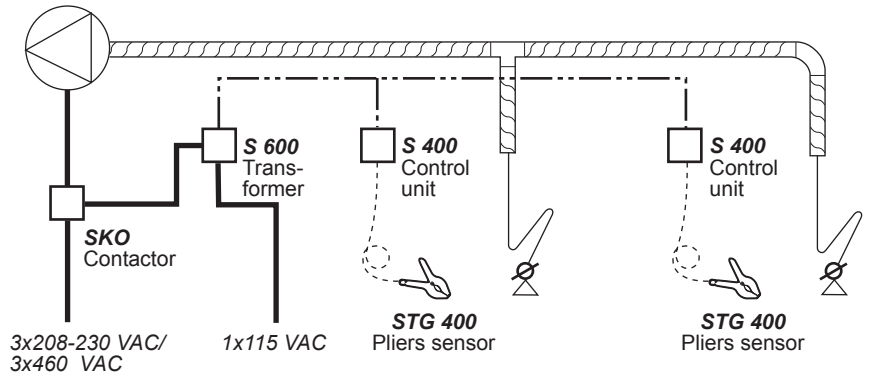
Automatic control from work station with time delay.

System 2:3

Automatic starting and stopping of fan.

Starting and stopping are conducted automatically with the STG 400 pliers sensor, which is clipped onto the grounding cable of the welding transformer.

The S 400 control unit has a built-in adjustable time delay of 0–15 minutes.



3x208-230 VAC/ 3X460 VAC
24 VAC
Signal cable

Individual damper control and start and stopping of fan via contactor

Damper and contactor manually controlled from the work station with time delay

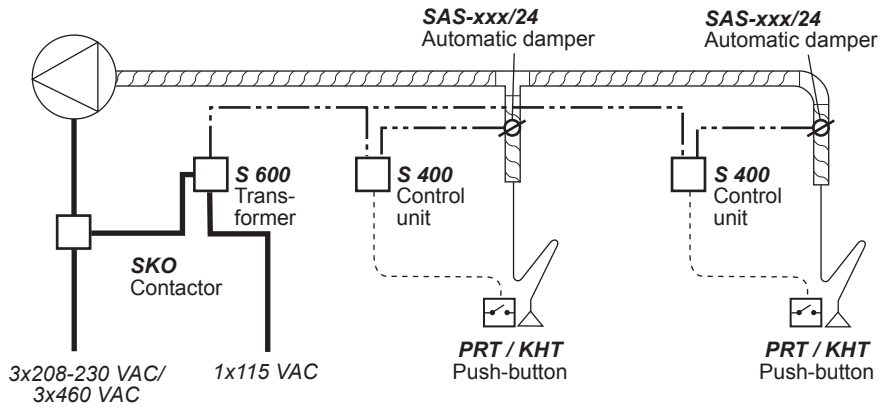
System 3:2

Manual control of damper and start and stop of fan

Opening and closing of the damper is made manually via a push-button mounted on the extractor.

A control signal from the control unit starts and stops the fan.

The S 400 control unit has a built-in adjustable time delay of 0–15 minutes.



Damper and contactor automatically controlled from the work station with time delay

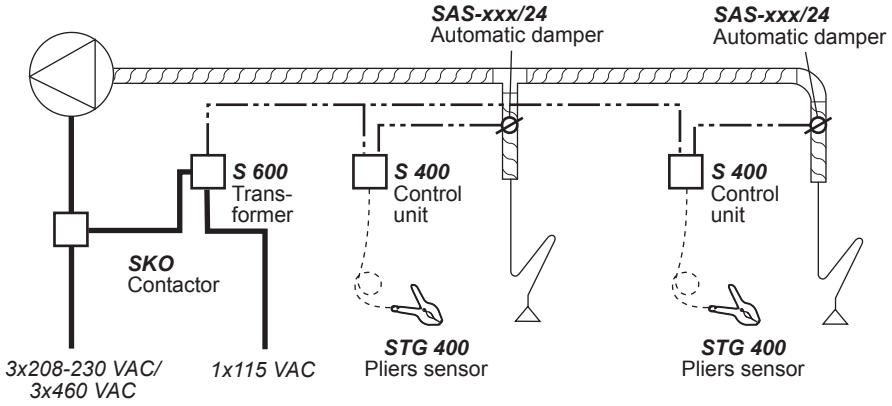
System 3:3

Automatic control of damper and start and stop of fan

The damper opens and closes automatically with the STG 400 pliers sensor, which is clipped onto the grounding cable of the welding transformer.

A control signal from the control unit starts and stops the fan.

The S 400 control unit has a built-in adjustable time delay of 0–15 minutes.



3x208-230 VAC/ 3x460 VAC
24 VAC
Signal cable

Individual damper control and need-adapted control of fan via a pressure sensor and frequency converter

Damper and frequency converter manually controlled from the work station with time delay

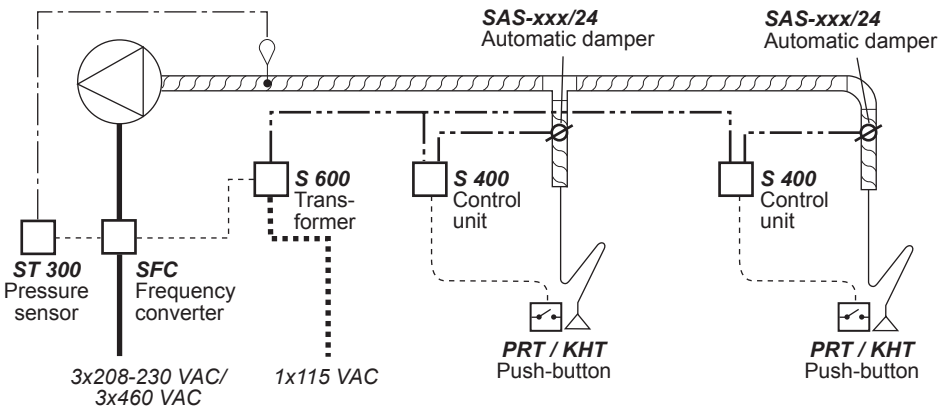
System 4:2

Manual control of damper and need-adapted control as well as start and stop of fan 3-phase motor only

The damper is opened and closed manually with a push-button mounted on the extractor, which also starts and stops the fan.

The frequency converter maintains a constant negative pressure in the main duct via the pressure sensor.

The S 400 control unit has a built-in adjustable time delay of 0–15 minutes.



Damper and frequency converter automatically controlled from the work station with time delay

System 4:3

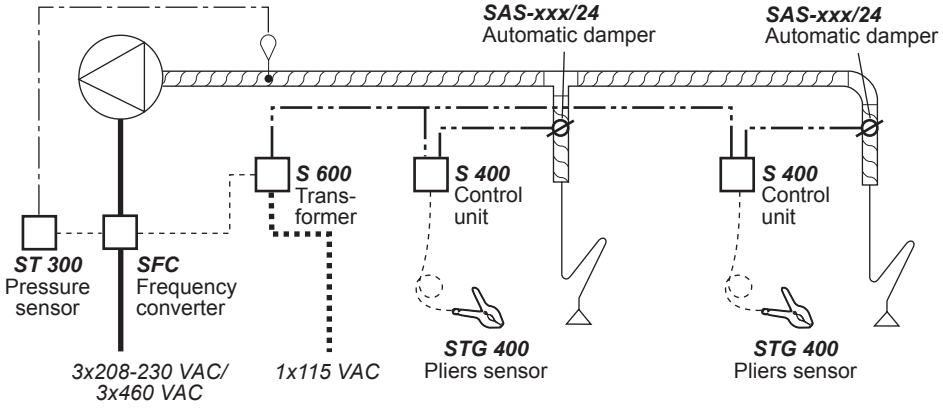
Automatic control of damper and need-adapted control and start and stop of fan 3-phase motor only

The damper is opened and closed automatically with the STG 400 pliers sensor, which is clipped onto the grounding cable of the welding transformer.

A control signal from the control unit starts and stops the fan.

The frequency converter maintains a constant negative pressure in the main duct via the pressure sensor.

The S 400 control unit has a built-in adjustable time delay of 0–15 minutes.



1x115 VAC
3x208-230 VAC/ 3x460 VAC
24 VAC
Signal cable
Plastic tubing

SFC

FREQUENCY CONVERTER

Designed for process ventilation

The SFC frequency converter is designed for variable speed control of fans. This provides optimal operating effiency and the lowest possible noise level. Depending on the number of work stations in operation, the SFC (along with the ST 300 pressure sensor) varies the fan speed and thus evacuates the correct amount of air. Alternatively, manual variable control can be used with the SFC POT potentiometer. The enclosure class is IP 20 and includes a NEMA mounting kit.
SFC converters can be for 208V-230V, or 460V. For alternative voltages, etc., please contact Movex.

MOVEX VFD number	Fan model	Hp	Voltage in	Voltage out	Phase	Amps
SFC 076-3-230 SFC 076-3-460	FB 076-3 FB 076-3	0,75 0,75	208-230 460	208-230 460	3 3	2.2 - 2.45 1.1
SFC 106-3-230 SFC 106-3-460	FB 106-3 FB 106-3	1 1	208-230 460	208-230 460	3 3	3.7 - 4.1 1.85
SFC 206-3-230 SFC 206-3-460	FB 206-3 FB 206-3	2 2	208-230 460	208-230 460	3 3	5.6 - 6.2 2.8
SFC 406-3-230 SFC 406-3-460	FB 406-3 FB 406-3	4 4	208-230 460	208-230 460	3 3	10.6 - 11.7 5.3
SFC 706-3-230 SFC 706-3-460	FB 706-3 FB 706-3	7,5 7,5	208-230 460	208-230 460	3 3	17.6 - 19.4 8.8
SFC 1506-3-230 SFC 1506-3-460	FB 1506-3 FB 1506-3	15 15	208-230 460	208-230 460	3 3	35.2 - 38.9 17.6

SFC PS/VSS/SB

SFC PS POTENTIOMETER

The SFC PS is a potentiometer for variable regulation of fan speed via frequency converters.

Dimensions	$3^{15/16}$ x $3^{15/16}$ x $2^{5/8}$ inches
Resistance	10 kΩ

SFC VSS ROTARY SWITCH

The SFC POT is a rotary switch for 2-step regulation of fan speeds via frequency converters.

Dimensions	$3^{15/16}$ x $3^{15/16}$ x $2^{5/8}$ inches
Increments	0-1-2

SFC SB SWITCH

The SFC SB is a switch for start/stop of fans via frequency converters.

Dimensions	$2^{3/8}$ x $3^{1/8}$ x $2^{3/16}$ inches
Enclosure class	IP 54
Power supply	Max 250 V, 16 A

ST 300

ST 300 PRESSURE SENSOR

The ST 300 maintains constant negative pressure in the discharge duct via a frequency converter that controls fan speeds. The ST 300 always provides the correct flow, regardless of the number of open and closed dampers.

Dimensions	$3^{9/16}$ x $3^{3/4}$ x $1^{7/16}$ inches
Enclosure class	IP 54
Operating range	2, 4, 8, 12 IN/WG
Power supply	24 VDC
Output signal	0-10 V (alt. 4-20 mA)
Included accessories	Measurement output and 7 feet plastic tubing

S 400 CONTROL UNIT

The S 400 is used for automatic control of damper motor SAS 24 at terminals 1–4. Fans are normally controlled via the S 600 transformer units. The after-run time for evacuation of remaining gases is built into the control unit. The time is set between 0–15 min. The S 400 is supplied with 24 VAC from the S 600 transformer unit.

Dimensions	$5^{1/8}$ x $3^{1/8}$ x $3^{1/16}$ mm
Enclosure class	IP 54
Primary side	24 VAC
Secondary side	24 VAC

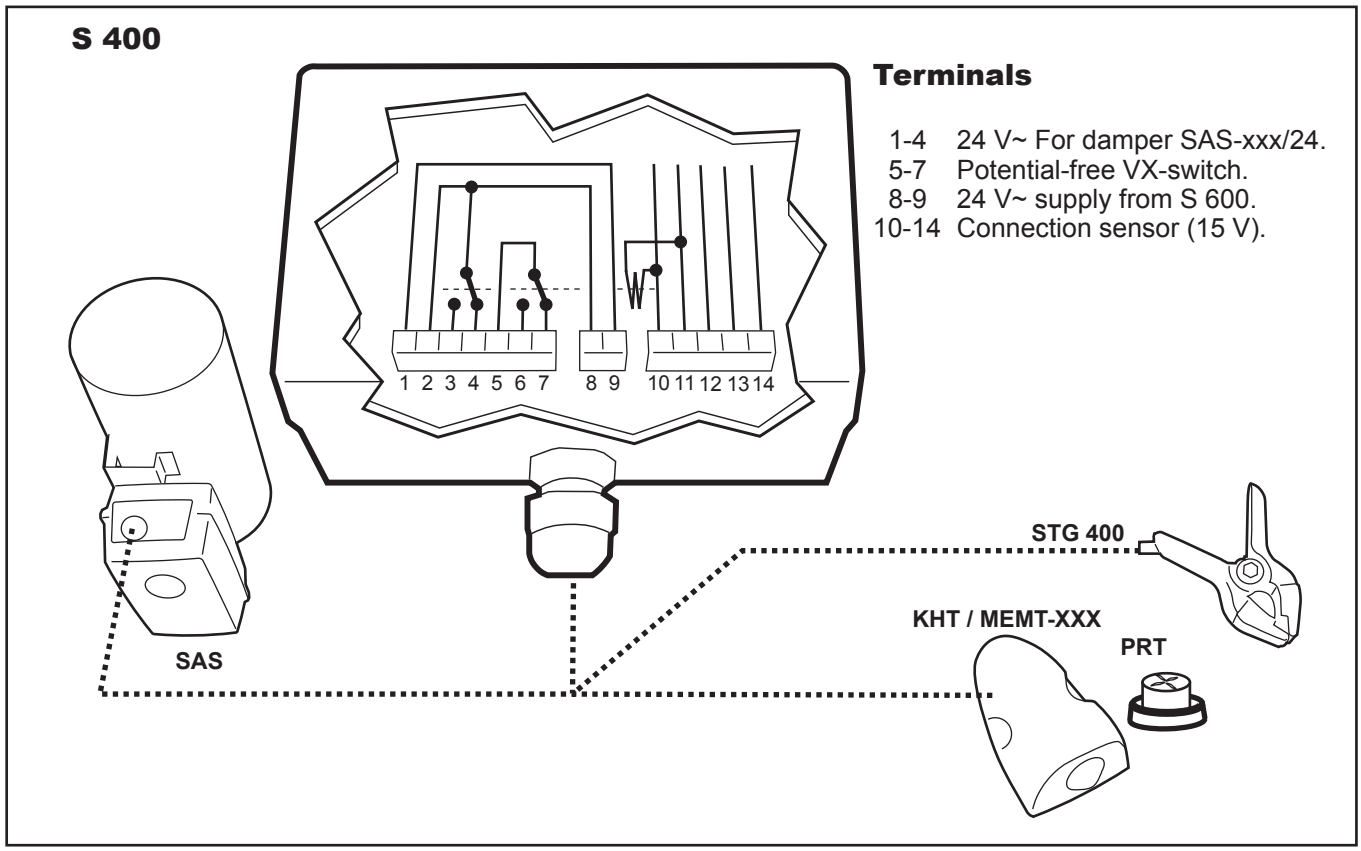
SMT 60 TIMER SWITCH

The SMT mechanical timer switch is a manual timer, adjustable from 0 to 60 minutes. It can replace a KHT push-button unit. The SMT 60 is wall-mounted close to the extractor.

Dimensions	$3^{15/16}$ x $3^{15/16}$ x $2^{5/8}$
Timeset	0 - 60 min.

ACCESSORIES

SSB	Switch
STG 400	Clip-on sensor
KHT / MEMT	Push-button unit
PRT	Push-button



Terminals

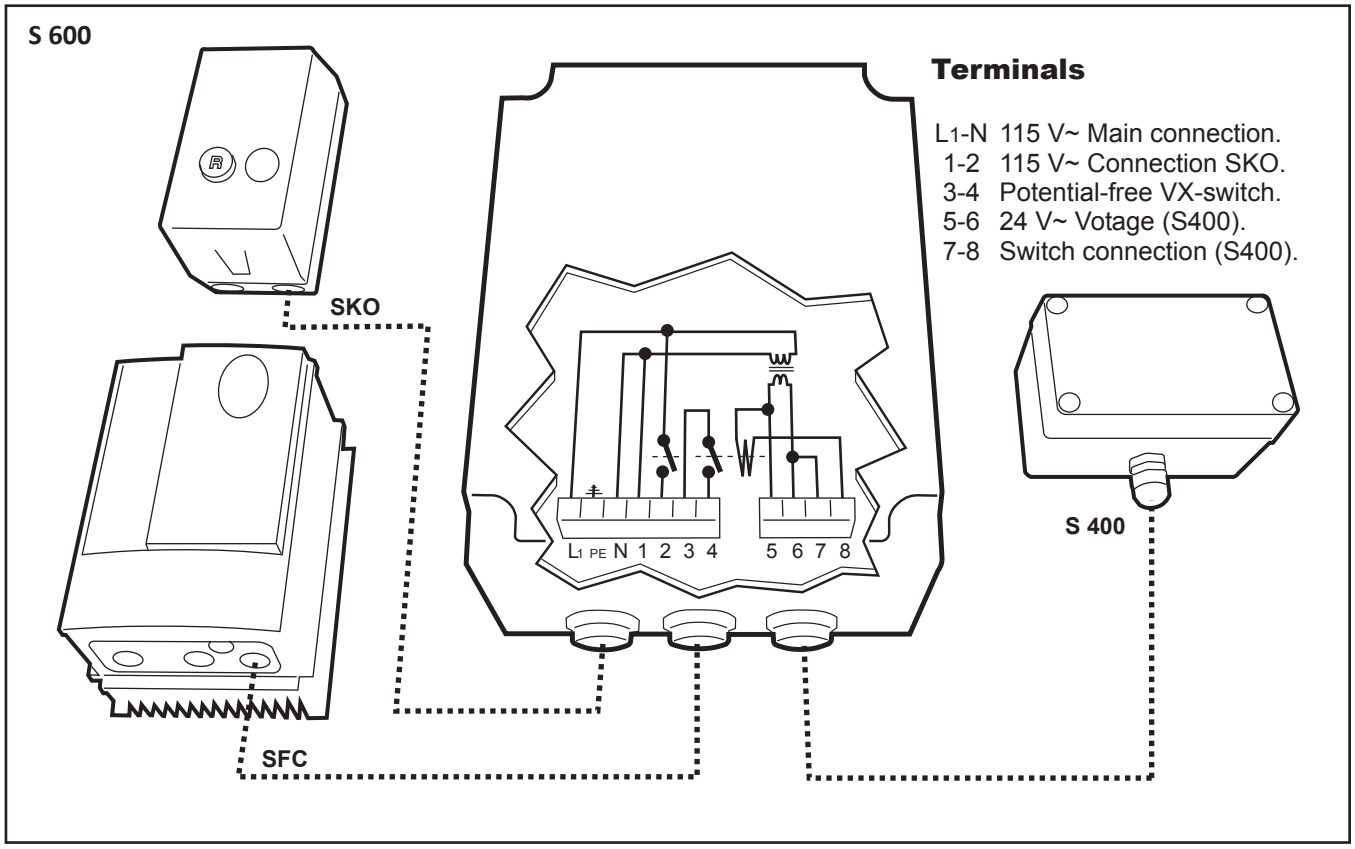
1-4	24 V~ For damper SAS-xxx/24.
5-7	Potential-free VX-switch.
8-9	24 V~ supply from S 600.
10-14	Connection sensor (15 V).

S 600

S 600 TRANSFORMER UNIT

The S 600 is used to supply 24 VAC to the S 400 control unit. Control of fan is made via external contactor 230 VAC, via signal from terminals 1 & 2. Frequency converter is controlled via the potential-free outputs, terminals 3 and 4.

Dimensions	$5^{1/8}$ x $7^{1/6}$ x $4^{1/16}$ inches.
Enclosure class	IP 54
Primary side	115 VAC
Secondary side	24 VAC (60 VA)



S 200/115

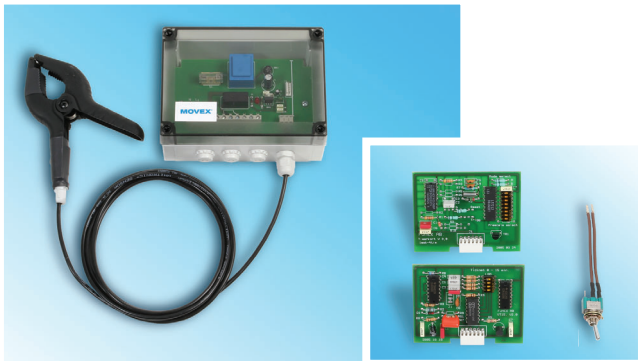
S 200/115 CONTROL UNIT

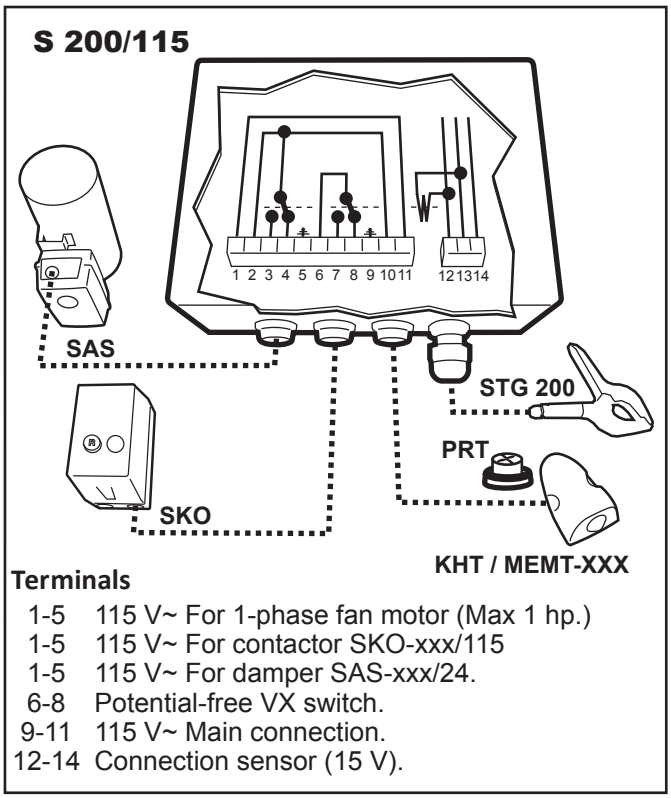
The S 200/115 is used for start/stop of a fan. The after-run time for evacuation of remaining gases is built into the pliers sensor (~30 sec.). For longer run-times, there are adjustable timer cards available (0-15 min. and 0-240 min.) as accessories. Single-phase fans (max. 1 hp) can be directly controlled via an integrated relay. Other fans are controlled with an external contactor via the same integrated relay, terminals 1–5. Frequency converters are controlled via the potential-free output, terminals 6–8.

Dimensions	$7^{1/16}$ x $5^{1/8}$ x $3^{1/16}$ inches
Enclosure class	IP 54
Primary side	115 VAC
Secondary side	115 VAC (Max 10A)

ACCESSORIES

STK 15	Timer card 0-15 min
STK 240	Timer card 0-240 min
SSB	Switch
STG 200	Pliers sensor (~30s delay)
KHT	Push-button unit





Terminals

1-5	115 V~ For 1-phase fan motor (Max 1 hp.)
1-5	115 V~ For contactor SKO-xxx/115
1-5	115 V~ For damper SAS-xxx/24.
6-8	Potential-free VX switch.
9-11	115 V~ Main connection.
12-14	Connection sensor (15 V).

S 200/115-24

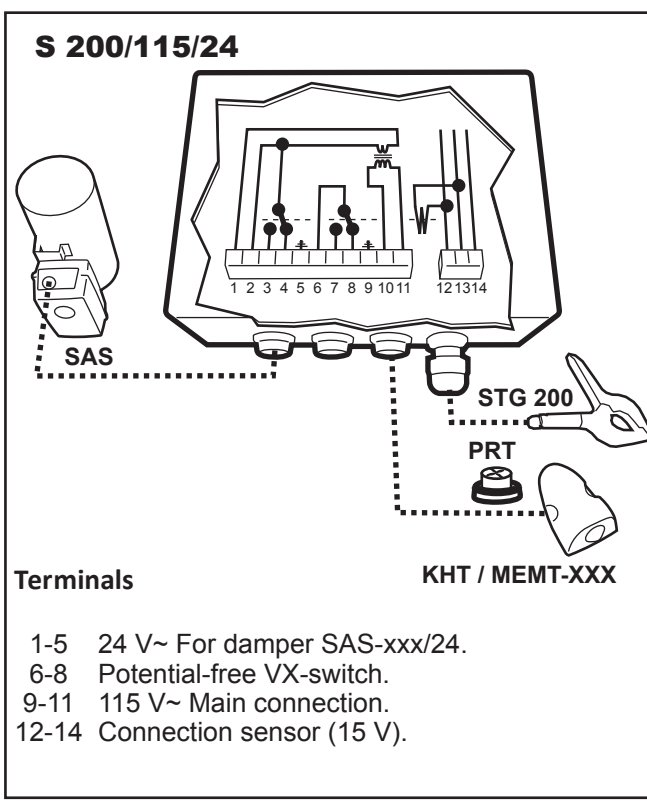
S 200/115-24 CONTROL UNIT

The S 200/115 24 is used for automatic control of damper motor SAS 24 . The after-run time for evacuation of remaining gases is built into the pliers sensor (~30 sec.). For longer run-times, there are adjustable timer cards available (0-15 min. and 0-240 min.) as accessories.
Fans are controlled with external contactors via the integrated relay, terminals 1–5. Frequency converters are controlled via the potential-free output, terminals 6–8.

Dimensions	$7^{1/16}$ x $5^{1/8}$ x $3^{1/16}$ inches
Enclosure class	IP 54
Primary side	115 VAC
Secondary side	24 VAC

ACCESSORIES

STK 15	Timer card 0-15 min
STK 240	Timer card 0-240 min
SSB	Switch
STG 200	Pliers sensor (~30s delay)
KHT	Push-button unit



Terminals

1-5	24 V~ For damper SAS-xxx/24.
6-8	Potential-free VX-switch.
9-11	115 V~ Main connection.
12-14	Connection sensor (15 V).

SMB

SMB PROTECTIVE MOTOR SWITCH

The SMB is a 3-pole protective motor switch with thermal-magnetic release and equipped with phase failure protection. The SMB is designed for control and protection of fan motors.

Dimensions $3^{11/16}$ x $5^{13/16}$ x $3^{5/16}$ inches.
Enclosure class IP 55

Product	Current range (A)	3-phase ~460 V (HP)
SMB 10*	0,63-1,0	0,37
SMB 16*	1,0-1,6	0,5/0,75
SMB 25*	1,6-2,5	1
SMB 40*	2,5-4,0	1,5/2,0
SMB 63*	4,0-6,3	3,0
SMB 100*	6,0-10,0	5,5
SMB 140**	9,0-14,0	7,5
SMB 180**	13,0-18,0	10

* Self-protecting, pre-fusing not required
** Max. pre-fusing when Ik>Icu is 63 A.

SKO

SKO CONTACTOR

The SKO is a 3-pole contactor with an overcurrent relay for manual resetting. The overcurrent relay has phase failure protection. It is used with external switches or control.

Dimensions $4^{1/16}$ x $7^{7/8}$ x 6 inches
Enclosure class IP 55

Product	Current range (A)	3-phase ~460 V (HP)
SKO 10/115*	0,63-1,0	0,37
SKO 17/115*	1,0-1,7	0,5/0,75
SKO 25/115*	1,6-2,5	1
SKO 40/115*	2,5-4,0	1,5/2,0
SKO 60/115*	4,0-6,0	3,0
SKO 80/115*	5,5-8,0	5,5
SKO 130/115**	9,0-13,0	7,5
SKO 180/115**	12,0-18,0	10

* Maximum power is 4 hp.
**Maximum power is 13 hp.

SAS

SAS AUTOMATIC DAMPER

The SAS is an automatic single-blade damper for applications where short operating times are necessary.
The high speed motor opens the damper blade in 7.5 seconds creating a 95% extraction capacity after only 3 seconds.
The damper is supplied for air tightness class 1.
For other air tightness classes, please contact Movex.

Dimensions (motor)	$5^{1/2}$ x $3^{15/16}$ x $3^{3/8}$ inches
Material (cowling)	PA
Material (damper housing)	Galvanized sheet metal
Opening time, 90º	7,5 s
Torque	3 Nm
Power consumption (24 V)	2 VA in operation / 0 VA in end position

Product	Diameter (mm)	Voltage (V)
SAS-100/24	**Ø3 15/16**	**24**
SAS-125/24	**Ø4 15/16**	**24**
SAS-160/24	**Ø6 5/16**	**24**
SAS-200/24	**Ø7 7/8**	**24**
SAS-250/24	**Ø9 13/16**	**24**
SAS-315/24	**Ø12 3/8**	**24**

MOVEX

Movex Inc.
104 Commerce Drive
Northampton, PA 18067, USA
Phone: 610 440-0478 Fax: 610 440-0480
www.movexinc.com