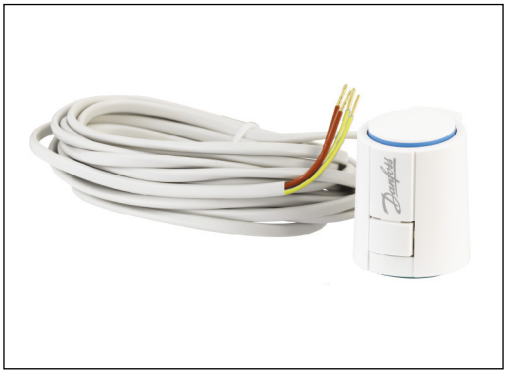
Data Sheet

ABRA-A5 Electric Thermal Actuator, ON/OFF

For Use with RA2000 Valves

Application



The ABRA-A5 ON/OFF zone valve actuator has been specifically designed for use with Danfoss RA2000, RA-C, and RA15/6 series of valves used for heating and cooling applications. Additional base adapters are offered for the potential use of the ABRA-A5 to other non-Danfoss valve bodies.

Features include:

- 4.0mm stem travel
- Normally closed (NC) actuator without power
- Low power consumption 1 W
- Actuator installed in any orientation
- Position indicator
- Silent operation

Function

The actuator mechanism of the ABRA-A5 actuator uses a heated wax element and positive temperature coefficient (PTC) resistor to allow the actuator to open. On the call for heat the wax element is heated by the resistor and the valve begins to open.

First open function
In its delivery condition, the ABRA-A5 is partially open, 50%, to assist in the mounting of the actuator and filling of the system. Until the actuator is energized, the actuator is partially open. When power is wired to the actuator the first open function is unlocked and by applying the operating voltage for more than 6 minutes the ABRA-A5 will then be completely operable.

NC "normally closed"
Without power or signal to the actuator its position is fully closed. Only when power is supplied will the actuator open. When power is removed the actuator closes in the same steady rate by the closing force of the compression spring. The closing force and travel of the actuator matches the valve and keeps the valve closed when de-energized.

End switch
The integrated micro switch (end switch) closes at approximately 2mm or 50% of actuator travel from closed position. From full open when the operating voltage is removed, the micro switch closes at approximately 2mm or at 50% closing.

Position Indication
The position indicator of the ABRA-A5 is located on the top of the actuator. This visual position feedback allows identifying the operating condition (valve open or closed) at a glance.

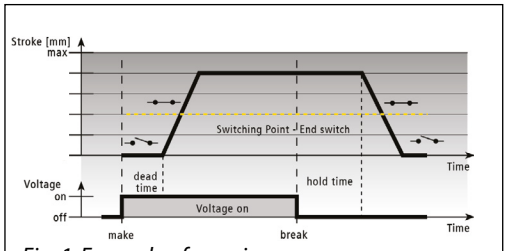


Fig. 1: Example of opening curve

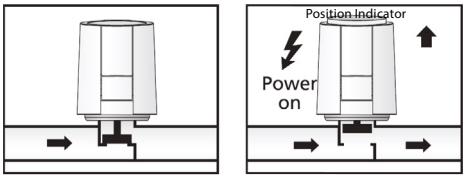


Fig. 2: Valve position indication

Ordering

Code no.	Type	Supply voltage	Actuator Position w/o Power	Cable	End Switch
082F1110	ABRA-A5, ON/OFF with RA2000 adapter	24 VAC/DC	Normally Closed (NC)	Pre-wired, 3 ft (1 m)	Yes

Zone Valve Packs

ABRA-A5 Basic & Deluxe (For use with hot and chilled water applications)

Code No.	Model	Connection			Description
		Size	Type	Cv	
ABRA54200	**ABRA-A5 Basic**	**1/2"**	**Solder**	**1.6**	082F1110 actuator and RA2000 valve. 013G8042 -1/2" double solder union valve.
ABRA54400		**3/4"**		**2.7**	082F1110 actuator and RA2000 valve. 013G8044 -3/4" double solder union valve.
ABRA542RET2	**ABRA-A5 Deluxe**	**1/2"**	**Solder**	**1.6**	082F1110 actuator and RA2000 valve. 013G8042 -1/2" double solder union valve, and 087N6441NA RET2000B thermostat.
ABRA544RET2		**3/4"**		**2.7**	082F1110 actuator and RA2000 valve. 013G8044 -3/4" double solder union valve, and 087N6441NA RET2000B thermostat.

Spare Parts

Additional Base Adapters

Code No.	Description
VA33	Uponor manifold
VA50H	Honeywell Braukmann (except 110 Series)
VA54H	MMA, Macon
VA64	RTI (Pettinaroli) manifold
VA78	Danfoss RA2000
VA80H	Heimeier, Overtrop (since 1997), TACO (Alpha actuator, since 2005), Embassy manifold

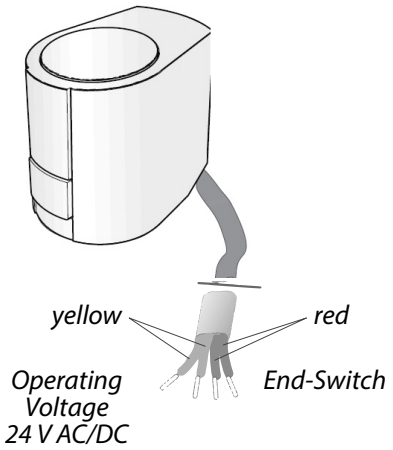
Technical Information

Suitable applications	Chilled or hot water applications
Version	Normally Closed w/ micro switch
Voltage	24 V AC/DC, +20%...-10%, 0-60 Hz
Max. inrush current	< 300 mA during max. 2 min.
Operating power	1 W
Control voltage	On/Off
Actuator travel	4 mm
Linear actuator force	22.5 lbf (100 N)
Closing and opening time	~4 min.
Fluid temperature	32 to 212°F (0 to 100°C)
Storage temperature	-13 to 149°F (-25 to 65°C)
Ambient temperature	32 to 140°F (0 to 60°C)
Degree/class of protection	NEMA 3
CE conformity according to	EN60730, UL60730
Housing/housing colour	Polyamid/White RAL9003

Technical Information Continued

Connecting cable	PVC, 19AWG wire, 2 pair
Adapter (included)	VA 78
Voltage spike	min. 2.5 kV
Micro switch	max. 24V AC/DC, 0.5 A
Weight	0.22lb (0.1 kg)

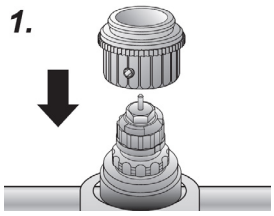
Connections



Installation

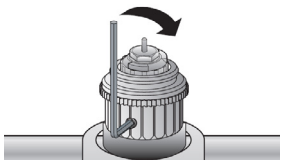
Installation with valve adapter

1.



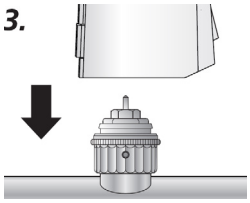
Place base adapter onto the valve body.

2.



While fully seating the adapter to the valve tighten the adapter with a 2mm Allen key to the valve.

3.



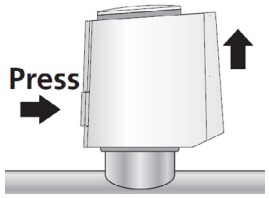
Align the actuator over the adapter and push the actuator down.

4.

The actuator snaps onto the base adapter with a “click” when pressed down.

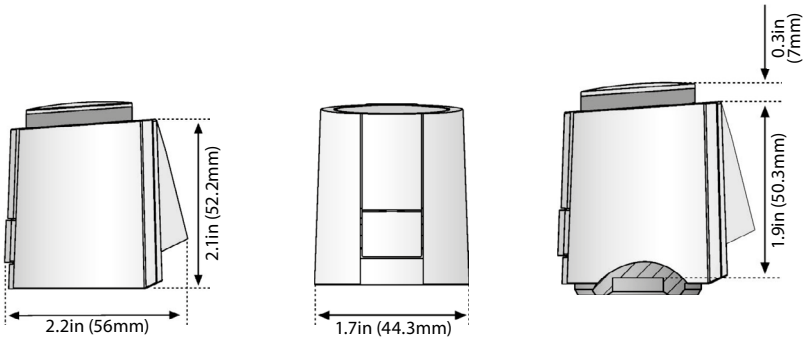
The ABRA A5 is not recommended for use on a low-pressure steam system. The increase surface and ambient air temperatures and potential installation within an enclosure will lead to a partially opened actuator resulting in overheating.

Removal



Press the front button of the actuator and lift it from the adapter base. When the actuator is off the base adapter the valve will be in a full open position.

Dimensions



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