

CRM_C

Installation – Commissioning – Maintenance

20180327

Accessories

Actuator:

Sauter ASM115SK005, ASM124SK002, 24 V AC, standard actuators depending on size.

Other actuators must be ordered, see actuator table page 3.

Wiring diagrams are displayed on pages 2 to 3.

Knob:

CRTT-1 for manual control.

Quick connection:

FSR. Clamp with quick-acting lock.

Installation

Damper is inserted into the connecting duct and fixed in position by pop rivets or by means of an FSR clamp. See Figures 1 and 2.

Commissioning

Connect hoses from a manometer to the measurement nipples. Turn and lock the damper blade at the desired setting angle. For particulars of motorised control, we refer to the actuator supplier's instructions. K-factors are shown on the product's identification label. The K-factor can also be found in the table, page 4.

Maintenance

Clean the damper whenever needed by means of a vacuum-cleaner or by wiping surfaces with a cloth.

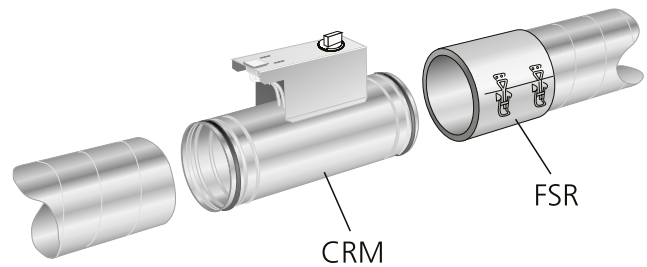


Figure 1. Installation.

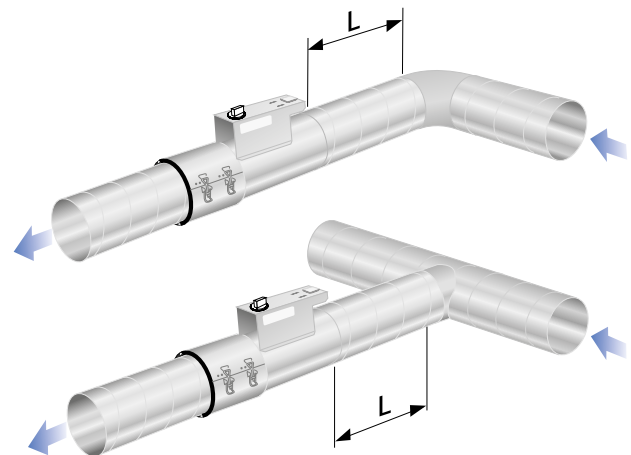


Figure 2. Straight duct length demands, see table below.

Methodic Errors

Type of obstruction upstream of the CRM	Length of straight duct (L) upstream of the CRM	
	For $m_2 = 5\%$	For $m_2 = 10\%$
One 90° bend.	3 x Ød	2 x Ød
Two 90° bends in the same plane.	4 x Ød	2 x Ød
Two 90° bends in alignment at right angles to one another.	4 x Ød	2 x Ød
One 45° damper.	6 x Ød	3 x Ød
One T-piece.	4 x Ød	3 x Ød

m_2 = methodic error B22, Building Research Council document "Methods for the Measurement of Airflows in Ventilation Installations"

Installation of accessories

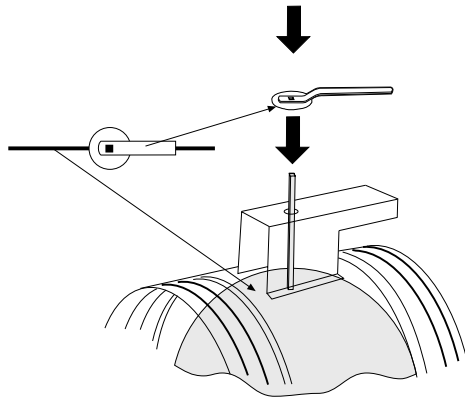


Figure 3. Installation, handle CRTT-1

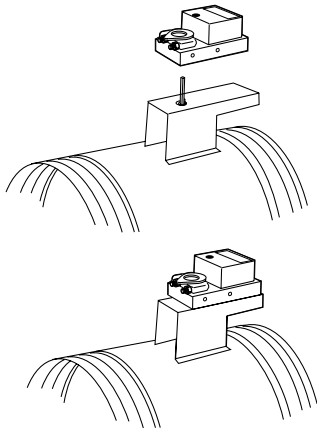


Figure 4. Installation, actuator size 100-400.

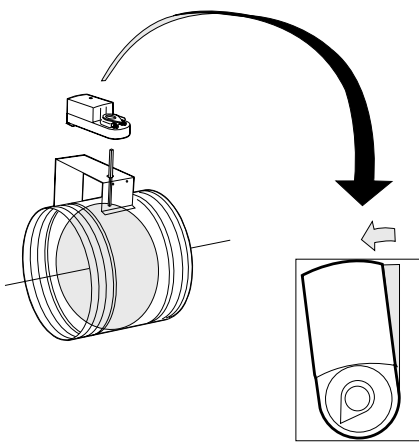


Figure 5. Installation of actuator CRM 5, size 500 and 630. First, close the damper entirely, then install the actuator exactly straight and lock it against the damper shaft. Turn the actuator 5° past closed setting and lock the position of the actuator.

Wiring diagrams

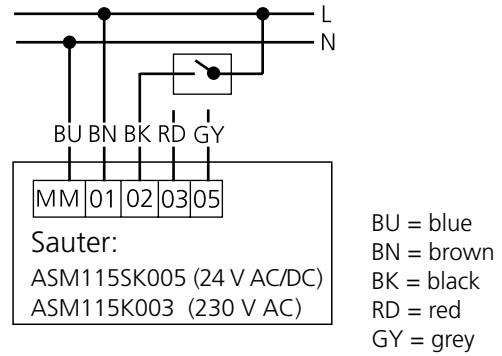


Figure 6. Wiring diagram for Sauter, 2 point regulation.

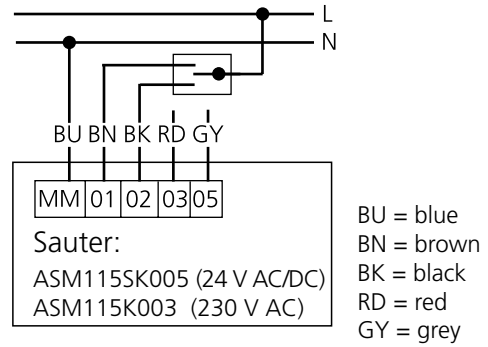


Figure 7. Wiring diagram for Sauter, 3 point regulation.

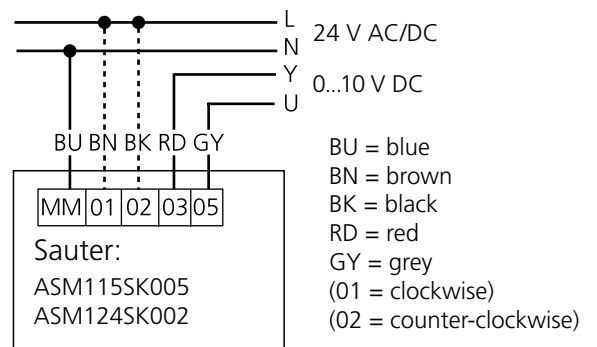


Figure 8. Wiring diagram for Sauter, 0-10 V stepless/modulating regulation.

Actuator tables

- Actuators: Sauter 24 V AC, ASM115SK005 and ASM124SK002 are standard and kept in stock.
- All other actuators are order items.

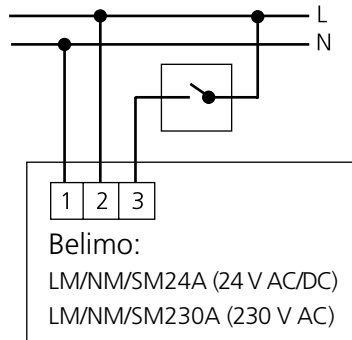


Figure 9. Wiring diagram for Belimo, 2 point regulation.

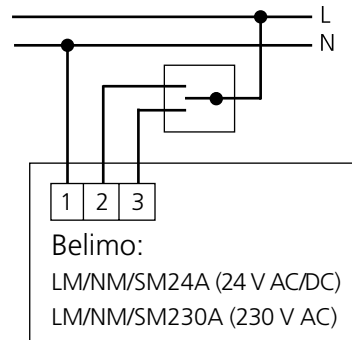


Figure 10. Wiring diagram for Belimo, 3 point regulation.

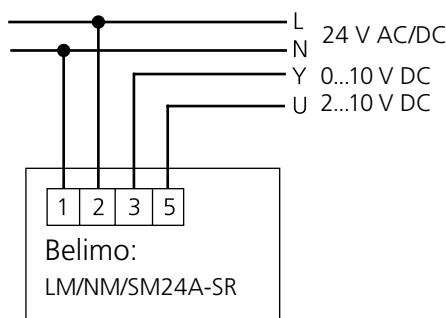


Figure 11. Wiring diagram for Belimo, 0-10 V stepless/modulating regulation.

2 or 3 point regulation – 24 V AC

Variant	Size	Torque	Designation	
			Sauter	Belimo
CRM 1	100-315	5 Nm	ASM115SK005	LM24A
	400-630	10 Nm	ASM115SK005	NM24A
CRM 5	100-250	5 Nm	ASM115SK005	LM24A
	315-400	10 Nm	ASM115SK005	NM24A
	500-630	15 Nm	ASM124SK002	SM24A

2 or 3 point regulation – 230 V AC

Variant	Size	Torque	Designation	
			Sauter	Belimo
CRM 1	100-315	5 Nm	ASM115K003	LM230A
	400-630	10 Nm	ASM115K003	NM230A
CRM 5	100-250	5 Nm	ASM115K003	LM230A
	315-400	10 Nm	ASM115K003	NM230A
	500-630	15 Nm	–	SM230A

0-10 V stepless/modulating regulation – 24 V AC

Variant	Size	Torque	Designation	
			Sauter	Belimo
CRM 1	100-315	5 Nm	ASM115SK005	LM24A-SR
	400-630	10 Nm	ASM115SK005	NM24A-SR
CRM 5	100-250	5 Nm	ASM115SK005	LM24A-SR
	315-400	10 Nm	ASM115SK005	NM24A-SR
	500-630	15 Nm	ASM124SK002	SM24A-SR

Electrical data

Actuators – Supply voltage 24 V AC

Make / Model	Ambient temp.	Power consumption
Sauter AS115SK005	-20...+55°C	8.7 VA
Sauter ASM124SK002	-20...+55°C	4.4 VA
Belimo LM24A / -SR	-30...+55°C	2.0 VA
Belimo NM24A / -SR	-30...+55°C	3.5 VA
Belimo SM24A / -SR	-30...+55°C	4.0 VA

Actuators – Supply voltage 230 V AC

Make / Model	Ambient temp.	Power consumption
Sauter ASM115K003	-20...+55°C	4.0 VA
Belimo LM230A	-30...+55°C	4.0 VA
Belimo NM230A	-30...+55°C	6.0 VA
Belimo SM230A	-30...+55°C	6.5 VA

Dimensions, weights and K factor (COP)

Size ØD (mm)	Dimensions (mm)			Weight (Kg)	Torque*) (Nm)		K factor**)
	A	B	H		CRM 1	CRM 5	
100	305	45	70	0.8	<3	<3	9.2
125	356	45	70	1.0	<3	<3	9.6
160	356	45	75	1.3	<3	<3	15.8
200	372	45	75	1.6	<3	4	23.5
250	452	45	75	2.1	<4	5	35.6
315	538	45	75	3.0	<4	6	59.2
400	582	57	80	5.0	<4	8	95.6
500	660	57	80	9.0	<8	12	147.0
630	735	57	80	13.0	<8	15	230.0

*)The torque moment in the table refers to the force that must be applied in order to fully close the damper.

***)Number of measuring tubes: 2

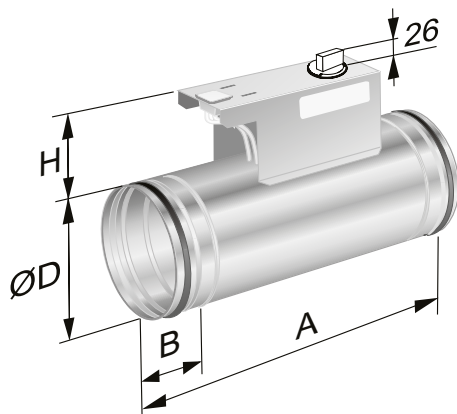


Figure 12. Dimensions (mm), CRM without actuator.

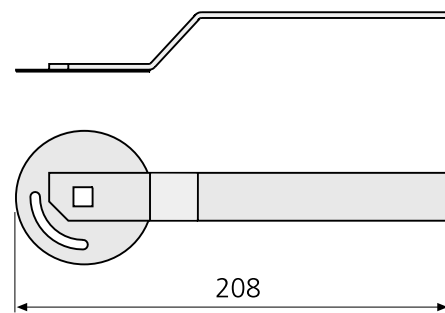


Figure 14. Dimensions (mm), CRTT-1 knob.

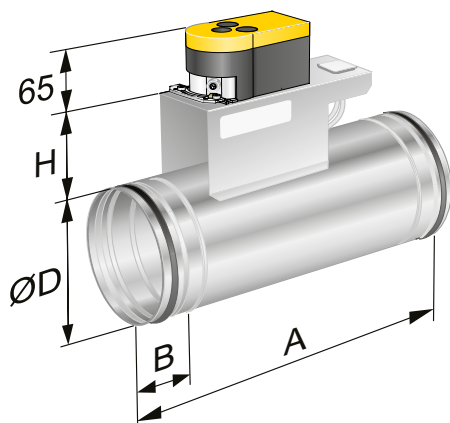


Figure 13. Dimensions (mm), CRM with actuator.