

Air Damper Actuators

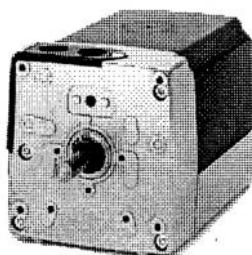
with electronic units

SQM5...

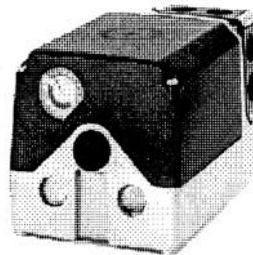
Supplementary Data Sheets: 7921 and 7922



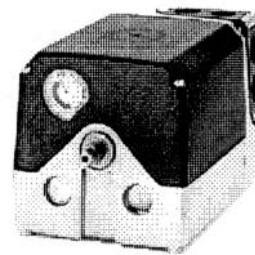
FM739



SQM5... front,
with drive shaft no. 7



SQM5... rear,
variant without second
drive shaft end



SQM5... rear,
variant with two
drive shaft ends

- Reversible electric actuator with torques up to 40 Nm
- Running times from 10 s to 90 s
- With one or two drive shaft ends, drive shaft exchangeable or separately available
- Can be equipped with electronic units of modular design for control and position feedback by means of continuous signals
- Internal and external position indication
- Possibility to disengage drive shaft and cam shaft separately

Technical Data

Type of current	AC
Operating voltage and frequency	refer to «Type Summary»
Type of drive motor	synchronous motor
Power consumption	20 VA
Radio interference protection	N to VDE 0875
Angular rotation	adjustable from 0° to 160° (scale range)
Mounting orientation	optional
Degree of protection	IP54, provided knockout holes remain closed during mounting or are appropriately closed off
Cable entry	4 x Pg 13.5 (threaded) 2 x Pg 13.5 (unthreaded)
Direction of rotation (viewed from the gear train side)	anticlockwise or clockwise (adjustable) supplied: anticlockwise
Torque	refer to torque charts and drive shafts
Holding torque	max. torque
Running time	10...90 s, refer to «Type Summary»
Limit and auxiliary switches	
- Type	to DIN 41 636
- Breaking voltage	AC 24...250 V
- Switching capacity	to CEE 24/VDE 0630 7.5(3)A, AC 250 V
Number of limit switches	2
Number of auxiliary switches	6 max.
Drive shaft	exchangeable
Perm. ambient temperature without built-in electronic units	
- Operation	-20...+60°C
- Transport and storage	-50...+60°C
Weight (average)	3.3 kg

Application

The actuators of the SQM5... range are designed to drive gas or air dampers of oil and gas burners of medium to large capacities. They are intended primarily for load-dependent control of the amount of gas, oil or combustion air:

- in connection with three-position or modulating controllers (e.g. 4 to 20 mA)
or
- directly through the burner control.

Design Features

Housing	Housing sections made of die-cast aluminium; covers made of impact proof heat resistant plastic
Drive motor	Reversible, locking-proof synchronous motor
Coupling	Drive shaft and cam shaft can be adjusted separately, independent of the geartrain
Cam shaft drive	Backlash-free toothing
Adjustment of switching points	By means of adjustable cams, scales besides the cams indicate the angle of the switching point
Position indication	Internally: scale at the end of the cam shaft - Black scale for anticlockwise rotation, single arrow on the cam - Red scale for clockwise rotation, double arrow on the cam Externally: scale in viewing window
Connections	Quick connectors at the microswitch Screw type terminals for N and PE Possibility of premounting and fixing the wiring by means of removable Pg insert made of plastic Easy introduction of cables through large openings in the housing Fixing of Pg insert with complete cables by means of a screw
Protection against electric shock	By hinged plastic cover, allowing safe setting of cams when mains voltage is present
Geartrain	Maintenance-free gearwheels and bearings
Drive shaft	Secured by an easy-to-exchange circlip Possibility of drive shaft on both sides
Fixing of actuator	Fixing holes on front of housing and at the bottom Fixing on front also possible from inside the housing Variable mounting height through extra adapter

Type Summary

Running time at 50 Hz ¹⁾ and an angular rotation of		Auxiliary switches incl. 2 limit switches	Type of drive shaft	Max. torque and holding torque ³⁾	AC 220 V -15%... 240 V +10% 50...60 Hz	AC 100 V -15%... 110 V +10% 50...60 Hz	AC 24 V -15% +10% 50...60 Hz
90°/s	130°/s	Pieces	AGA58.no	/Nm ²⁾	Typ reference	Typ reference	Typ reference
15	22	8	1	10	SQM50.381A2	SQM50.380A1 ⁵⁾	SQM50.380A8 ⁵⁾
15	22	8	3	15	SQM50.383A2	- ⁴⁾	- ⁴⁾
30	43	8	1	10	SQM50.481A2	SQM50.480A1 ⁵⁾	- ⁴⁾
30	43	8	3	15	SQM50.483A2	- ⁴⁾	SQM50.483A8
30	43	8	3	15	SQM50.483A2Z3 ⁸⁾	SQM50.483A1Z3 ⁸⁾	SQM50.483A8Z3 ⁸⁾
34	49	2	4	15	- ⁴⁾	- ⁴⁾	SQM50.424A8
34	49	4	3	15	- ⁴⁾	- ⁴⁾	SQM50.443A8
45	65	4	3	15	- ⁴⁾	- ⁴⁾	SQM50.543A8
60	87	8	1	10	SQM50.681A2	SQM50.680A1 ⁵⁾	- ⁴⁾
45	65	4	3	15	- ⁴⁾	- ⁴⁾	SQM50.543A8
30	43	8	2	20	SQM53.482A2	SQM53.480A1 ⁵⁾	- ⁴⁾
45	65	8	2	20	SQM53.582A2	SQM53.580A1 ⁵⁾	- ⁴⁾
30	43	8	9	25	SQM53.489A2	- ⁴⁾	- ⁴⁾
30	43	8	2	20	SQM54.482A2 ⁶⁾	- ⁴⁾	- ⁴⁾
30	43	8	2	20	SQM54.482A203 ⁶⁾⁷⁾	- ⁴⁾	- ⁴⁾
45	65	8	5)	25	SQM54.580A2 ⁶⁾	- ⁴⁾	- ⁴⁾
60	87	8	7	40	SQM56.687A2	SQM56.687A1	SQM56.687A8
60	87	8	7	40	SQM56.687A2Z3 ⁸⁾	- ⁴⁾	- ⁴⁾

- 1) At a frequency of 60 Hz, the running times are approx. 17% shorter
 2) Based on 250,000 position changes
 3) Refer to «Drive shafts» and «Torques» in function of the voltage
 4) Voltage-variant on enquiry

- 5) Drive shaft must be ordered separately
 6) With reduced backlash, especially for RVW / RPO applications or electronic compound control
 7) With pre-assembled potentiometer ASZ12.803
 8) With pre-assembled electronic function module AGA56.9 and potentiometer ASZ12.803

Accessories

Potentiometer refer to Data Sheet 7921

Mounting kit ASK33.9
 For assembly of SQM5... and VKF41 butterfly valve, only with drive shaft AGA58.1

Spacer AGA57.1
 For replacing SQM10/20 by SQM5...

Adapter for ME8 actuator AGA57.2

Adapter for Honeywell Mod. III actuator AGA57.3

Electronic units refer to Data Sheet 7922
 of modular design for actuator control, for incorporation in the actuator

Drive shafts

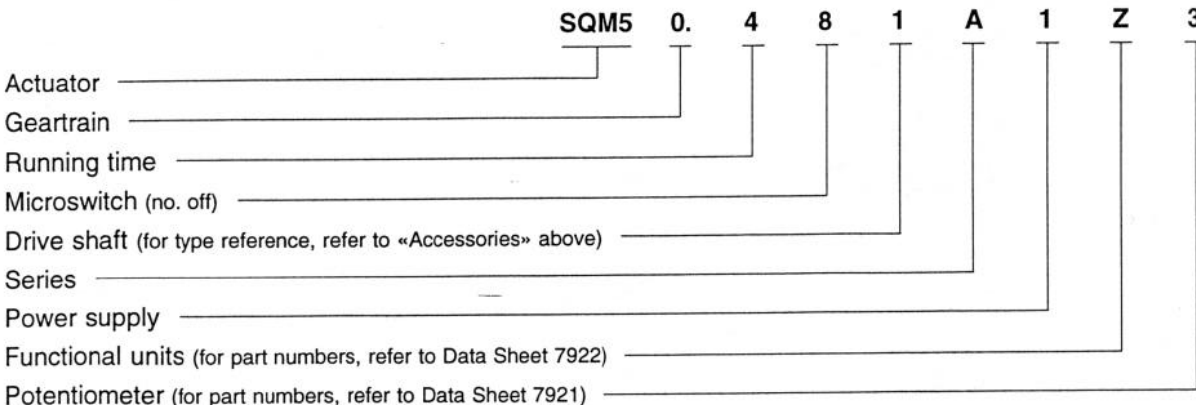
Drive shaft	Max. torque	Type code	Type reference
10mm dia., single-sided with Woodruff key, corresponds to shaft of the SQM10...	10 Nm	1	AGA58.1
12mm dia., single-sided with Woodruff key, corresponds to shaft of the SQM20...	20 Nm	2	AGA58.2
9 mm□, double-sided, corresponds to shaft of the ME8	25 Nm	3	AGA58.3
9.5 mm□, double-sided, corresponds to shaft of the Honeywell Mod. III	30 Nm	4	AGA58.4
14 mm dia., single-sided with feather key, mandatory with the SQM56...	40 Nm	7	AGA58.7
12 mm□, single-sided	30 Nm	9	AGA58.9

Ordering

When ordering, please give type reference according to «Type Summary». Accessories have to be ordered separately. Actuators with prefitted accessories are only available on request.

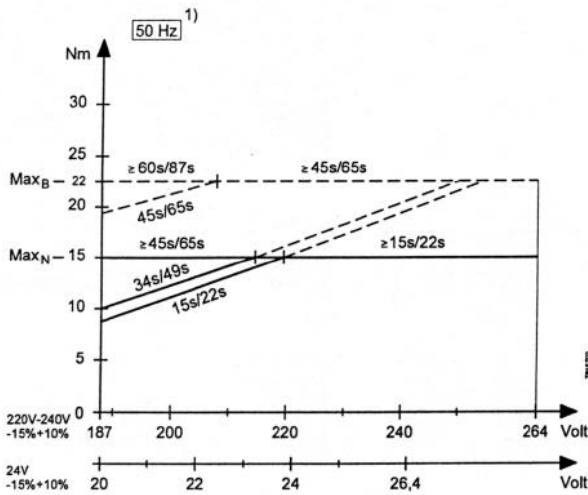
Type Code

(Do not use for ordering!)

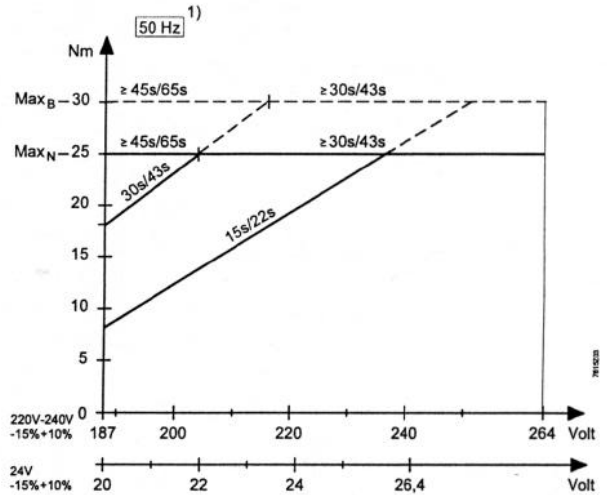


Torque Ratings

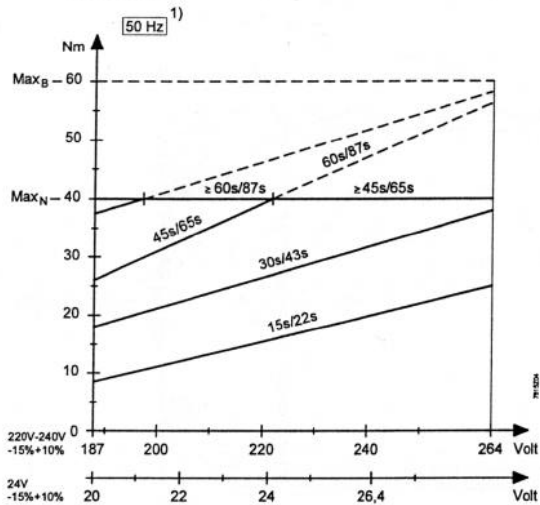
SQM50



SQM53/54



SQM56



— Torque in continuous operation

- - - Release or starting torque = short-time torque

Max_N Max. permissible torque in continuous operation, all running times

Max_B Max. permissible release or starting torque, all running times

Appropriate running time for 90°/130° *

1) At 60 Hz, the running times are approx. 17% shorter. The torques are appropriately reduced.

Each drive side is capable of delivering the maximum torque, but the total torque of both drive shafts must not exceed the maximum permissible torque.

Connection Terminals

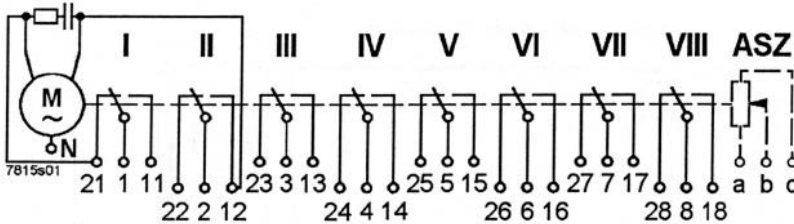


Diagram shows the maximum number of switches, that is, 2 limit and 6 auxiliary switches.

Variants with less than 6 auxiliary switches do not use the switches with the higher numbers.

For example, the variant with 2 limit and 2 auxiliary switches does not use switches V, VI, VII and VIII.

Direction of Rotation

By exchanging the two connecting cables, the actuator's direction of rotation can be changed from anticlockwise to clockwise, or vice versa.

