

FibreTQS On Line Monitoring Technical and Industrial Yarn

Fibrevision FibreTQS for Technical & Industrial Yarns is a unique advanced multi parameter monitoring system for the Industrial Extrusion Process, providing very accurate absolute data that offers clear benefits for the user in terms of excellent correlation with downstream performance.

The result of this continuous monitoring with **FibreTQS** is substantial quality improvements with:

- Better quality 1st grade yarn, together with a lower percentage of 2nd quality and reject yarn.
- Substantial improvements in downstream processing, including:
 - Higher Efficiencies
 - Lower break / stop rates
 - Lower levels of Off Quality

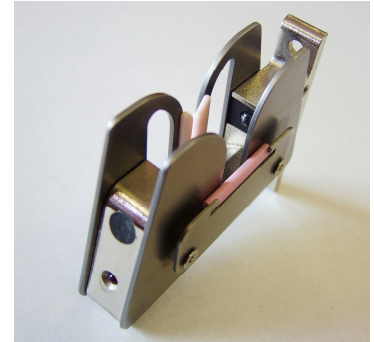
FibreTQS Sensors

FibreTQS provides **Optical Sensors** integrated in to the Industrial Yarn Extrusion Equipment to provide both simple operation and minimum guide contact. These are located in the winding area ideally after the interlace jet providing measurement of:

- Broken Filaments
- Slubs
- Denier Variation
- Interlace

Additionally the FibreTQS features:

- A Robust Compact design, fully Protected from Yarn Damage and fully integrated in to the threadline of extrusion equipment for easy operation with minimum guide contact
- Maintenance Free Automatic Contamination compensation, cleaning is not required in most processes, with Integrated health monitoring and a Fully Sealed design
- Not prone to false counts caused by waste or contamination - only faults running at yarn speed counted.



FibreTQS Quality Benefits

FibreTQS offers substantial Quality benefits as a result of:

Broken Filament Size	Uniquely, the sensitivity of FibreTQS can be adjusted in normal setpoint / merge files, providing flexibility to identify faults of different sizes
Slub Measurement	Uniquely, FibreTQS differentiates between normal Broken Filaments and the larger Slub events.
Interlace Measurement	Uniquely, FibreTQS accurately measures interlace with the same sensor as Broken Filaments, this is also key to good performance in downstream processes as regular Interlace is necessary to provide good filament to filament cohesion.



Key Quality faults quickly identified by **FibreTQS** in the POY extrusion processes include:

	Typical Cause of Faults	Typical Result of Faults
Broken Filaments /Slubs	<ul style="list-style-type: none"> o Damaged Guides o Faulty Spinnerets o Poor Pack Wipes o Misthreading 	<ul style="list-style-type: none"> o Stops in down stream process o Low Downstream Efficiencies o High T + I Process Break Rate
Interlace Level	<ul style="list-style-type: none"> o Damaged / Faulty Air Jets o Contaminated Air Jets o Misthreading 	<ul style="list-style-type: none"> o Stops in Downstream process o Low Downstream Efficiencies o Slubs

FibreTQS - Cost Benefits

In addition to the Quality Benefits, which can provide significant profit improvements there are substantial direct cost savings that can be achieved with the use of **FibreTQS** monitoring, these include:

- Interlace Cost** **FibreTQS** enables operation at lower pressures whilst overall quality is maintained or improved
- Testing Reduction** **FibreTQS** allows most routine laboratory and At-Line testing to be eliminated.
- Claim Reduction** **FibreTQS** reduces claims by preventing shipment of off quality packages and by providing detailed data for each package shipped
- Maintenance** **FibreTQS** provides extensive facilities for monitoring parameter trends to enable maintenance cycles to be fully optimised
- Process** **FibreTQS** enables rapid optimisation of the process

FibreTQS - Operational Benefits

The data from the sensors is processed in distributed “sections”, with both quality fault and summary data being passed to the **FibreTQS** PC software which stores extensive quality data for both the process and each package produced. Key features of **FibreTQS** are:

- Quality Indicator** To ease **FibreTQS** operation provides the *option* of Quality Indicator at each position to indicate the current running quality and the grade of the last doffed packages.
- Package Quality Reports** Full quality reports on every package produced, including the mean and variability of each monitored parameter as well as details of any off quality events.
- Quality Alerts** Automatically identifies threadlines that are either drifting towards limits, or are producing significant levels of quality faults over a range of doffs
- Current Data** Full details for each threadline, including real time views and details of off quality events
- Historical Data** Trend data for each monitored parameter is available for each threadline and each merge group to allow assessment of both long and short-term process trends.

