

Butterfly valve BV.. Actuator with butterfly valve IB..

OPERATING INSTRUCTIONS

· Edition 06.26 · EN · 03251438



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1 SAFETY

1.1 Read the operating instructions before use



Please read through these instructions carefully before installing or operating. Following the installation, pass the instructions on to the operator. This unit must be installed and commissioned in accordance with the regulations and standards in force. These instructions can also be found at www.docuthek.com.

1.2 Explanation of symbols

1, 2, 3, a, b, c = Action

→ = Instruction

1.3 Liability

We will not be held liable for damage resulting from non-observance of the instructions and non-compliant use.

1.4 Safety instructions

Information that is relevant for safety is indicated in the instructions as follows:

⚠ DANGER

Indicates potentially fatal situations.

⚠ WARNING

Indicates possible danger to life and limb.

⚠ CAUTION

Indicates possible material damage.

All interventions may only be carried out by qualified gas technicians. Electrical interventions may only be carried out by qualified electricians.

1.5 Conversion, spare parts

All technical changes are prohibited. Only use OEM spare parts.

2 CHECKING THE USAGE

2.1 Intended use

BVG, BVGF, BVA, BVAF, BVH, BVHS, BVHR

The butterfly valves are designed to adjust volumes of gas, cold and hot air and flue gas on gas and air appliances and flue gas lines. They are designed for a control ratio of up to 10:1. Actuator IC and butterfly valve BV.. (IB..) are suitable for regulating flow

rates for modulating-controlled or stage-controlled combustion processes.
 This function is only guaranteed when used within the specified limits – see page 6 (8 Technical data). Any other use is considered as non-compliant.

2.2 Type code BVA, BVG

BVG	Butterfly valve for gas
BVA	Butterfly valve for air
F	Clearance-free
40-150	Nominal size
/25-/125	Reduced to nominal size
Z	For fitting between two EN flanges
W¹⁾	For fitting between two ANSI flanges
05	p_u max. 500 mbar (50 kPa) (7.25 psi), Δp max. 150 mbar (15 kPa) (2.18 psi)
H	With manual adjustment
F	With free shaft end
V	With square shaft

1) BVG..W, BVGF..W: nominal sizes DN 40 to 100
 available with ANSI flange and reduced to /25 to /80

2.3 Type code BVH

BVH	Butterfly valve for air and flue gas
BVHS¹⁾	Like BVH, but with additional emergency closing function
BVHR	Like BVH, for medium temperatures of up to 550°C
40-100	Nominal size
Z	For fitting between two EN flanges
W	For fitting between two ANSI flanges
01	p_u max. 150 mbar (15 kPa) (2.18 psi)
A	With stop

1) BVHS can only be combined with IC 40S

2.3.1 Emergency closing function

The emergency closing function closes butterfly valve BVHS if the voltage fails.

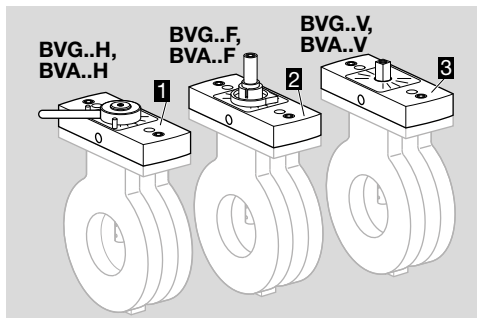
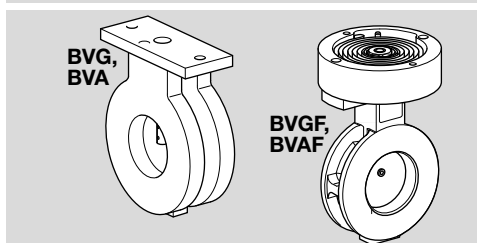
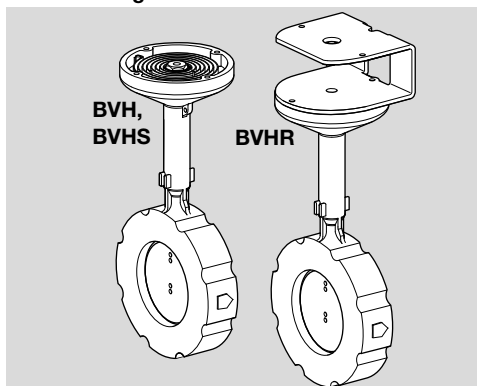
CAUTION

Please observe the following to ensure that no damage occurs:

The emergency closing function on the BVHS should be used only for the intended function.

If the emergency closing function is used for controlled shut-down or for intermittent switching of the burner, this will reduce the service life of the butterfly valve.

2.4 Part designations

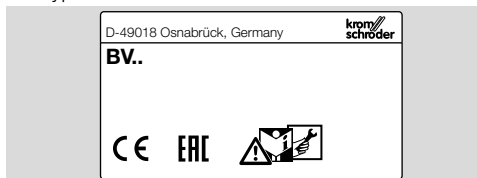


- 1 Adapter set with manual adjustment
- 2 Adapter set with free shaft end
- 3 Adapter set with square shaft

2.5 Type label

BV..

Gas type, inlet pressure and ambient temperature, see type label.



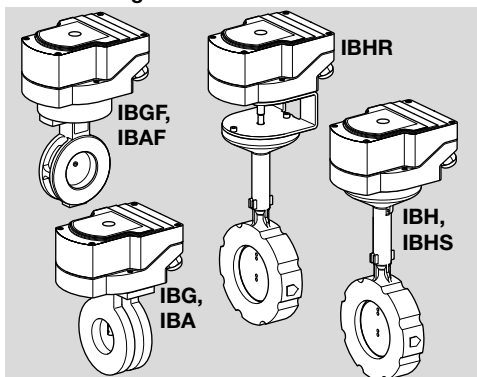
2.6 Type code IB..

IBG	Actuator IC 20 or IC 40 + BVG
IBGF	Actuator IC 20 or IC 40 + BVGF
IBA	Actuator IC 20 or IC 40 + BVA
IBAF	Actuator IC 20 or IC 40 + BVAF
IBH¹⁾	Actuator IC 20 or IC 40 + BVH
IBHR¹⁾	Actuator IC 20 or IC 40 + BVHR
IBHS¹⁾	Actuator IC 20 or IC 40 + BVHS
40-150	BVG.., BVA.. nominal size
40-100	BVH.. nominal size
/25-/125	Reduced to nominal size
Z	For fitting between two EN flanges
W²⁾	For fitting between two ANSI flanges
01	BVH...: p _u max. 150 mbar (15 kPa) (2.18 psi)
05	BVG..., BVA...: p _u max. 500 mbar (50 kPa) (7.25 psi)
A	BVH...: with stop bar
/20	Actuator IC 20
/40	Actuator IC 40
-07	Running time (at 50 Hz): 7.5 s
-15	Running time (at 50 Hz): 15 s
-30	Running time (at 50 Hz): 30 s
-60	Running time (at 50 Hz): 60 s
W	Mains voltage 230 V AC, 50/60 Hz
Q	Mains voltage 120 V AC, 50/60 Hz
A	Mains voltage 120-230 V AC, 50/60 Hz
2	Torque 2.5 Nm
3	Torque 3 Nm
E	Continuous control
T	Three-point step control
A	4-20 mA analogue input and digital input
D	Digital input
R10	With 1000 Ω feedback potentiometer

1) IBH.. available up to nominal size DN 100

2) IBG..W, IBGF..W: nominal sizes DN 40 to 100 available with ANSI flange and reduced to /25 to /80

2.7 Part designations



Further information can be found in the operating instructions for actuators IC.. at www.docuthek.com.

3 INSTALLATION

⚠ CAUTION

Incorrect installation

Please observe the following to ensure that the unit is not damaged during installation and operation:

- Avoid pressure surges and temperature shocks.
- Dropping the device can cause permanent damage. In this event, replace the entire device and associated modules before use.
- Sealing material and dirt, e.g. thread cuttings, must not be allowed to get into the unit.
- Flange sealing surfaces must not be damaged by mechanical or other effects.
- If the actuator is retrofitted, the torque, direction of rotation and adjustment angles must be adjusted to the butterfly valve.
- A filter must be installed upstream of every system.

→ The butterfly valve is intended to be installed in-between two flanges.

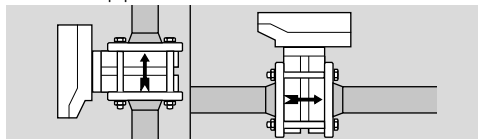
→ Install the unit in the pipe free of mechanical stress.

→ The length of the inlet and outlet section should be 2 x DN.

3.1 Installation position

The actuator must be installed in the vertical or horizontal position, not upside down.

BVHR/IBHR: always position the actuator to the side of the pipe.

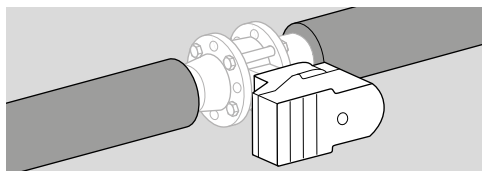


We recommend installing the butterfly valve in the vertical position with the direction of flow from bottom to top in order to prevent condensation and to prevent dirt from accumulating on the stop bar in the case of butterfly valves with stop bar (BVH..A).

3.2 Hot air as a medium

→ If the valve is used with hot air, the pipe should be adequately insulated so as to reduce the ambient temperature. The flanges and the butterfly valve must be kept free of insulating material. Ensure that there is sufficient installation space around the flanges to access the screw connectors.

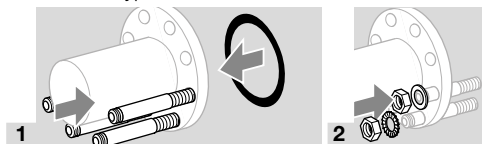
→ For a better dissipation of heat, turn the butterfly valve when installing so that the actuator is positioned to the side of the pipe. This also avoids that rising hot air circulates around the actuator.



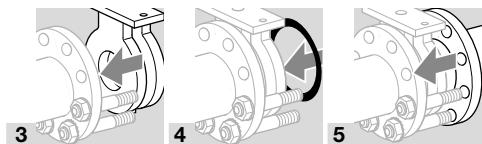
- Check the temperature resistance of the seals.
- Use heat deflectors for a medium temperature of > 250°C, see accessories.

3.3 Installing the butterfly valve in the pipe

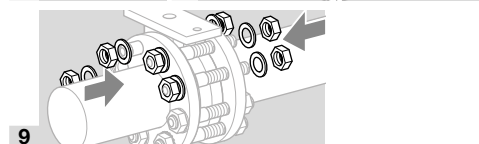
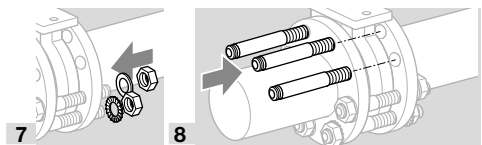
The pictures below may not correspond to the actual valve type.



- Ensure that both serrated lock washers are fitted to the same screw.
- Install the butterfly valve in the pipe free of mechanical stress.



- 6 Centre the butterfly valve. Ensure that the valve disc can move unobstructed.



- If the butterfly valve is to be used without an actuator, an adapter set with manual adjustment is available, see accessories.

3.4 Mounting the actuator to BVA, BVG

- If the butterfly valve BVA, BVG is to be mounted to an actuator other than an IC 20/IC 40, an adapter set will be available, see accessories.
- For further information on assembly of butterfly valve BVA, BVG with actuator IC 30/IC 50, see accessories or Actuator IC.. operating instructions at www.docu.thek.com.

Mounting the actuator IC 20/IC 40 to BVx

- If the actuator and butterfly valve are pre-assembled (IB..), the fastening set will already be fitted. If the actuator is retrofitted, the fastening set is

delivered enclosed as an additional item, see accessories.

- The actuator IC 20, IC 40 may be installed rotated by 180° on all butterfly valves.

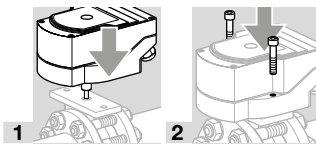
⚠ CAUTION

Incorrect installation

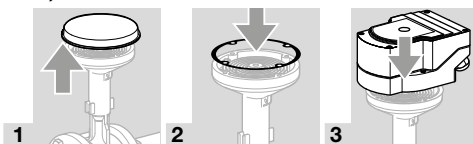
Please observe the following to ensure that the unit is not damaged during installation and operation:

- If the actuator is to be rotated by 180° following assembly to the butterfly valve, the actuator must be detached from the butterfly valve. Only turn the actuator. Otherwise, a change in the direction of rotation of the valve can lead to damage being caused to the mechanical and electronic components.

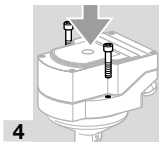
BVG, BVGF, BVA, BVAF



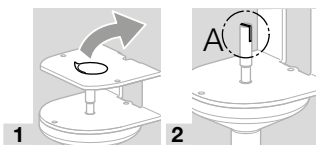
BVH, BVHS



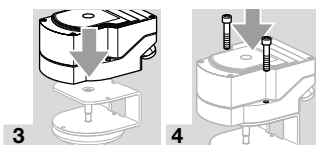
- Permitted installation position for IC: cable glands point to the inlet or outlet of the pipe.



BVHR

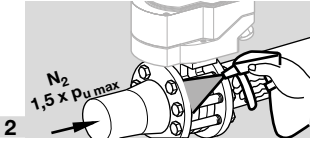


- Align the groove (A) parallel to the closed valve disc.

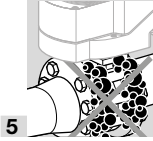
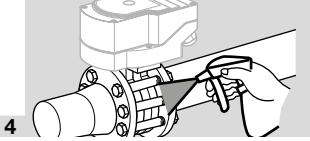


4 TIGHTNESS TEST

- 1 Close off the outlet of the butterfly valve with a blanking plate or close the gas solenoid valve downstream of the butterfly valve.



- 3 Open the butterfly valve.



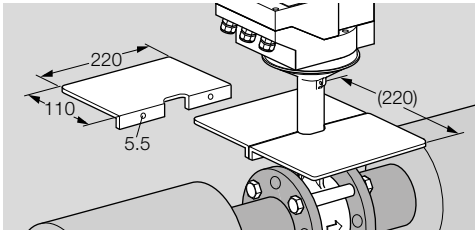
- 6 Once the tightness test has been successfully completed, remove the blanking plate or open the gas solenoid valve downstream of the butterfly valve.

5 COMMISSIONING

- The valve disc must open and close unobstructed.
- Purge the pipes thoroughly to remove any foreign particles from the system.
- For further information on commissioning the actuator, see enclosed Actuator IC 20/IC 30/IC 40 operating instructions or go to www.docuthek.com.

6 ACCESSORIES

6.1 Heat deflector

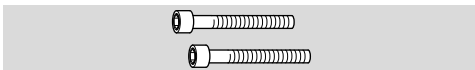


Install heat deflectors in order to protect the actuator from overheating if the medium temperature is $> 250^{\circ}\text{C}$ (482°F).

Order No.: 74921670

6.2 Fastening set

2 x M6 x 35 set screws, for retrofitting IC 20/IC 40 to butterfly valve BVG, BVA, BVH or linear flow control VFC.



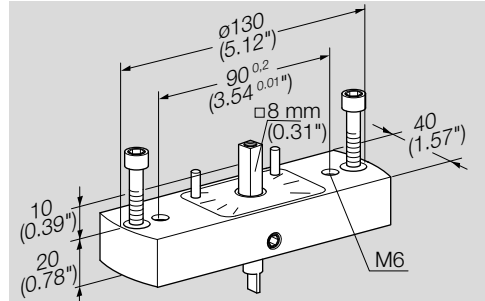
Order No.: 74921082

6.3 Adapter set for BVG, BVA

If the butterfly valve is to be installed without an actuator or with an actuator other than an IC, the following attachment sets can be used.

Adapter set with square shaft

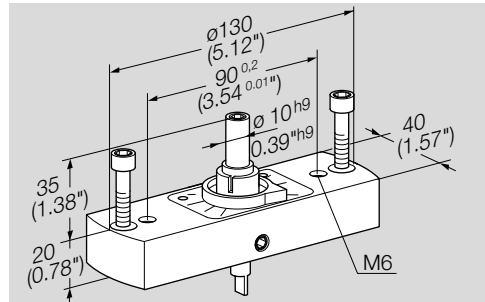
The actuator must have a square shaft end.



Order No.: 74921674, enclosed

Adapter set with free shaft end

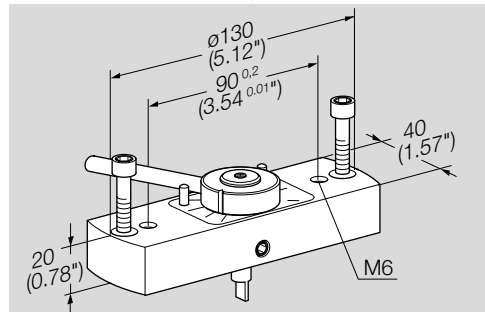
The actuator must have a $\varnothing 10$ mm socket.



Order No.: 74921676, enclosed

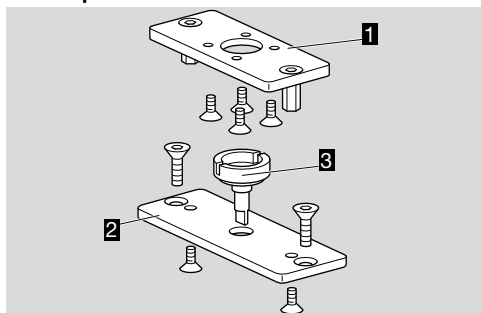
Adapter set with manual adjustment

The lever can be locked in position.



Order No.: 74921678, enclosed

6.4 Adapter set IC 30 for BVA/BVG



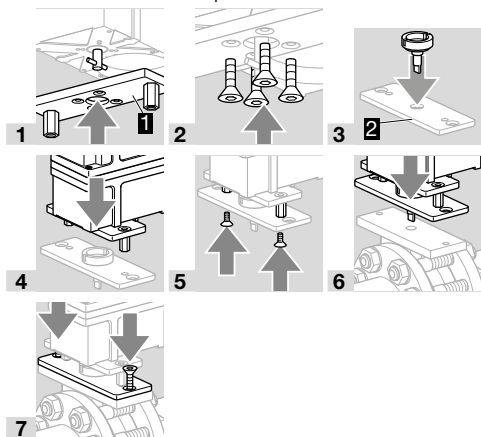
For the assembly of IC 30 and BVA, BVG.

Adapter set IC 30/BVA/BVG, Order No.: 74924996.

- 1 Adapter set IC 30
- 2 Adapter plate BVA/BVG
- 3 Coupling

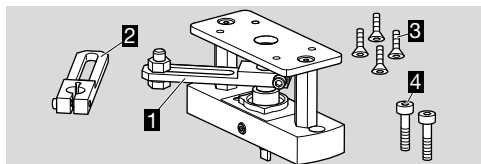
6.4.1 Assembling and fitting the adapter set

→ The actuator can be turned through 180° to be installed on the adapter set.



6.5 Adapter set IC 50 for BVA/BVG

An adapter set can be supplied for the assembly of BVA/BVG and IC 50.



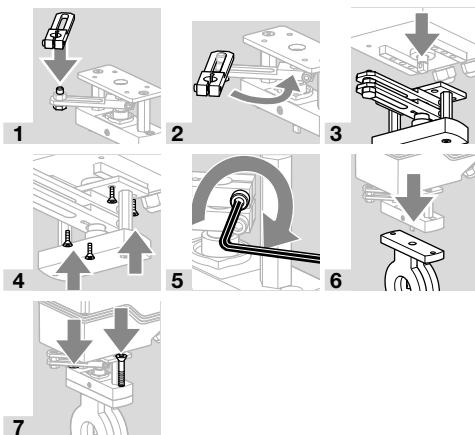
Order No.: 74926243

- 1 Adapter set IC 50
- 2 Top oblong-hole lever for actuator IC 50
- 3 4 x M5 countersunk screws
- 4 2 x M6 set screws

6.5.1 Assembling and fitting the adapter set

→ The actuator can be turned through 180° to be installed on the adapter set.

→ Ensure that the connection cables are laid outside the levers' range of motion.



7 MAINTENANCE

7.1 Maintenance

The butterfly valve requires little servicing.

We recommend a function check once a year.

BVG, BVGF: check for external tightness once a year.

If operated with biogas, a tightness test and function check must be carried out every six months.

8 TECHNICAL DATA

8.1 Ambient conditions

Icing, condensation and dew in and on the unit are not permitted.

Avoid direct sunlight or radiation from red-hot surfaces on the unit. Note the maximum medium and ambient temperatures!

Avoid corrosive influences, e.g. salty ambient air or SO₂.

The unit may only be stored/installed in enclosed rooms/buildings.

The unit is suitable for a maximum installation height of 2000 m AMSL.

Ambient temperature:

-20 to +60°C (-4 to +140°F).

BVG, BVGF: Long-term use in the upper ambient temperature range accelerates the ageing of the elastomer materials and reduces the service life (please contact manufacturer).

Transport temperature = ambient temperature.

Storage temperature: -20 to +40°C (-4 to +104°F).

This unit is not suitable for cleaning with a high-pressure cleaner and/or cleaning products.

8.2 Mechanical data

Gas type:

BVG, BVGF: natural gas, town gas, LPG, biogas (max. 0.1 %-by- vol. H₂S), hydrogen and other non-aggressive fuel gases.

BVA, BVAf: air.

BVH, BVHR, BVHM, BVHS: air and flue gas.

The gas must be clean and dry in all temperature conditions and must not contain condensate.

BVG, BVGF, BVA, BVAF

Housing material: AISI,
valve disc: aluminium,
drive shaft: stainless steel,
seals: HNBR.

Nominal size: DN 40–150,

reduction by 2 nominal sizes possible.

BVG, BVGF: nominal sizes DN 40 to 100 available with ANSI flange and reduced by 2 nominal sizes.

Inlet pressure p_{i1} : max. 500 mbar (50 kPa) (7.25 psi).

Medium temperature = ambient temperature.

BVH, BVHR, BVHM, BVHS

Housing material: GGG,
valve disc: stainless steel,
drive shaft: stainless steel.

Nominal size DN 40 to 100.

Inlet pressure p_{i1} : max. 150 mbar (15 kPa) (2.18 psi).

Pressure differential between inlet pressure p_u and outlet pressure p_d : max. 150 mbar (15 kPa) (2.18 psi).

Medium temperature: BVH: -20 to +450°C (-4 to +840°F),

BVHR: -20 to +550°C (-4 to +1020°F).

8.3 Technical data for actuators IC 20, IC 40

See the enclosed operating instructions or the operating instructions for actuators IC.. at www.docuthek.com

9 LOGISTICS

Transport

Protect the unit from external forces (blows, shocks, vibration).

Transport temperature: see page 6 (8 Technical data).

Transport is subject to the ambient conditions described.

Report any transport damage on the unit or packaging without delay.

Check that the delivery is complete.

Storage

Storage temperature: see page 6 (8 Technical data).

Storage is subject to the ambient conditions described.

Storage time: 6 months in the original packaging before using for the first time. If stored for longer than this, the overall service life will be reduced by the corresponding amount of extra storage time.

Packaging

The packaging material is to be disposed of in accordance with local regulations.

Disposal

Components are to be disposed of separately in accordance with local regulations.

10 CERTIFICATION

10.1 Declaration of Conformity

**UK
CA**

As the manufacturer, we declare that the products BVG, BVGF, BVA and BVAF with the product ID number CE-0063BM1154 comply with the requirements of the legal regulations and standards listed below.

Directives:

- (EU) 2016/426 – Gas Appliance Regulation (GAR)
- 2011/65/EU – RoHS II
- (EU) 2015/863 – RoHS III

Standards:

- EN 161:2022

The relevant product conforms to the examined type. Manufacturing is subject to the surveillance procedure in accordance with Regulation (EU) 2016/426, Annex III, paragraph 3.

Elster GmbH

Scan of the Declaration of Conformity (D, GB) – see www.docuthek.com

10.2 UKCA certified

**UK
CA**

The products BVG, BVGF, BVA, and BVAF are UKCA certified for the market in Great Britain.

Directives:

- Gas Appliances (Product Safety and Metrology etc. (Amendment etc.) (EU Exit) Regulations 2019

Standards:

- BS EN 161:2011+A3:2013

The conformity assessment was carried out in accordance with Annex III, Module B (Type Examination) and Module D (Production Quality Assurance) by a UK Approved Body. The UK Declaration of Conformity is available at www.docuthek.kromschroeder.com.

10.3 Eurasian Customs Union

EAC

The products BV.. meet the technical specifications of the Eurasian Customs Union.

10.4 REACH Regulation

The device contains substances of very high concern which are listed in the Candidate List of the European REACH Regulation No. 1907/2006. See Reach list HTS at www.docuthek.com.

10.5 China RoHS

Directive on the restriction of the use of hazardous substances (RoHS) in China. Scan of the Disclosure Table China RoHS2, see certificates at www.docuthek.com.

FOR MORE INFORMATION

The Honeywell Thermal Solutions family of products includes Honeywell Combustion Safety, Eclipse, Exothermics, Hauck, Kromschroder and Maxon. To learn more about our products, visit ThermalSolutions.honeywell.com or contact your Honeywell Sales Engineer.

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