YARN BREAK MONITORING LINE

The "Bi-dimensional Image Variation" Sensors

BTSR®

building the future

IMAGE VARIATION SENSORS

TOUCHLESS CONTROL

FULLY PROGRAMMABLE

THE "BI-DIMENSIONAL IMAGE VARIATION" SENSORS

Yarn running monitoring represents a basic need of every textile manufacturer.

Breakages or not correct yarn running if not immediately detected could affect product quality and production process efficiency.

Thanks to extremely advanced patented control methodologies and the most advanced compounds utilized, BTSR sensors are unique solutions, immune to ambient/yarn condition even in the most extreme working environment and capable of checking yarn running in both non-invasive "touchless" and "self-cleaning" modalities.

BTSR sensors are a reference point for the market in terms of innovation, performances design and miniaturization.

NEW CONCEPT SENSORS MINIATURIZED, INNOVATIVE, FLEXIBLE SOLUTIONS

"Bi-dimensional Image Variation Technique" Synthesis and result of the continuous BTSR research activity, the new generation IS3F/IS4F devices are unique solutions based on a sophisticated patented control technique which analyzes the profile of the yarn under inspection and continuously control its image variation by means of double transmitters on a wide reading area. IS3F/ISF4F electronic sensors measure and indicate with absolute accuracy the relevant running or stop condition of the yarn itself.

Immune from environmental conditions

The "Bidimensional Image Variation" technique, makes the IS3F/IS4F.. device free from environmental conditions such as: machine vibrations, dust/dirtiness accumulation, water/oil contamination (IP67 certification).

FEATURES & BENEFITS

New concept sensors
Miniaturized, Innovative, Flexible Solutions

- **"Bi-dimensional Image Variation Technique"**
  Synthesis and result of the continuous BTSR research activity, the new generation IS3F/IS4F devices are unique solutions based on a sophisticated patented control technique which analyzes the profile of the yarn under inspection and continuously control its image variation by means of double transmitters on a wide reading area. IS3F/IS4F electronic sensors measure and indicate with absolute accuracy the relevant running or stop condition of the yarn itself
- **Immune from environmental conditions**
  The "Bidimensional Image Variation" technique, makes the IS3F/IS4F.. device free from environmental conditions such as: machine vibrations, dust/dirtiness accumulation, water/oil contamination (IP67 certification), thus guaranteeing the full device performance even in the most critical applications
- **Miniaturized, Programmable, Flexible, OEM Integrable**
  Characterized by miniaturized dimensions, this new generation sensors line is fully programmable, flexible and easily adaptable to the control of any type of yarns (traditional yarns, elastomers, technical fibers, carbon, glass, metal fibers,...) and application process working conditions
- **Fully fit and meet any yarn / application characteristics**
  When destined to the OEM market, BTSR Sensors can be easily integrated into textile machines
- **Ceramic Optical Interface and 'Self-Cleaning' mode**
  IS3F/IS4F sensor type is provided with optical lens/ceramic unit, which allow performing a yarn control either with yarn-lens contact (Self-cleaning Mode) thus avoiding any dirtiness/dust accumulation or without any yarn-lens contact (Touch-less Mode) by positioning the yarn in the wide reading area of the sensor
- **Optical Interfaces**
  The "touch light" function allows the rapid and precise use of the optical key in the different procedures (sensor numbering, sensor switch-off).
  Bright (red and green) LEDs are used for control condition and alarm signalling

MATRIX TOUCH KNIT TERMINAL & IS4F/HTS SENSORS

Main Applications: Large Diameter Circular Machines

FEAUTERES:

- CONTROL UP TO 240 FEEDS
- COUNTERS AND DATA REPORT
- Possibility to count the number of errors (both UNCUT and BROKEN yarns)
- N.2 DIFFERENT SETS OF CONTROL PARAMETERS (P_Fast and P_Slow)
  - Associated with two different machine production speeds (i.e. initial ramp stage)
  - Automatic set-up with a defined timing during production through machine input signals.
- AUTOMATIC MACHINE STOP
  In case of anomalies/yarn breakages/slub presence in yarn guide

SMART MATRIX TERMINAL & IS4F/HTS SENSORS

Main Applications: Small and medium Circular Knitting Machines, Socks, Hosiery, Seamless

FEAUTERES:

- Self learning (BTSR Patent)
  It self-learns the yarn sequence picked-up by the machine during a sample cycle, thus detecting possible deviations with respect to the above mentioned sample cycle
- TARGET FUNCTION
  Sets the number of stockings/body blanks to be produced within a given working session (Target), stopping the machine when such number is achieved
- COUNTERS AND DATA REPORT
  Possibility to count the number of errors (both UNCUT and BROKEN yarns) and of stockings/body blanks (globally and for each sensor)

MATRIX TOUCH WARP TERMINAL & IS3F/485 - TS77 SENSORS

Main Applications: Weaving Preparation Processes - Creel, Warping, Weft Insertion Machines (for glass fibers, carbon and advanced composites), Quilting Machines

FEAUTERES:

- CONTROL UP TO 2000 YARNS DURING THE ENTIRE WORKING CYCLE
  By means of up to 20 Interface Modules (SM-DIN2), each one capable of managing up to 100 sensors
- SELF-LEARNING (BTSR Patent)
  Learn the number of yarns used by the machine during a sample cycle and detects anomalies
- N. 2 DIFFERENT SETS OF CONTROL PARAMETERS (P_Fast and P_Slow)
  - Associated with two different machine speeds (i.e. initial ramp stage,...)
  - Automatic set-up with a defined timing during production
- COUNTERS AND DATA REPORT
  Possibility to count the number and type of errors (broken or missing yarns, uncut or not correctly used yarns, threading or pick-up errors,...)
- AUTOMATIC MACHINE STOP
  In case of anomalies during the working cycle
- TS77 Digital Sensor Device for measuring yarn tension

MATRIX TOUCH TEX TERMINAL & IS3F/TS, & IS3F/TSL, & IS3F/MTC SENSORS

Main Applications: Winding, copsing, doubling, texturing, interlacing machines

FEAUTERES:

- CONTROL UP TO 200 SENSORS
  By means of up to 20 Interface Modules (SM-DIN2), each one capable of managing up to 100 sensors
- MATRIX TOUCH TEX Programming and Control Terminal
  - Up to 99 different pre-defined styles
  - Monitor up to 10 different styles at a time
- IMMEDIATE SINGLE POSITION STOP when an anomaly is detected
- COUNTERS AND DATA REPORT
  Possibility to count and store the number of errors (BROKEN yarns) for each sensor
- New IS3F/ TSL type is sealed - IP67 CERTIFIED
  Immune to environmental conditions (oil, dust, water and dirty resistant)
- IS3F/TS double connector for quick and easy applications

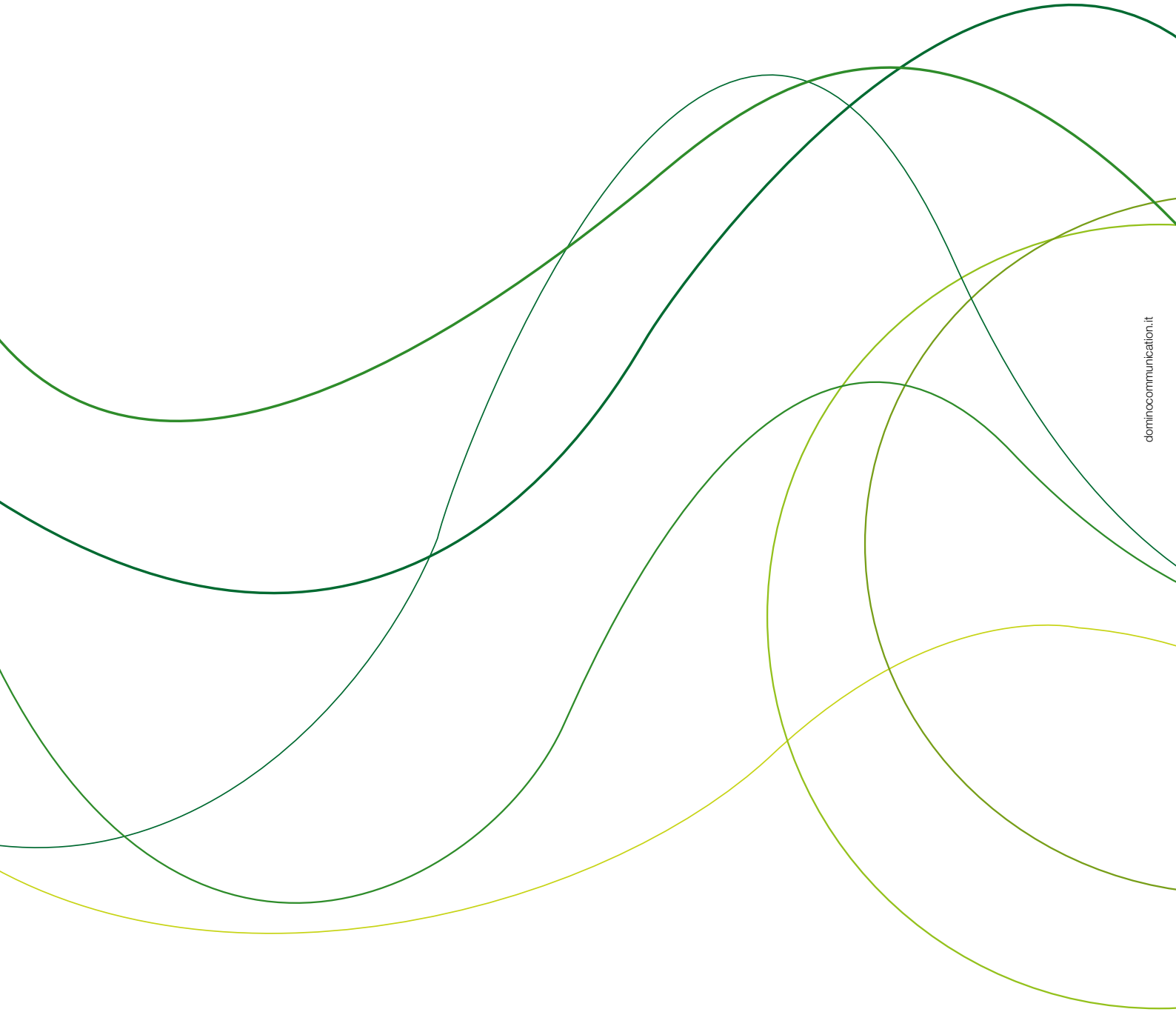
MATRIX TOUCH

Centralized Programming and Monitoring

MATRIX TOUCH advanced touch screen display for easy programming and real time monitoring of production process status also in graphical form.

MATRIX TOUCH on-board Terminal is the latest BTSR Technology allowing advance BTSR sensors programming and monitoring in the production line.
Coming with Touch-screen and with Multi-language technologies for user-friendly operations, MATRIX TOUCH is provided with Wifi and Ethernet interface.
Machine operator can easly download and upload identification data as well as program sensors parameters.
MTRIX TOUCH allows:

- Compatible with BTSR APP EasyFeeder and PC-LINK Web Industry 4.0 tools
- Easy and quick sensor identification thanks to the Automatic Numbering Procedure (BTSR Patent)
- Real-time display of single sensor working status
- Data collection and storage of anomalies detected by each single sensor
- Data Report with analysis of technical faults (number and type)
- Maximum precision - possibility of programming the sensors technical features according to the type of yarn to be processed
- Absolute flexibility - possibility to quickly change the sensor technical features according to the yarn/process typology



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