

Partner Product

EBG 228-EN

FELTEN

**MITSUBISHI
ELECTRIC**
FACTORY AUTOMATION

PILOT® [Suite]

Total production management

Production intelligence
for increased manufacturing flexibility



e-Factory
Partner Product

**IMPROVED
QUALITY** 

Reduced downtime and higher quality output

**INTELLIGENT
DESIGN** 

Acquire Real-Time shop floor data from enterprise systems

**SPEED
UP** 

Identify hidden production efficiency potential

A holistic integration of processes



Seamless flow of data from plant floor to MES

Manufacturers striving for world-class productivity know that it is vital to have a seamless flow of data through all levels of the enterprise, from the plant floor to the higher level business systems. With its e-F@ctory concept for plant integration, Mitsubishi Electric delivers this seamless integration between automation systems and higher level software-driven applications such as MES and ERP.

But Mitsubishi Electric also recognises that the traditional approach to MES can be a limiting factor in its own right to fully maximising productivity, failing to deliver the flexibility in processes that will drive true production optimisation. Flexibility is a crucial factor for success, particularly where there are complex planning requirements and large numbers of products requiring many production steps.

What is needed instead is a holistic approach to production management that will deliver on the goal of intelligently controlled production processes – recognising that it is the processes themselves which are the essential capital of production management, because they determine not only the quality and quantity of output, but also the degree of efficiency.

The future starts here

By combining Mitsubishi Electric's proven control hardware and seamless networking solutions with Felten Group's innovative PILOT [Suite] for increased process intelligence, manufacturers can finally realise the goal of truly flexible production, maximising OEE and driving towards world class manufacturing performance.

Technological innovations within the various PILOT products give manufacturers the power and flexibility to adapt workflows according to individual needs, enabling them to make changes at any time and within minutes. Thus an optimal balance between automation and flexibility can be achieved.

Total production management

The products within PILOT provide a unique Total Production Management system that can be easily integrated into production structures, with a seamless flow of information assured through the Mitsubishi Electric e-F@ctory architecture. PILOT Total Production Management benefits include:

- Causes of production problems are detected immediately and can be quickly rectified
- Production downtime is significantly reduced
- Resources of production lines and processes can be selectively utilised
- PC free solution using reliable PLC technology
- Best Practice methods accelerate implementation of and support for lean management operations
- Return on investment is accelerated

Products within the PILOT [Suite] include PILOT [MES] (manufacturing execution system), PILOT [TPM] (operating and process data acquisition) and PILOT [WDS] (weighing and metering system), with their individual function modules – all integrated into a single unified framework and optimised to meet the requirements of production intelligence.

Decentralised and web-based, PILOT is cost-effective, flexible and readily scalable to deliver benefits on anything from a single production line to an entire plant.

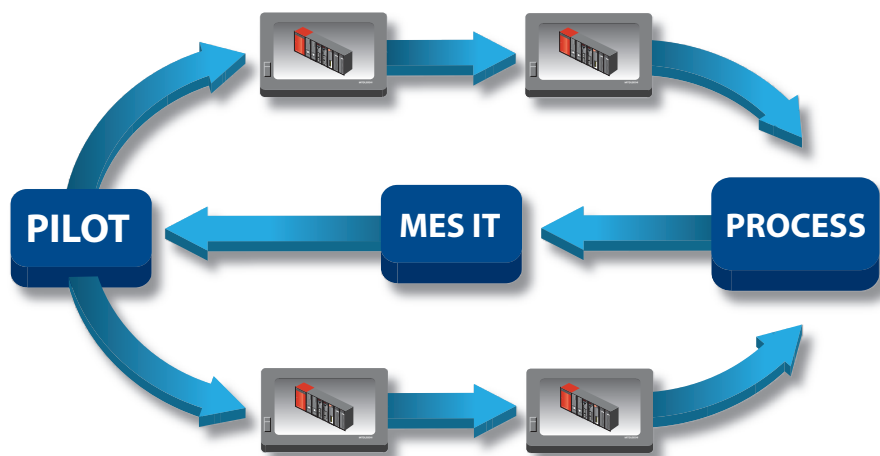
PILOT [MES] production management

PILOT [MES] records all production-relevant order, operating, machine, quality and maintenance data, which are then documented in reports company-wide, and subsequently archived. Current and historical process values and conditions can be represented numerically as well as graphically. An alarm message is automatically triggered if present limit values are exceeded in running manufacturing processes.

PILOT [MES] provides the essential link between the machine level and the business ERP systems. It enables detailed planning, control and feedback of the order processing to be realised more flexibly and more productively than with classical MES systems, thanks to more intelligently controlled production processes.



PILOT® dashboard



PILOT® TPM concept

PILOT [TPM] the OEE Downtime system

PILOT [TPM] identifies the sources of loss in manufacturing processes, so reducing downtime to a minimum. Mitsubishi Electric's e-F@ctory concept for seamless integration enables all the required data to be transferred to the intelligent MDC/PDC system, opening new perspectives for productivity optimisation and helping to boost Overall Equipment Effectiveness (OEE). The functionality of PILOT [TPM] can be readily customised to provide:

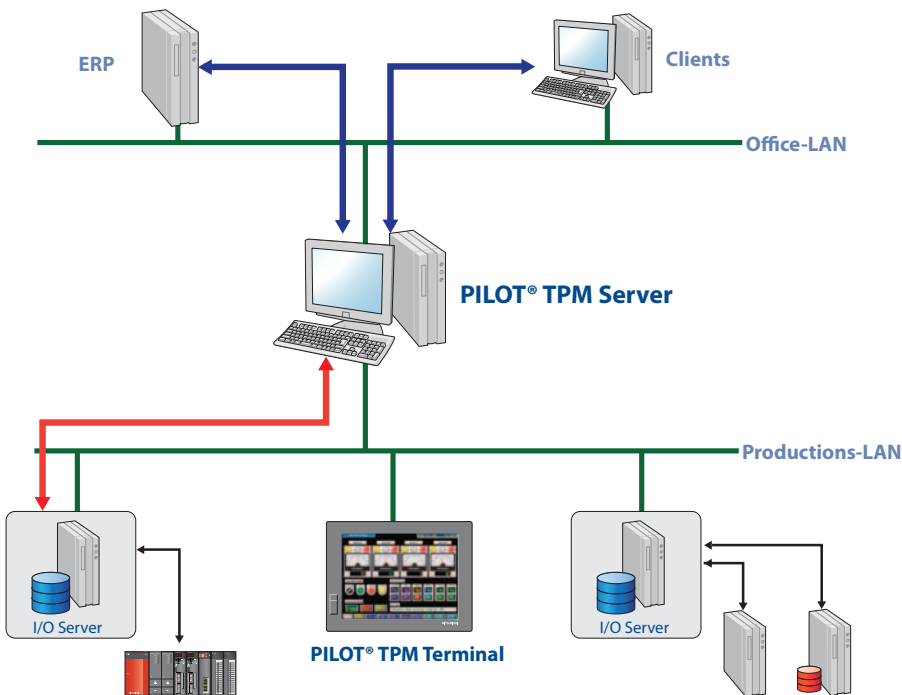
- Access to current and historical and historical process values or status
- Numerous diagram types and freely configurable reporting systems for visualisation and documentation of recorded data and results
- Configuration of groups and lines
- Logging of malfunction reasons
- Logging of downtimes and status changes
- Evaluation of machine data relating to shifts, order, batches and lines
- Trend & Dashboard views to visualize the calculated KPI's.
- Workflow based CIP (continuous improvement process)

Weighing and dispensing system – PILOT [WDS]

Weighing and dosing processes must be tightly integrated within the wider production process, to assure both the highest levels of efficiency and the accuracy required to meet product specifications. PILOT [WDS] allows GMP and FDA compliant weighing of raw materials for manufacturing processes and their automatic documentation.

PILOT [WDS] can be used with all brands of scales and terminals, and can be easily integrated into established MES, PPS or ERP systems. Weighing can be carried out on many weighing stations simultaneously, with all available scales then combined to a superordinate, web-based system.

Configuration ///



Typical PILOT® Total Production Management configuration

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