A further milestone on the way to success: ASF112/113

7 Nm damper drive with emergency function

THE NEW WORLD OF ACTUATORS

Damper drive
ASF112/ASF113

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1 Strategy and main objectives

Sauter is a successful supplier of complete ranges of drives. For this reason, the existing range of spring-return damper drives is to be completed with the introduction of the 7 Nm family. With the trend towards incorporating safety functions in dampers and drives, we take the damper drives with fail-safe function into account.

With the clear aim of winning a greater share of the market, the following information is designed to help you during the market launch. We explain the main selling points where we contrast strongly with our competitor *Belimo*. We are convinced that we can round off the family of damper drives with the introduction of the 7 Nm spring-return (SR) drive.

Main objectives for this range

- To provide a complete and competitive range.
- To win a greater share of the market in the damper drives segment with fail-safe function.
- To achieve sales of at least 20,000 damper drives with emergency function by the end of 2004.
- **Core strength: damper drives**
  How can we best round off our provision of products and services to our advantage.

The clientele can be expanded in the following segments:

- System houses
  Servicing contractors and providers of facility management
- Consultants
  Overall solution for HVAC with safety concept
- OEM: Full range of HVAC drives
  Air-handling units
  Compact air-conditioning centres
- Plant manufacturers and installing companies

2 Technology and selling points

Sauter's range of damper drives

Range of damper drives	**with safety function** fail-safe function (spring return)	**7 Nm**	**2-point**	**ASF112 F120** **ASF112 F220** **ASF112 F122** **ASF112 F222**	**with auxiliary switch** **with auxiliary switch**
			3-point	**ASF113 F122**	
			0...10 V d.c.	**ASF113S F122**	**24 V a.c.**
		16 Nm	**2-point**	**ASF122 F120** **ASF122 F220** **ASF121 F122** **ASF122 F222**	**with auxiliary switch** **with auxiliary switch**
			3-point	**ASF123 F122**	
			0...10 V d.c.	**ASF123S F122**	
	without safety function	**5 Nm**	**3-point**	**ASM104 F120** **ASM104 F122**	**Modules available** ➢ Auxiliary-switch module ➢ LON module (mid-2003)
			SUT	**ASM104S F132**	
		10 Nm	**3-point**	**ASM114 F120** **ASM114 F122**	
			SUT	**ASM114S F132**	
		15 Nm	**3-point**	**ASM124 F130** **ASM124 F132**	
			SUT	**ASM124S F132**	
		30 Nm	**3-point**	**ASM134 F130**	
			SUT	**ASM134S F132**	

Accessories

The following accessories are available:

0372245 001	Universal lever
0372245 002	Rotary/linear mounting kit for use when fitting to floors or walls

For more accessories, please contact the Sales Support Dept. at SBA.

Technical features

Torque:	7 Nm
Angle of rotation:	Up to 90°
Running time:	Motor: 90 s Closing: emergency function 15 s
Adapter:	Self-centring (6.4…20.5 mm Ø)
Motor:	Brushless DC motor
Degree of protection:	IP 54 Electric overload protection
Approbation:	CE, C-UL & C-Tick
Miscellaneous:	Manual adjustment. Can be fitted both ways.

Technology and description of operation

Simple to fit: one bolt suffices

The drives are affixed with just one bolt. The robust ASF drives are equipped with a self-centring spindle adaptor. This can be inserted from both sides into the clamp, which has the advantage that the drive can also be easily fixed to short spindles. Thanks to this method of affixing, the drive does not move in the longitudinal holder. Frictional and cracking noises do not occur.

Characteristic function of the ASF113 S..

The angle of rotation is proportional to the control signal. With the U0 potentiometer, the starting point can be set between 0 and 5 V d.c. and, with the dU potentiometer, the working range can be set between 2 and 30 V d.c. The max. permissible input voltage (Uo + dU) is 35 V d.c.

Drives with this function can be used e.g. for the following applications:

- Dampers with a limited angle of rotation can be activated e.g. between 0...45° with the full control signal 0...10 V d.c.
- As a sequential regulating unit in control loops which have only a 0...10 V d.c. control signal for activating more than one sequence.
- In control systems with a control signal other than 0...10 V d.c., such as 2...10 V d.c. or 0...35 V d.c.

Selling points for the ASF (SR) damper drive

Compact:	Can be fitted where space is at a premium
Self-centring adaptor:	A service-friendly solution: the length of the spindle is irrelevant and it can be fitted either way round. The centrally-fixed spindle minimises unbalance.
Alternating/direct current:	Runs perfectly with 24 V a.c./d.c. +/- 20%
Power consumption:	An energy saver: very low power consumption
Torque-overload fuse:	The drive is protected against jammed or defective dampers
Brushless DC motor:	Energy-saving motor; runs quietly
Housing of cast aluminium:	Durable design protects against environmental effects
Mechanical emergency function:	Guaranteed closing mechanism in the event of a power failure
Torque-overload protection:	Protects the motor against overloads; guarantees a longer serviceable life for the drive

3 Applications

The rotary drives with spring return are used in ventilation and air-conditioning systems to activate air dampers and butterfly valves:

- For damper areas of up to approx. 1.5 m, depending on smoothness of operation.
- In ventilation sections in which the drive has to move to an emergency position in the event of a power failure.
- For connecting to two-point, three-point, or continuous controllers.

The ASF113 can be used as a:

- fresh-air damper
- mixing-box damper
- return-air damper
- zone shut-off damper

4 Size of market, Sauter's position and competitors

Positioning: Belimo can be directly replaced (LF ↔ ASF)

			Belimo	Fr. Sauter Ltd.
			4 Nm	7 Nm
2-point	230 V a.c. 24 V a.c.	---------- with auxiliary switch ---------- with auxiliary switch	LF230 LF230-S LF24 LF24-S	ASF112 F120 ASF112 F220 ASF112 F122 ASF112 F222
3-point	24 V a.c.	----------	LF24-3	ASF113 F122
0...10 V d.c.	24 V a.c.	----------	LF24-SR	ASF113S F122

A comparison with Belimo's LF

Design:	Ours is more compact.
Torque:	Belimo's LF has a torque of only 4 Nm.
Running time:	At 90 sec, the running time in operation is much faster compared to the LF (150 s).
Spindle adaptor:	Fixed with only one bolt. Dimensions from 6.4 mm to 20.5 mm (LF: 8-16 mm)
Torque-overload fuse:	The drive is protected against jammed or defective dampers.
Characteristic setting:	The following can be set: • Zero point and P-band • 0…35 V d.c.

5 References

Drives have to be tested specially for mechanical strength and serviceable life. Mechanical strength is calculated on the critical elements and compared with the effective loading. Then, in an endurance test, we find out whether the theoretical values will fulfil the life expectancy in practice. A drive attains at least 50,000 cycles (one cycle has been completed when the drive has fully opened and then fully closed again). In normal operation, this corresponds to an average serviceable life of 7 years. In practice, however, the maximum torque or force is never expended; furthermore, the environmental conditions (temperature, humidity) are not typically found at the limits of our specifications.

In order to estimate the life expectancy before the product is used in the field, tests on assemblies and on the whole product were carried out under controlled load and environmental conditions.

6 Service

The damper drives need no maintenance. Repairs should be carried out only at the factory. The drives should be sent back to Basle if repairs are needed.

7 Documentation

The following documents are available for the market launch:

PDS for ASF112/ASF113 damper drive	51.033
PDS for ASF113S damper drive	51.034
A complete family with a high level of intelligence	70010040001 P9

Meyer Urs
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