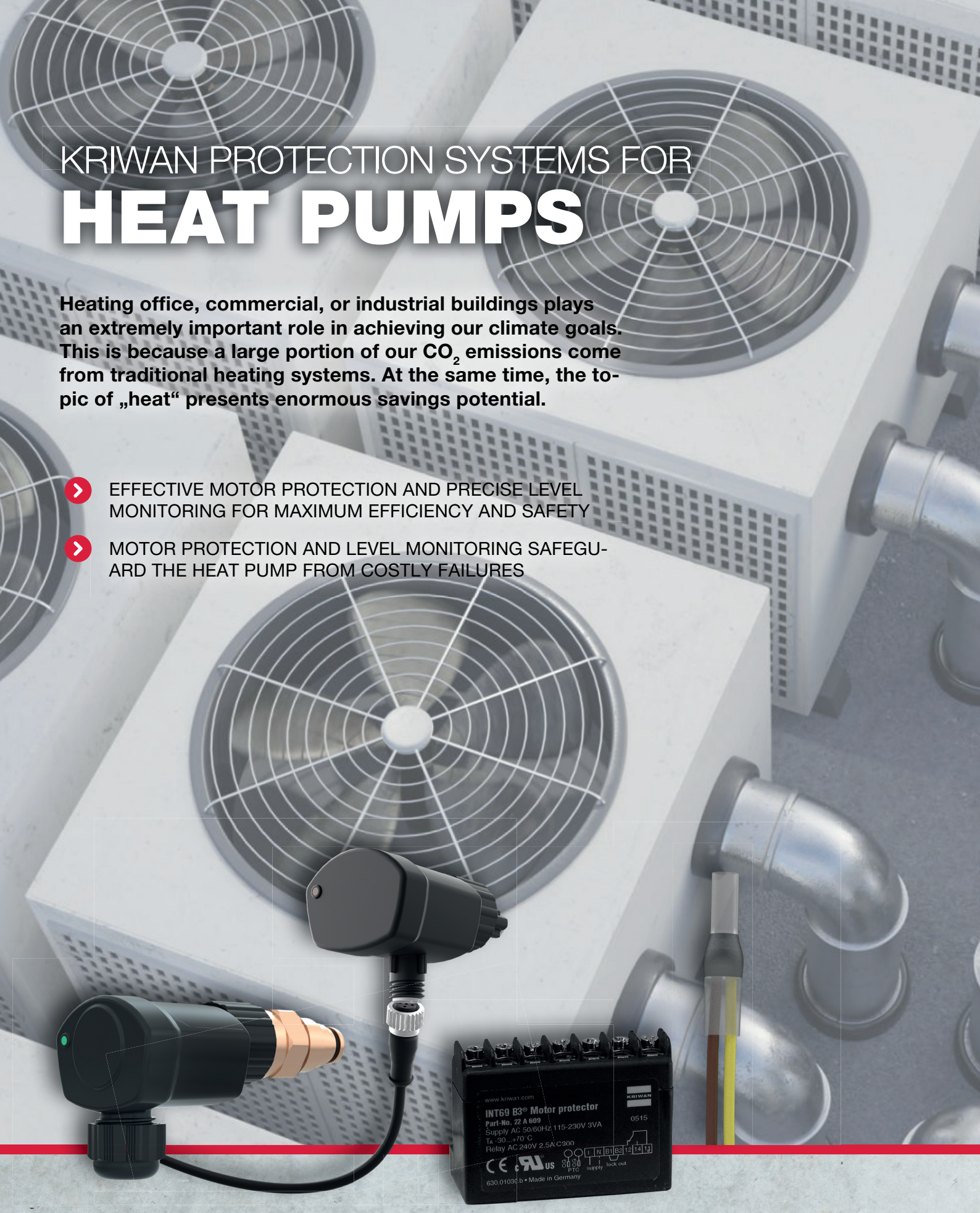
KRIWAN PROTECTION SYSTEMS FOR
HEAT PUMPS

Heating office, commercial, or industrial buildings plays an extremely important role in achieving our climate goals. This is because a large portion of our CO_2 emissions come from traditional heating systems. At the same time, the topic of „heat“ presents enormous savings potential.

- EFFECTIVE MOTOR PROTECTION AND PRECISE LEVEL MONITORING FOR MAXIMUM EFFICIENCY AND SAFETY
- MOTOR PROTECTION AND LEVEL MONITORING SAFEGUARD THE HEAT PUMP FROM COSTLY FAILURES



LEVEL SWITCHES
INT275 - INT279

TEMPERATURE SENSORS
PTC

OIL DIFFERENTIAL PRESSURE SWITCHES
DELTA-P II

MOTOR PROTECTION
INT69

KRIWAN

CHALLENGES

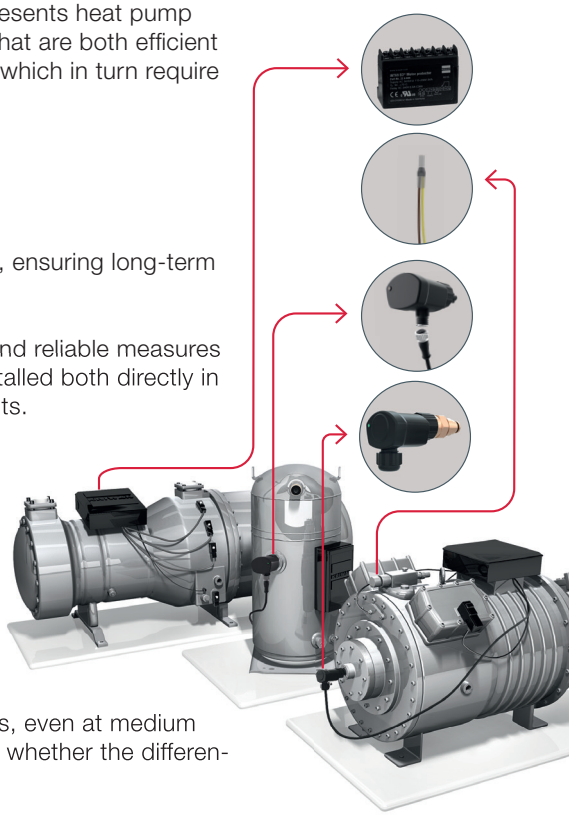
In terms of environmental friendliness, long-term cost savings, and adaptation to future energy policies, heat pumps are becoming increasingly attractive. However, what happens when such a significant investment, especially for industrial purposes, breaks down? There are numerous reasons for failures: an overheated motor, insufficient coolant levels, or an untested lubrication system. The damage from such failures is often very costly.

Additionally, there are further challenges associated with the acquisition and use of heat pumps. The F-Gas Regulation is phasing out many refrigerants due to their environmental impact. This presents heat pump manufacturers with the challenge of finding and implementing alternative refrigerants that are both efficient and environmentally friendly. Typically, manufacturers resort to flammable refrigerants, which in turn require explosion-proof electronics.

FUNCTIONALITY

To address these challenges, KRIWAN offers suitable solutions to protect heat pumps, ensuring long-term efficiency and reliability. The system is stopped before it becomes costly.

The **INT69 motor protection**, based on **PTC sensors**, is one of the most effective and reliable measures against thermal overload of electrical machines. Its compact design allows it to be installed both directly in the heat pump and in the control panel. It is also compatible with flammable refrigerants.



The **optical level monitoring INT275-INT279** is used for non-contact single-point measurement of liquid levels. Thanks to the combination of evaluation unit and screw-in part, the devices can be exchanged or installed without opening the heat circuit. The KRIWAN level sensors with plug connections enable easy installation, operate at temperatures up to 160 °C, and are well-suited for A2L and A3 refrigerants.

The **DELTA-P II** is a reliable stand-alone solution for monitoring the lubrication system of reciprocating compressors. The KRIWAN differential pressure monitoring allows precise and non-contact measurement of differential pressures in oil pumps, even at medium temperatures up to 120 °C. An integrated LED provides immediate visual indication of whether the differential pressure is within the safe range, too low, or if there is an internal fault.

ADVANTAGES

- Two-component system for precise monitoring without opening the circuit
- DP port for data transmission
- Coordinated protection and monitoring devices
- Protection devices also suitable for flammable refrigerants
- Motor protection devices can be installed both on the compressor itself and in the control panel

more information:

OUR HIGHLIGHTS

Specification	INT69 B3 Motor protection	INT278 CAN EX Level switch	INT276 CN+ / CX+ Level switch	DELTA-P II Oil differential pressure
Article number	22 A 609	41 K 482 S080 (115 V) 52 K 482 S080 (230 V)	20 S 483 S020 20 S 483 S030	22 S 632 S010 electrical part 02 D 560 S10 screw-in part
Connection type	Screw terminals, flat terminal sleeves	1 m cable	5-pin M12 connector, 1 m / 2m cable	1 m
Medium temperature		Max. 100 °C (120 °C < 1h)	-30 °C ≤ T_{medium} ≤ +160 °C	-30 °C ≤ T_{medium} ≤ +120 °C
Test regulations	A2L capable according to UL 60335-2-40 and UL 60335-2-89	Suitable for use in explosive atmospheres according to EN 60079-7 and EN 60079-15	EN 61000-6-2, EN 61000-6-3, EN 61010-1	EN 61000-6-2, EN 61000-6-3, EN 61010-1

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