YARN QUALITY CONTROL LINE

Intelligent Solutions for Textile Processes Quality Control

BTSR®

building the future


BTSR
YARN DIRECTION
G344
MSC/MTC
MATRIX TOUCH
Home
MATRIX TOUCH PFU
STOP
No Feeders in alarm

ABSOLUTE FLEXIBILITY

MAXIMUM ACCURACY

EXTREME SIMPLICITY

INTELLIGENT SOLUTIONS FOR TEXTILE PROCESS QUALITY CONTROL

Production Quality Control is a 'must' for any manufacturer who aims at playing a relevant role in the global competition.

BTSR offers a wide range of flexible solutions able to measure parameters and features of the controlled yarn in order to guarantee the top quality of the yarn/process being used.

Yarn tension measurement, yarn clearing analysis, yarn twisting/shagginess counting as well as collected yarn length measurement are fundamental requirements to be monitored for an accurate quality control of the production processes.

BTSR is your Quality Partner by providing the most suitable solution according to your textile process quality control needs.

YARN CLEARING QUALITY CONTROL	**YARN TENSION MEASUREMENT AND ANALYSIS**
YARN TWISTING ANALYSIS	**YARN LENGTH MEASUREMENT**

FLEXIBLE SOLUTIONS FOR THE MOST ACCURATE QUALITY CONTROL IN YOUR TEXTILE PROCESS

Each BTSR Yarn Quality Control System consists of a dedicated control terminal (SMART MATRIX series) and a variable number of devices which are easily installed along each textile process when a yarn quality control has to be implemented.

The possibility of programming the detection capability of the sensors according to the type of yarn to be processed guarantees a perfect symbiosis between sensor and yarn.

MATRIX TOUCH ON BOARD TERMINALS

MATRIX TOUCH Terminal is a true "micro-computer" for complete machine programming and monitoring.

FEATURES AND BENEFITS

- **Easy and quick sensor identification** thanks to the Automatic Numbering Procedure (BTSR Patent)
- **Advanced Programming Features** - program the sensor technical features according to your process quality control requirements
- **Real-time display** - of single sensor working status
- **Data collection and storage of anomalies** - detected by each single sensor
- **Absolute flexibility** - possibility of quickly changing the sensor technical features according to the article to be processed

HIGH-TECH SENSORS

BTSR Yarn Quality Sensors represent the most advanced result in terms of innovation and technology, combining ergonomics and miniaturization, reliability and top performance.

FEATURES AND BENEFITS

- **Immune from environmental conditions** - thus guaranteering top quality analysis performance even in the most critical applications
- **Easily programmable devices** - to fully fit the textile process quality control standards
- **Miniaturized dimensions** - flexible and easily adaptable to the control of any type of yarns (traditional yarns, elastomers, technical fibers,...) and process working conditions
- **When destined to the OEM market** - BTSR Sensors can be easily integrated into textile machines and installed as retrofit on already working machines

The "touch light" function allows for the rapid and precise use of the optic key in the different procedures: standardization, numbering, off-set etc...

RGB Multicolor Led for easy anomalies identifications and machine operations: start - top - doffing - etc...

MATRIX TOUCH IRIDIUM TERMINAL

CMOS Camera View for perfect centering of yarn path

Profiler for quality classification

Sensor Events logs

Graph logs with yarn anomalies profiles with indication of defect and process event data

ADVANCED YARN CLEARING TECHNOLOGY

Coming from BTSR consolidate experience on advanced yarn clearing technology, IRIDIUM3D represents the latest breakthrough innovation drastically providing unique features and benefits in yarn defect detection.

Thanks to the sophisticated control technique, IRIDIUM3D is an electronic sensor capable of detecting the image variation of yarn being checked, thus identifying the occurrence of anomalies as well as the quality level of the yarn itself.

The 3D image technique (BTSR Patent) matches the CCD technology and analog technology to self-calibrating in real time, controls the yarn independently from its position and even flat yarns in a wide area.

In addition, IRIDIUM3D does not require any contact with the yarn being checked, thus allowing perfect monitoring of the yarn without in any way affecting the yarn tension characteristics and dust and pollution generation.

IRIDIUM3D is fully programmable and thus it can be easily adapted to quality control for any type of yarn/application.

TOP FEATURES AND BENEFITS

- SIX DIFFERENT TYPES OF YARN DEFECTS DETECTION - The main quality control functions are the identification of: - neps - neps per meter (nep/m) - slubs and tangles (slubs) - added ply (yarn+) - missing ply (yarn) - missing yarn (no yarn).
- SPECIAL YARN DEFECT ALGORITHM DETECTION: CV % - Standard Deviation
- 3D ANALYSIS - Analyse flat & round yarns dimension in 3-Dimesions (3D) analysis, 6mm visual area
- YARN DIAMETER DIRECT MEASUREMENT (in addition to Self-learning Cycle)
- ALL YARNS DEFECT DETECTION CAPABILITY from very thin to very thick yarns (including chenille yarns)
- Robust metallic diecasting case
- Fully compatible with New MATRIXTOUCH IRIDIUM terminal and PC-LINK WEB IRIDIUM software
- PROFILER FUNCTION
  - Detects any yarn diameter variation with special graph visualization for quality classification
- LOGS FUNCTIONS
  - Event logs: system events - user action - sensor events - system events for a perfect traceability and monitoring of the process and yarn anomalies detection

TECHNICAL SPECIFICATIONS

- Compact Design (50 x 50 x 18 mm)
- Extremely Precise Reading Area (6000 x 6000 Microns – 6 mm)
- Minimum Yarn Speed Resolutions:
  - 0.1 mm @ 100 m/min
  - 1 mm @ 1000 m/min
  - 3 mm @ 3000 m/min
  - Minimum Yarn diameter measurement 100 micron (0,1 mm)

MATRIX TOUCH TENS & TS555/D - TS77 SENSORS

Main Applications: Yarn Tension Measurement and Analysis on Yarn Preparation Processes (Winding, Doubling, Copsing, Texturing, Interlacing, ...), Warping Processes, Quilting Machines, Embroidery Machines.

TS555/D sensors - Based on DSP (Digital Signal Processor) Technology, convert the tension exerted by the yarn on the sensor's loading cell into digital signal.

TS77 sensors - DSP Technology-based sensors, provided with SENSOR IN-SENSOR OUT Double Connector for easy and quick wiring.

TS444 & TFS ANALOG TENSOR SENSORS

Special TS444 analog sensor - TS444 is a precise yarn tension measuring device, specifically designed for yarn preparation processing. With TS44 it's possible to implement yarn collection or treatment integrated with textile machine operating in "closed loop". This allows immediately reacting to any yarn tension variation, thus obtaining new quality results in production of textile fiber treatment.

TFS - The Latest Generation Analog Tension Sensor Technology - TFS is the latest generation analog tension sensor technology designed to reduce the friction created by static contact points and thus granting top accuracy in read the tension value and high stability in values measurement independently from environment conditions.

Equipped with a super low friction ceramic on load cell and with an outlet aluminum wheel.

TFS comes with a new advanced "Zero Drift" Technology with an electronic digital thermic compensation, thus granting the highest accuracy.

FEATURES AND BENEFITS

- ACCURACY - accurate analysis of the tension values measured on the yarn under control in your textile process
- PRECISION - perfect measurement and analysis of the yarn tension thanks to BTSR TS5 'Tension Smart Scanning' Sensor
- ADVANCED SENSOR PROGRAMMING - A comprehensive range of programmable working parameters (i.e. normal yarn working tensions, min. and max. tension thresholds, min. and max. peak tensions beyond which the position or the whole machine shall be stopped, yarn missing condition,...)
- 'ARTICLES' MEMORIZATION - create, modify and save parameter settings related to up to 40 articles for an easy and quick sensor programming / reprogramming

MATRIX TOUCH TEX & IS3W/MTC AND MSC/MTC SENSORS

Main Applications: Yarn Length Measurement on Yarn Preparation Processes (Winding, Soft-packaged Winding, Doubling,...)

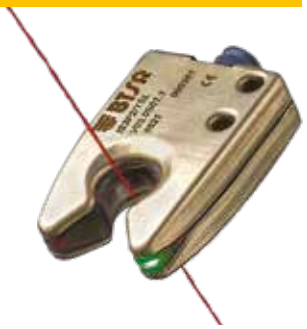
FEATURES AND BENEFITS

- BTSR INNOVATIVE METRIC CONTROL SOLUTIONS - **IS3W/MTC** Sensor converts the number of strokes detected by each sensor into the value of yarn meters collected on every bobbin, while the latest generation **MSC** sensor detects the yarn feeding by contact, thus providing high precision metering measurement unique capability by directly measuring the yarn metering on the single position of the machine.
- CONTROL UP TO 200 SENSORS - Connected to the terminal using a single multi-port interface cable
- SET SUITABLE CORRECTION PARAMETERS - To compensate possible predictable errors related to the machine or yarn type (i.e corrector factor to compensate the bobbin "slipping" effect, % and meter corrector factors, delay signalling settings, sensitivity,...)
- TARGET FUNCTION - Sets the desired meter target with automatic stop of the position as soon as the desired length is reached
- COUNTERS, REAL-TIME DISPLAY, DATA REPORT - Possibility to count the number of failures occurred and targets achieved and to show the values of yarn package length wound (globally and for each sensor)

MATRIX TWIST & IS3F2/TTS SENSORS

Main Applications: Textile Yarn Preparation, Carpet, Denim, Tyrecord, Twisting processes.

The MATRIX TWIST & IS3F2/TTS system, consisting of a MATRIX TWIST control terminal and IS3F2/TTS series sensors, represents the BTSR solution for an accurate control and count of the yarn twists (balloons) in yarn preparation processes such as spiral covering and twisting machines i.e. tyrecord, carpet, cucirini etc... which, during the product processing, require an accurate yarn quality control.



FEATURES AND BENEFITS

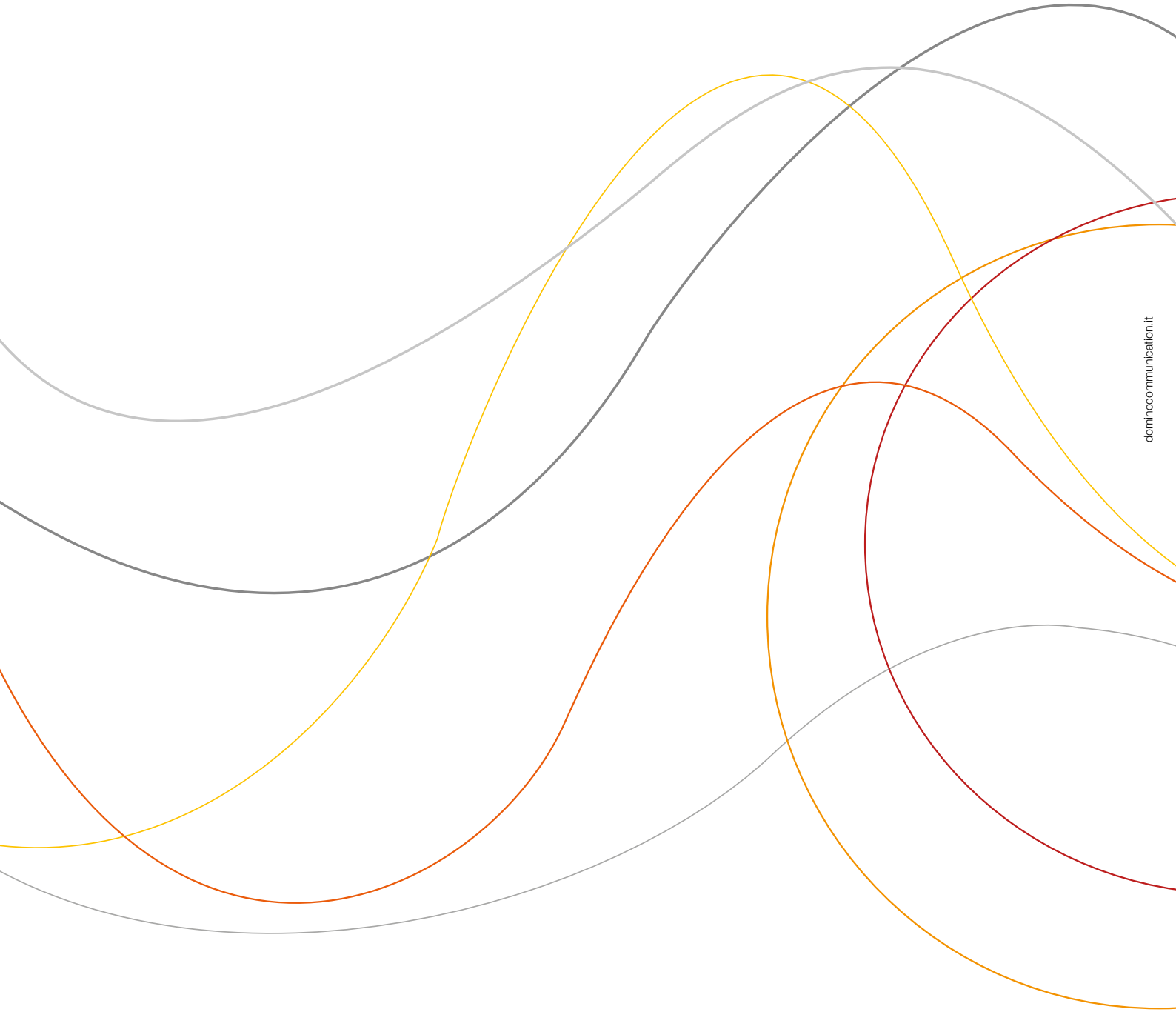
- In MATRIX TWIST configuration, the IS3F2-TTS sensors detects the image variation of a running yarn, thus controlling the quality of the yarn itself.
- The sensor counts the number of twists per second and, through the yarn collection speed control, it allows calculating the number of Twists per Meter (TPM) or Twists per Inch (TPI), stopping the machine position when the previously set tolerance values are exceeded during the machine operation. In addition, it accurately detects the lack of one or multiple filaments, the presence of broken fibers, or other processing anomalies.
- The MATRIX TWIST programming and control terminal can manage up to 200 sensors
- Sensor wiring by means of multi-connector cables significantly reduces the installation costs and wiring complexity.

TMS TENSION AND METERING SENSOR

TMS represents a further innovative step by supplying the unique capability to measure simultaneously tension and speed values of the running yarn. TMS advanced design comes with minimization of static contacts bringing significant reduction of yarn stress and breakages.

'5 in 1' New Tension and Metering Sensor Technology

- YARN BREAK MONITORING Function
- YARN TENSION MEASUREMENT - Program Yarn Tension & set max/min settings for auto stop and detects & tracks all tensions variations
- METERING - Precise meter counter, it helps to eliminate waste and prevent Yarn damages
- YARN SPEED - Monitor the speed of yarn to match with your process and helps maintain tension and process repeatability by monitoring speed changes
- ADVANCED MONITORING - An advanced diagnostic tool.



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