



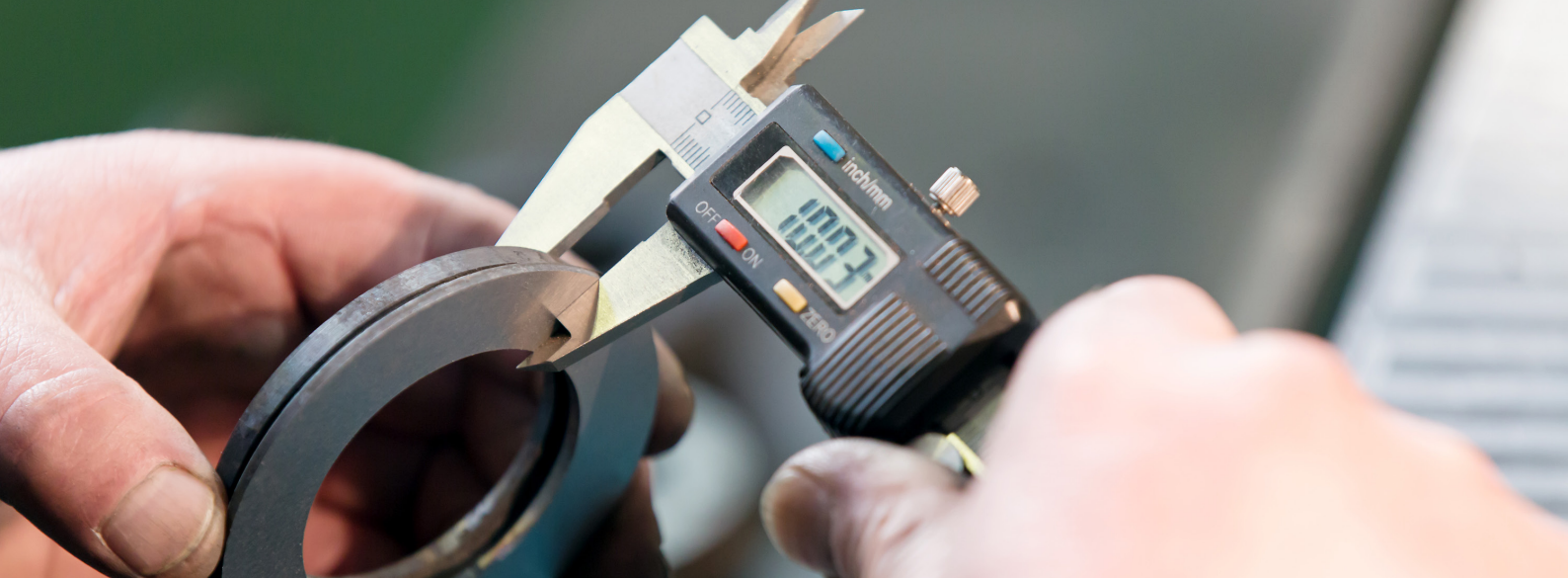
SPC+ STATISTICAL PROCESS CONTROL



LEADS YOU IN
INDUSTRY 4.0

- **COMPUTERIZED MANAGEMENT OF ALL CONTROL PLANS**, containing all the information required by quality standards, with search option by date of issue, plan type, department, article and product features. A list of the characteristic measurements associated with each drawing can be imported from files generated by the CAD / PLM / PDM systems.
- **CONFIGURABILITY OF SPC FIELD MEASURING STATIONS**. Only some or all of the measurements defined in the Control Plan active for a specific article can be associated with each station.
- **COMPLETE CONFIGURABILITY** of all the measurements to be handled by the in-line SPC process. For each measurement it is possible to describe the characteristics, the associated status, the type of acquisition (manual, serial, etc.), the acquisition frequency and numerous other parameters.
- **MULTIMEDIA FILES** (pdf, videos, drawings, work documents, etc.) can be associated with each measurement for dissemination of the Control Methods and Response Plans, giving controlled, centralised distribution and entirely eliminating costly and laborious maintenance and distribution of paper documents.
- **FIELD MEASUREMENT ACQUISITION**. For each field measurement station it is possible to define which operator is qualified to effect the measurement, the measuring frequency (in terms of number of items, production hours, production go-ahead, quality approval, end-of-production approval) and any other factors required. If a Machine Data Collection Module is also installed, after n pieces or n hours of actual production the system generates a list of measurements to be taken automatically based on the current Control Plan. The system requests measurement values for each group based on the current Control Plan, and constructs a point, which is displayed in real time on the XS/ XR or NP chart, depending on the Control Plan configuration. Point tolerance checks are conducted, and shift, strike and trend alarms are generated in real time.
- **DRAWING DISPLAY**. During measurement acquisition, it is possible in the field to display a drawing showing the measurements to be acquired, together with references and notes. The drawing is in standard DXF format and can be displayed using common freeware packages, thereby avoiding the field distribution of printed drawings.
- **CONTROL CHARTS**. In the Control Plan it is possible for each measurement to configure





which control chart to build (XR or XS or NP when measuring by attributes). The user can also establish whether or not to display the control chart for a particular measurement. All acquired measurements are represented with all their identifying attributes:

- Acquisition date/time
- Operator performing the measurement
- Group/subgroup
- Sampling frequency, and the measurement to which it refers
- Production/job order
- Article
- Production batch
- Current Control Plan and revision status
- Supplier
- Notes

• **REPORTING.** Any office PC user can use multiple filters to extract the measurement results and represent them on the control chart. The system also calculates and displays the following for each control chart processed:

- Gaussian distribution of measurements
- Histogram of subgroups
- Pareto chart
- Sigma, Cp, Cpk, Pp and Ppk values
- Calculated and set limit values

• **ALARM MANAGEMENT.** The system provides a simple yet powerful cockpit showing all process alerts, without the

need to consult the single charts. A single page displays shift, strike and trend alarms for the various measurements, the number of measurements the operator still has to acquire for each station, the current Control Plan and many other process-monitoring details.

• **GAUGE MANAGEMENT.** All gauges are handled by the system. The user can define the various gauge characteristics and a list of articles that can be measured using the current gauge, and also track the actions performed by the measuring instrument. The following can be consulted for each gauge:

- Position
- Status
- Supplier
- Person in charge
- Calibration certificates issued
- Date of next calibration
- Result of the calibration process and other details
- Further information for instrument monitoring and control

• **DATA EXPORTABILITY.** All the acquired control plans and control charts can be printed and exported to Excel for processing as required.



MODULES THAT CAN BE INTEGRATED WITH SPC+ 360° COVERAGE



PRD+
Production control



SCT+
Technical Sheets (Receipts)



OPR+
Management of operator indirect activities



CNS+
Energy Consumption



LGT+
Department logistics



APP+
Process Parameter Acquisition



ATC+
Auto-tests



MTZ+
Run-to-failure and predictive maintenance



STP+
Mould, die and insert management



CM+
Full machine capacity