

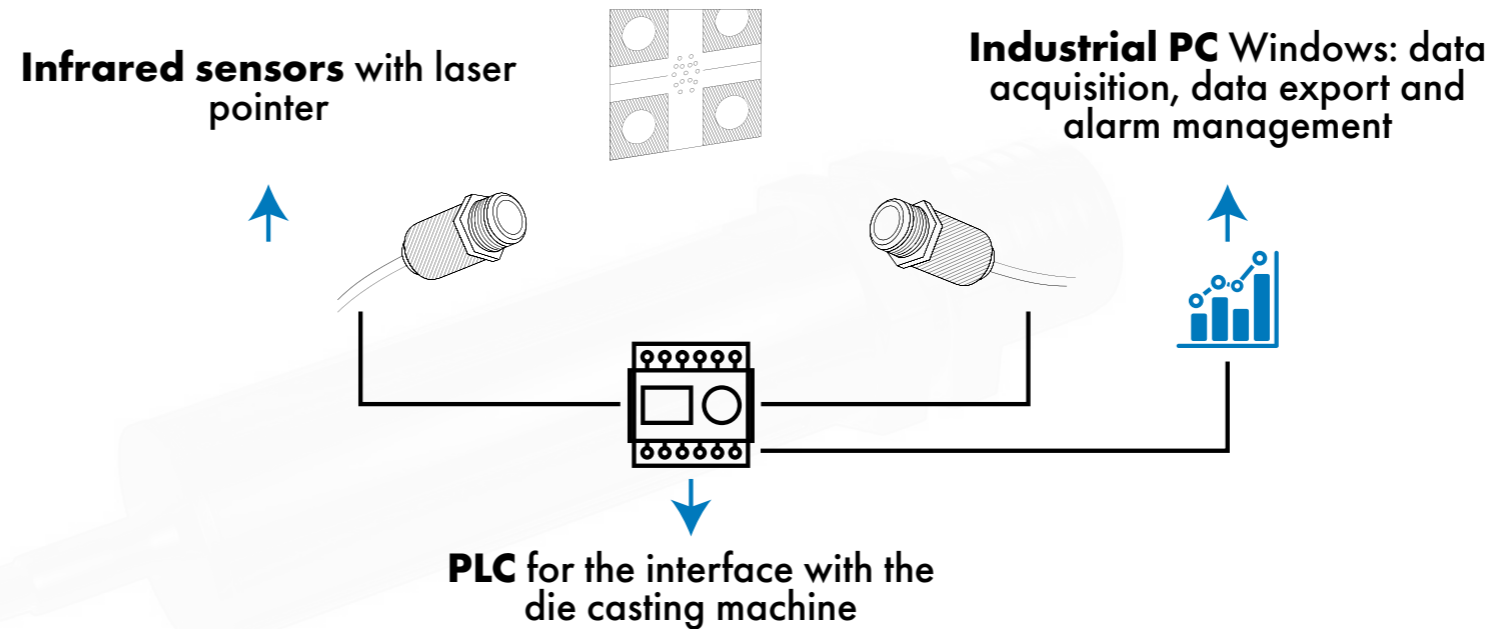


**DIECASTING  
ENGINEERING**

# **Die Surface Temperature Monitoring System (DTM)**

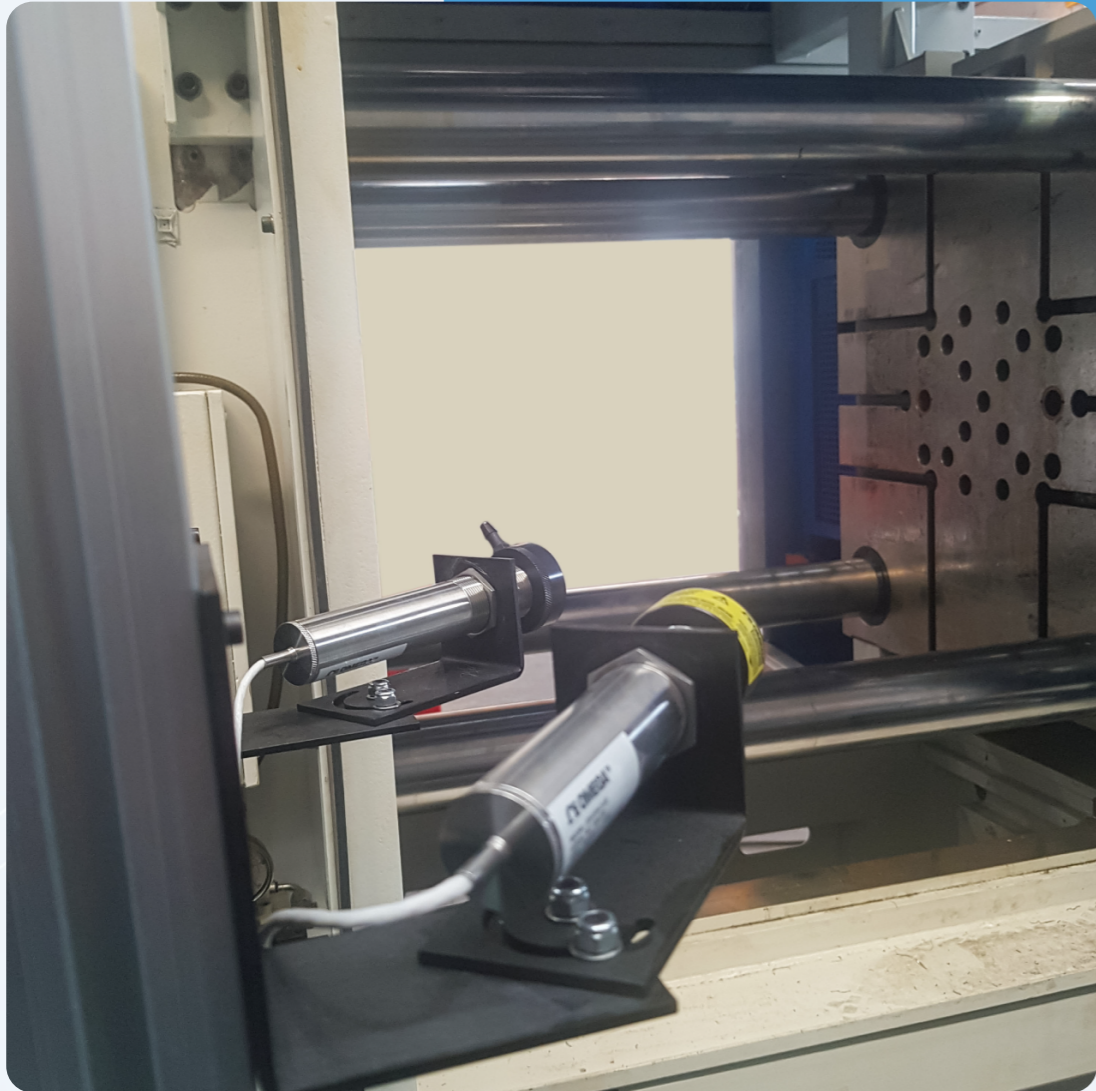
# DTM, Die Surface Temperature Monitoring System

Effective process control applied to moulds' thermal equilibrium is a critical item while seeking high quality in die casting production



## Key advantages of the DTM system

- Extended lifespan of die casting moulds
- Optimized lubrication and decreased release agent consumption
- Significant optimization of process by having full control of die temperature (a crucial process variable often hidden to standard monitoring systems)



## **EASY IMPLEMENTATION & FLEXIBLE USE**

The infrared sensors are positioned outside the platens

- Higher measurement efficiency ●
- Easy and flexible positioning ●
- Possibility to move them to another cell ●
- Possibility to install more sensors ●

# DTM CONTACTLESS INFRARED SENSORS

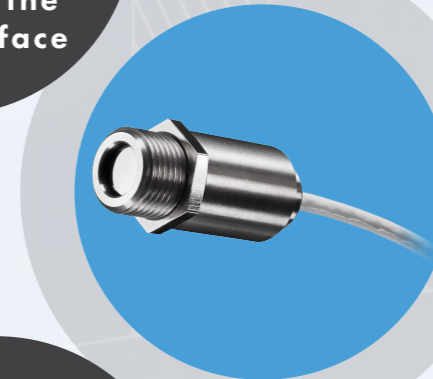
## Simple and easy installation

- The infrared sensors used in the DTM are easily installed outside the platens.
- Sensors can be easily configured and oriented to target both fixed and mobile platens.
- The distance from the machine and the inclination angle do not affect the measurement quality.

A laser pointer to enable a precise positioning of measurement points on the mould surface

Air purge collar to ensure consistent sensor cleanliness

Robust and resistant: less protection is required compared to traditional thermocameras



# DTM TECHNOLOGY: CONTROL SYSTEM



## Industrial PC

The measurement acquisition software operates on a Windows-based industrial touch PC



## PLC

Siemens PLC to enable an easy interface with the DCM and the cell



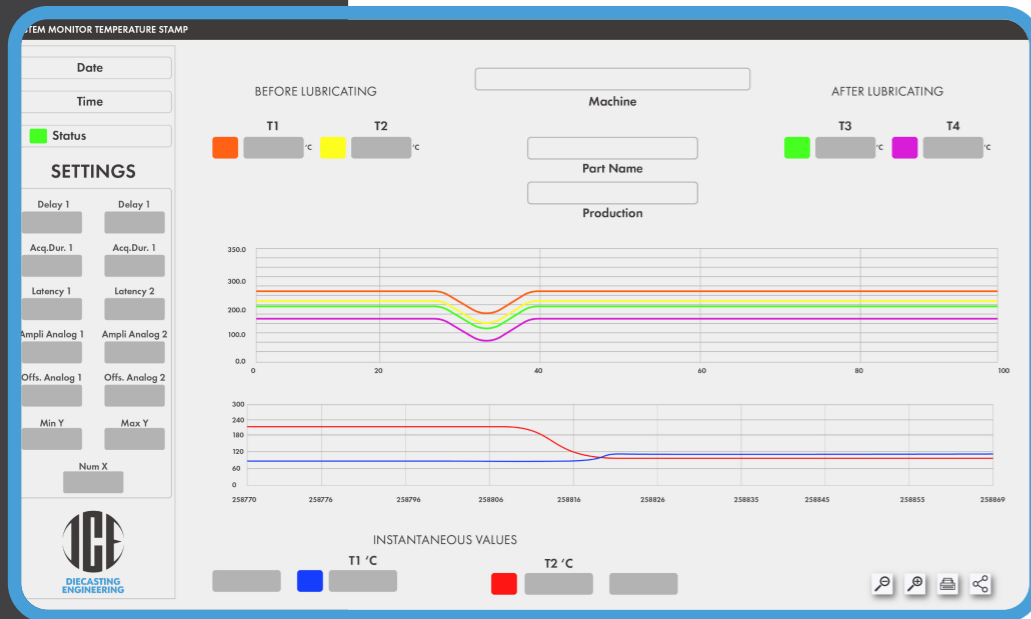
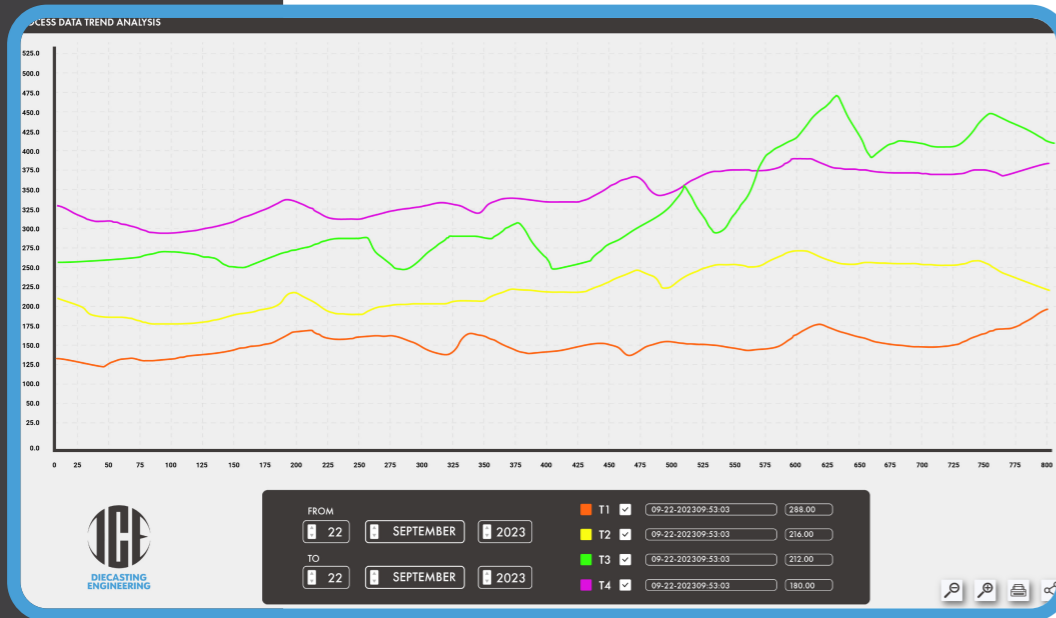
## Software DCE

Analysis of historical data. Export of data to custom MES or management systems



## Teleservice

Remote assistance for support, troubleshooting and upgrade



# TECHNICAL SPECIFICATIONS - HARDWARE

## PLC

- Siemens S7 PLC
- CPU Programmable with IEC 61131 languages
- Ethernet connection
- Analog inputs for sensor reading
- Signal interface with die casting machine:  
Mold Open, End of spraying
- No other signals or consents are required on the die casting machine and on the cell
- Digital outputs or direct command from HMI for out-of-range or system fault alarms

## OPERATOR PANEL

- Fanless industrial PC, 24V power supply
- Windows based operating system
- 10" touch screen, resistive 5-wire
- Ethernet connection
- Wi-fi connection
- SSD Sata drive  $\geq$  64GB
- RAM  $\geq$  4GB

## CONTACTLESS SENSORS

- Contactless Infrared Sensors
- Temperature Range 0°C - 500°C
- Analog output 0-10V or 4-20mA
- Response time  $\leq$  200msec
- Accuracy:  $\leq$  3%
- Accessories: laser pointer to accurately place measurement points on the surface; air purge collar to ensure constant sensor cleanliness
- Number of installable sensors: min 2, max 32

# TECHNICAL SPECIFICATIONS - SOFTWARE

## DCE software

1

HMI developed in Windows environment

2

Interactive graphical interface with buttons and icons

3

Communication with PLC to read temperature values

4

Real-time check of temperatures consistency with set ranges, with the option to include alarm signals or commands

5

Display of measurements taken in real time at each cycle

6

Historical analysis of values with trend graphs on a time basis

7

Export of value database with a range "Industry 4.0" protocols: SQL tables, MS Access database, MS Excel, CSV Files. Alternatively, update on field devices via Modbus TCP, OPC UA, Ethernet IP

8

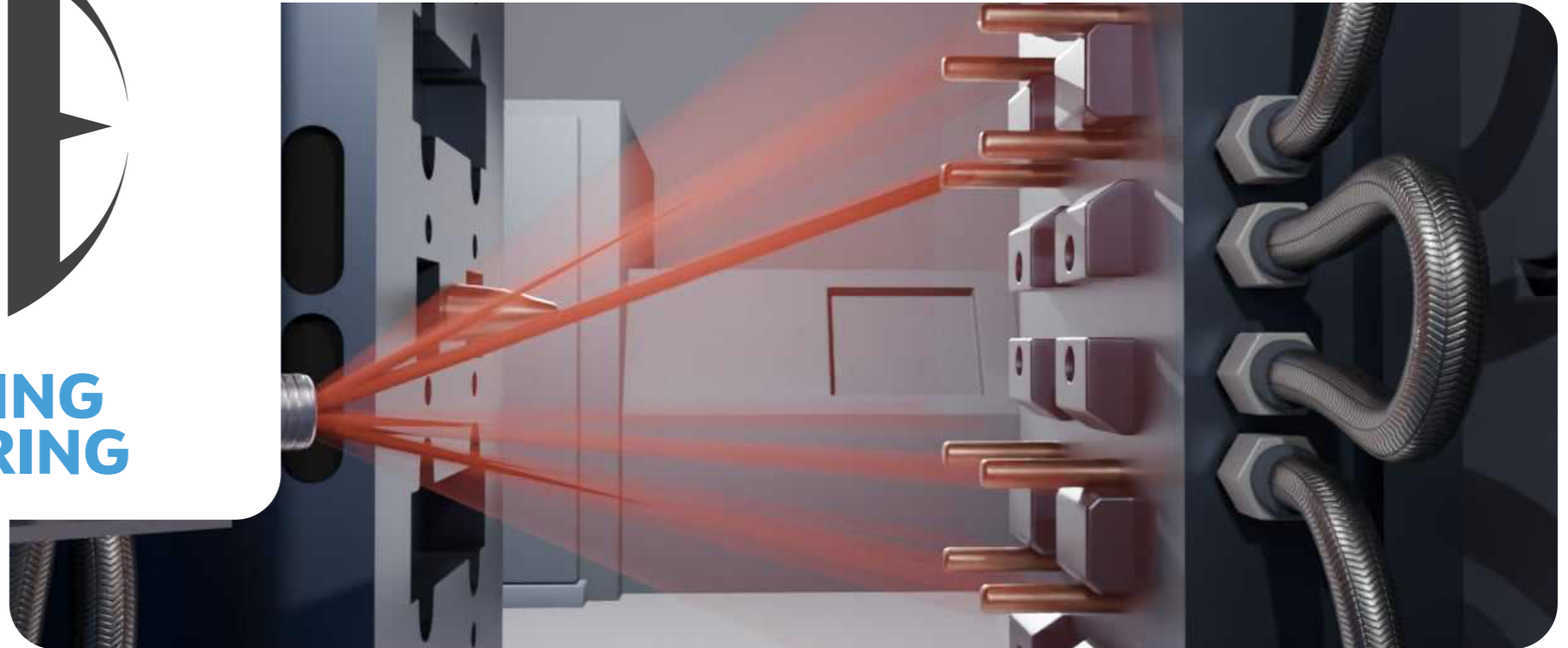
Possibility to install HMI software on external stations networked to the main panel

9

Ability to access the main panel through remote control software



**DIECASTING  
ENGINEERING**



**Contact Us**

Diecasting Engineering S.r.l.

Via Nazionale 61/19 – 25080 – Raffa di Puegnago del Garda (BS)

[www.diecasting.it](http://www.diecasting.it)

[info@diecasting.it](mailto:info@diecasting.it)