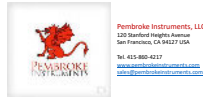
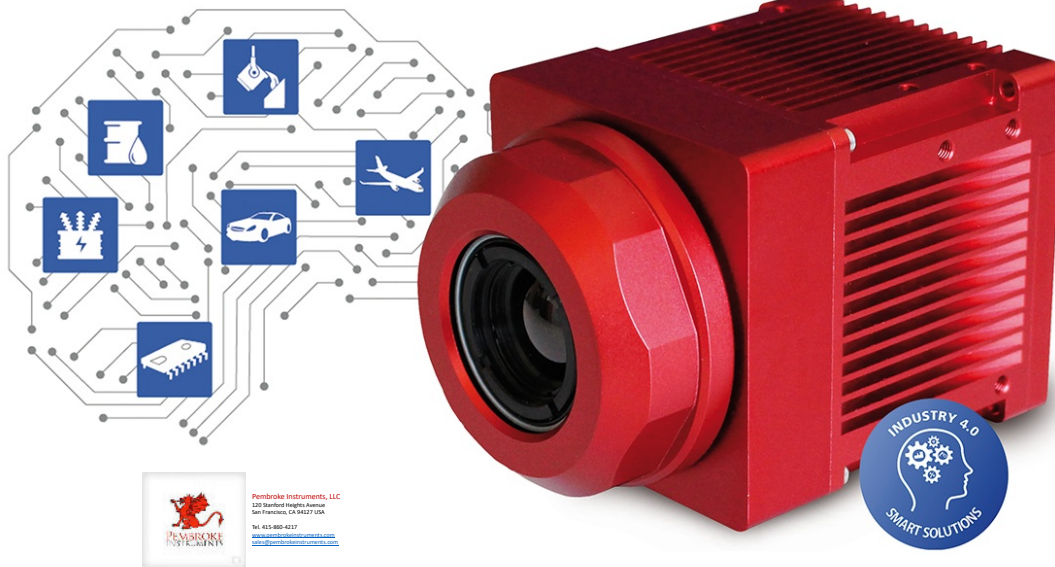


IRSX Smart Infrared Camera: Application Stories



ADVANTAGES IRSX Smart Infrared Camera

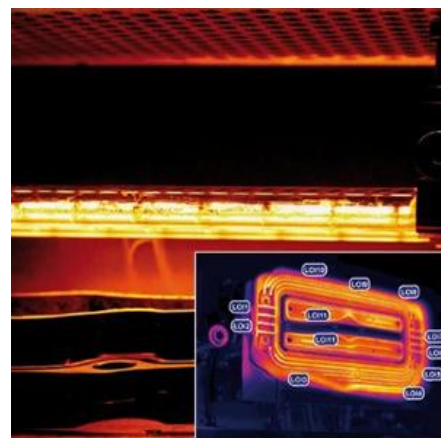
AT – Automation Technology Enables Autonomous Temperature Control in Any Industry with IRSX Smart Infrared Camera

With its IRSX smart infrared camera series, the North German technology company AT - Automation Technology from Bad Oldesloe near Hamburg has caused an international sensation. The reason for this is the unique concept of this smart infrared camera as a high-precision stand-alone solution, which can be used across all industries as an optimal temperature control in every branch of industry. Neither additional hardware nor software is required for this; the camera has an app concept similar to that of a smartphone, so that any number of apps and jobs can be stored on the IRSX, between which the customer can switch back and forth flexibly. The camera's smart technology enables complete processing of the temperature data including target/actual comparison based on the app within the camera, while communication takes place independently through the Internet of Things (IoT) with other devices via numerous integrated interfaces such as Modbus, REST API/OpenAPI or LUA Scripting. The following application examples show why the IRSX is a true industrial all-rounder and how it can maximize production efficiency.

AUTOMOTIVE

Monitoring Plastic Welding

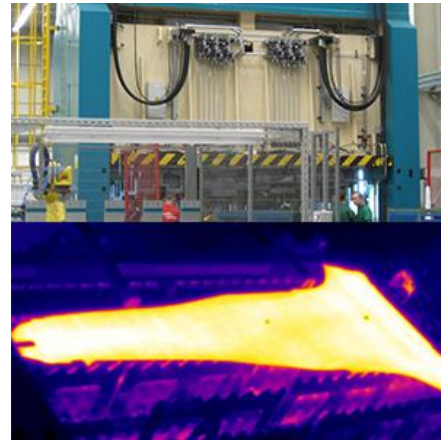
In the automotive sector, more and more vehicle parts are being made of plastic and joined together by infrared or hot gas welding processes. In order to guarantee a consistently high product quality, appropriate target temperatures must be reached during the welding process, otherwise the weld seam will not have the necessary strength. The IRSX smart infrared camera from AT is the ideal tool for monitoring the temperature curve along the entire weld seam directly after the heating process. It is integrated into the welding machine and impresses with its special functions for faultless temperature measurement on the narrow



welding ribs. In this case, the camera then communicates directly with the machine controller and the welding machine manufacturer can design the visualization and data management according to his own ideas. The advantages: Minimizing costs by reducing scrap and increasing profitability by ensuring optimum product quality.

Press Hardening

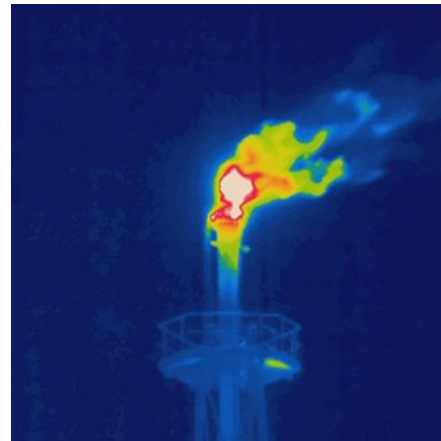
In the automotive industry, press hardening is an innovative process for the production of extremely strong, crash-relevant components such as A- and B-pillars or bumpers. In this process, the sheet metal parts are partially heated to up to 900 degrees and then rapidly cooled again during the pressing process, giving parts of the sheet metal particularly high strength. The particular challenge in this process, however, is the different temperature distribution, as most components are not intended to remain solid throughout but also elastic in some places. For this reason, the temperature of the sheet must be measured and evaluated both before the forming process and afterwards in order to be able to guarantee the mechanical properties of the component. Incidentally, AT is currently the only company in the world to offer this measurement based on a smart infrared camera. The advantages: reliable evaluation of the temperature distribution in a range of up to 1000 degrees both before and after the pressing process, automatic value transmission of the temperature data to the process control system without additional hardware and software thanks to the smart technology of the IRSX.



OIL & GAS

Flare Monitoring

In an industrial production process in which toxic, flammable gases are produced and must be flared accordingly, a permanently burning pilot flame is always required on the flare. This prevents the gases from being released untreated into the atmosphere. In order to control this constant operation of the pilot flame, the IRSX smart infrared camera from AT can be used to ensure fail-safe continuous operation. In addition, the IRSX communicates directly with the process control system, making it extremely easy to integrate without additional hardware or software. The advantages: Monitoring of the pilot flame at any time of day, use of the IRSX even in bad weather conditions such as rain or fog as well as in darkness.



Refinery Monitoring

In industrial plants such as refineries, critical temperature developments can have fatal consequences. The failure of individual plant components would not only result in a production stop and thus high downtime costs, but can also endanger staff if, for example, highly flammable liquids such as gasoline are being produced. Therefore, the AT IRSX smart infrared camera is used in refineries for continuous thermal image evaluation, so that possible hotspots are immediately reported to the process control system. The advantages: Use of the IRSX also in

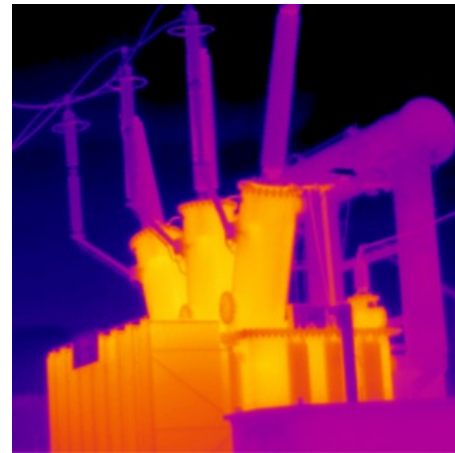
explosive environments due to the development of extra explosion-proof housing IRCamSafe EX, possibility to optimize production processes and plant utilization by evaluating the thermal images.



ENERGY & UTILITIES

Substation Monitoring

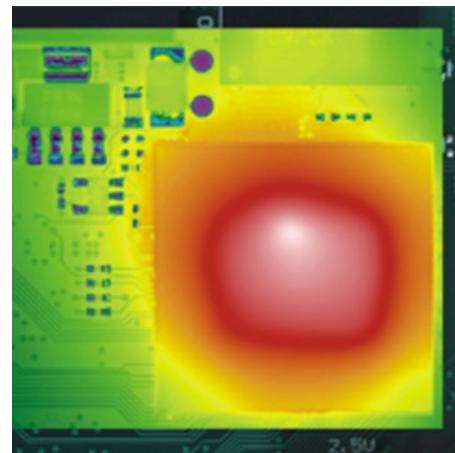
With its IRSX smart infrared cameras, AT is currently making progress in Central and South America as well as in Asia, enabling large power utilities to monitor their substations with the help of an application for large-scale temperature monitoring. Unlike in Germany, the transformers in the power grids there are less reliable, so there is a permanent risk of system failure (blackout) or fire development. If there is a deviation from the previously defined temperature limits, AT's IRSX smart infrared camera directly sends an alarm as well as the corresponding temperature values and image. The advantages: Networking of the individual IRSX smart infrared cameras with each other and evaluation at a central location, possibility to have access to all substations via the web interface at any time, timely prevention of the emergency by taking all necessary measures.



ELECTRONICS

PCB Inspection

PCBs, short for Printed Circuit Boards, are printed circuit boards that are nowadays installed in every electronic device such as cell phones, radios or laptops. In order to meet the high demands of technical quality and to be sure of the functionality of the electrical components with which the PCB is equipped, reliable quality assurance is required. This can be guaranteed if the temperature distribution of the components corresponds exactly to the predefined standard values as soon as electricity starts to flow. AT, with the help of its IRSX smart infrared camera, makes it possible to detect even small component defects by the thermal signature they produce. If extremely small areas need to be inspected, the IRSX can also be equipped with microscope optics. The advantages: efficient production of PCBs by timely sorting out of dysfunctional products, reliable measurement results due to high-precision inspection capability of the IRSX, low effort due to the integrated functions of the IRSX.





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