FAG VipPAQ

Production Monitoring
And
Quality Control

Inline Color Measurement System for the Flexography and Gravure Industries

Draft Ed. 1c

Description

- First **INLINE multi-channel densitometer** available for Flexography
- **Compact** size
- 9 - channel densitometer to measure density of **process and spot colors**
- Standard 45/0 optics with polarization filter to be **compatible with standard handheld measurement devices**
- Prepared **for a high print speed** (up to 10m/sec)
- **Modular system**:
  - 2 to 4 measurement units
  - Controller unit
  - Software

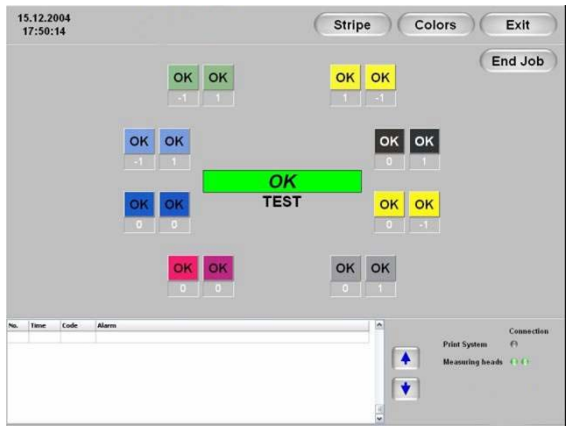
Software

- **Clear user interface,** prepared for touch screen operation
- Data can be visualized in **real time**
- All data can be saved in **database for statistical analysis**
- **Trend analysis for each color**
- **Print detailed quality reports** for the customers
- Optional: **Closed loop** SDK for direct control and regulation of printing press

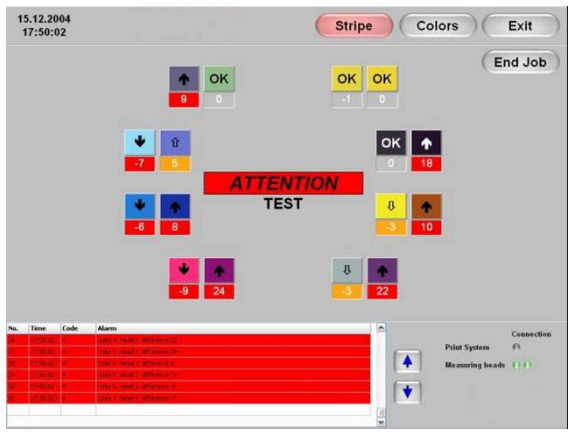
User Interface

Print Run:

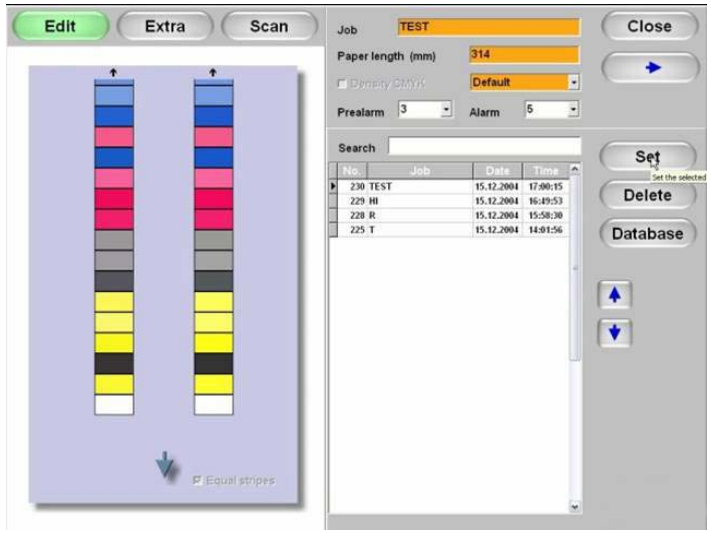
OK:



Out of Tol.:



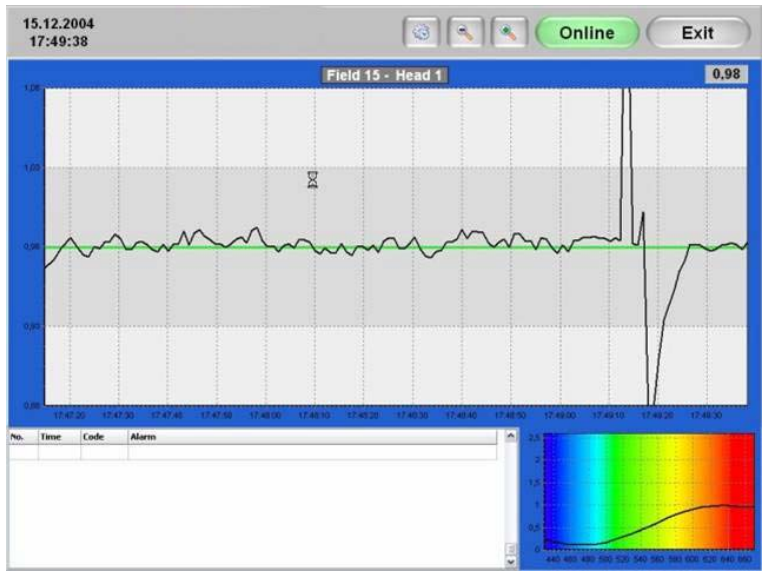
Automatic Control Strip Detection:



User Interface

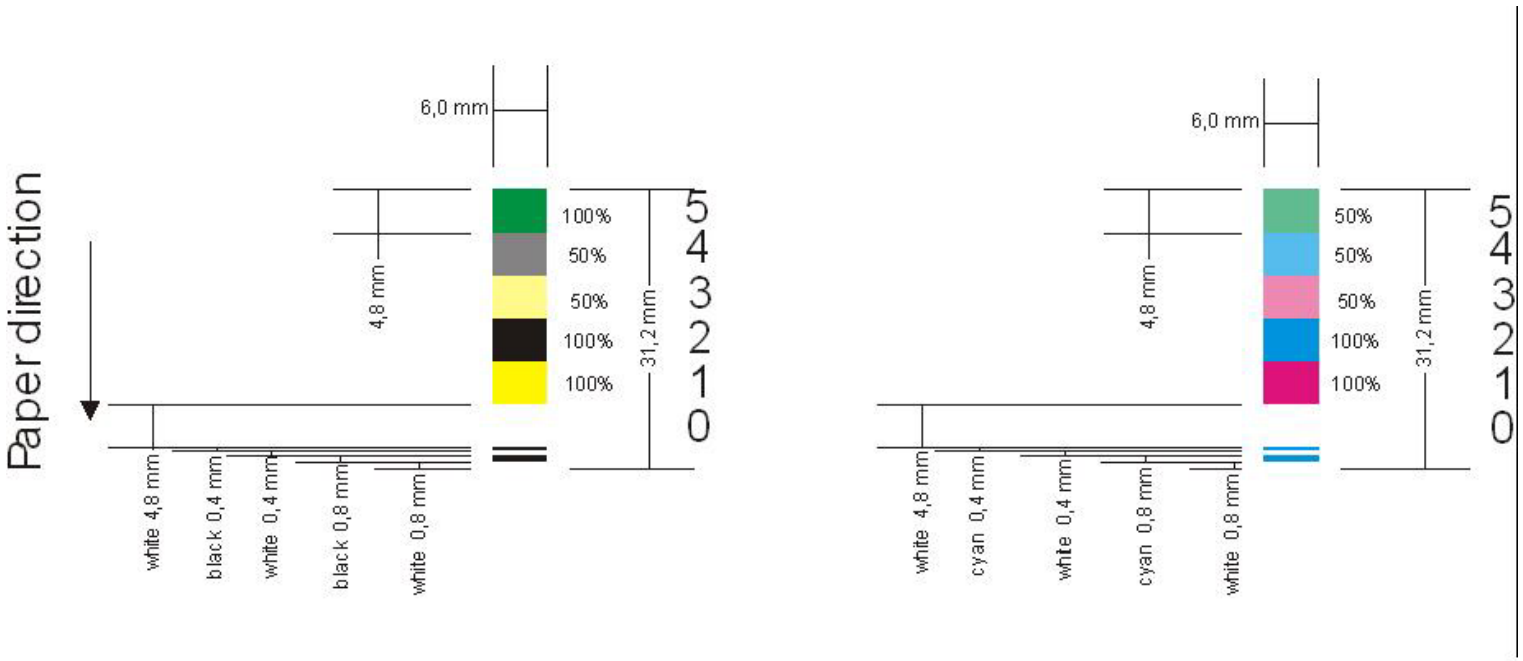
Control strip overview

Trend analysis



Control Strip Specification

- Min. space required: 6 x 31.2 mm to monitor 5 colors

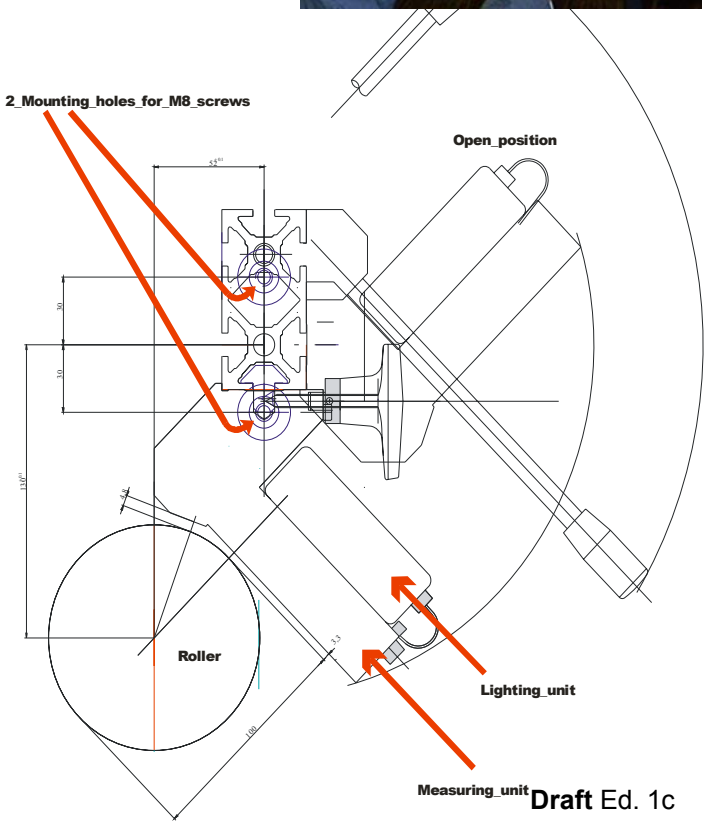


Specifications

Print Speed	0.5 m/sec ... 10 m/sec
Substrates	Paper, Plastics
Density Range	0,01 - 2,3 D (paper white based)
Repeatability (Standard deviation of 100 measurements)	Max. +/- 0,02, resp. +/- 0,02 x D e.g.: +/-0,02 up to density 1,00 +/-0,04 for a density of 2,00
Power Requirements	110 - 220 VAC, 50/60Hz, 0,75 A max. (Fuse 2A/250V)
PC Requirements (PC not part of package)	Interface: USB 1.1 Monitor Resolution: 1024x768 CPU: min. 700 MHz RAM: 128MB Hard disc: 20 GB Operating system: WIN 2000, WIN XP

Mechanical Installation

- Only 4 holes to drill
- Only one person needed
- Installation takes less than half an hour (if press is prepared by press manufacturer)
- 100 mm guide roller needed (black surface if double side printed)
- Non-explosive area due to Xenon flash



Service and Repair

- One single measuring unit = One spare part
- Spare part is a completely calibrated unit
- Change flash unit each 10^9 measurements
  For example:
  For 20 hrs/day at 10 Hz (5m/sec, Paper length 0.5m)
  Lifetime approx.: 1'400 days → ~ 3.8 Years
- No moving parts → Limited mechanical service needed
- For very dusty environments: Optional compressed air to keep sensor clean

Customers Needs

- **Real Time Process Monitoring** to control deviations in: Substrate, Ink Viscosity, Print Speed, Pressure, Temperature, Ink Impurities.
- **Save Time and Material**
  - Avoid stopping of the press
- **Job Quality Control**
  - Improve quality
  - Measurements in „Reel to Reel“ and „Reel to Packaging“
  - Consistent quality (during print run, for reorders, for all shifts)
  - Give quality assurances to end customer
  - Better arguments in discussions with customers
- **Meeting ISO Standards**
  - The measurement values may be documented to meet traceability recommendations of ISO

Value propositions

- **Reduce setup time for print runs and early recognition of mistakes,** due to real time control of the actual print situation at control console
  → Save ink and paper
  → Raise productivity
- **Enables higher production speed**, due to no need to slow down of the print run for color quality inspections. Measurements in reel to reel possible.
- **Improves print quality** as 100% of the production process is controlled
- **Traceable job data**, for process standardization and customer satisfaction
- If although a problem occurs, it is **easy to locate the bad part** of the print run and remove it.

Benefits

Features	Advantages	Benefits
Process Monitoring	• Display print situation in real time	• Save costs due to customer complains • Save time due to less press stops for critical jobs • Higher press speed • Shorter ramp up time
Job Quality Control	• Document job quality in database • Compare jobs (remake of jobs) • Fast press setup (remake jobs)	• Certified print product • Marketing benefits • Argue against complains based on measured data
Upgrade of existing systems	• Existing printing equipment can be easely be upgraded (Only 4 holes to drill)	• Increase value of existing printing equipment
Optional Closed Loop	• Automatic press control and regulation	• No need for constant observation of the print run • Automatic stop of of print run in case of problems
Low Maitenance needed	• Long lamp lifetime • Easy replacement of parts • No moving parts	• System is always running • Low maitenance costs

Competitive Positioning

- The VipPAQ is the **only inline densitometer for flexography**, which uses the same measurement technology as standard handheld densitometers
- Advantages of the VipPAQ, with respect to camera based measurement systems:
  - **Higher performance** (Density Range, Accuracy, Repeatability) for density measurements
  - **Comparable measurement values to handheld measurement devices** (Camera systems have no polarization filters and there RGB sensors are at the wrong wavelength and are not according to any graphic standard
  - Less installation effort and space needed