

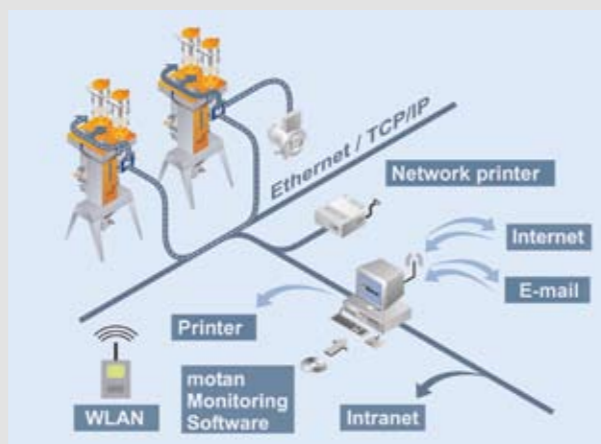
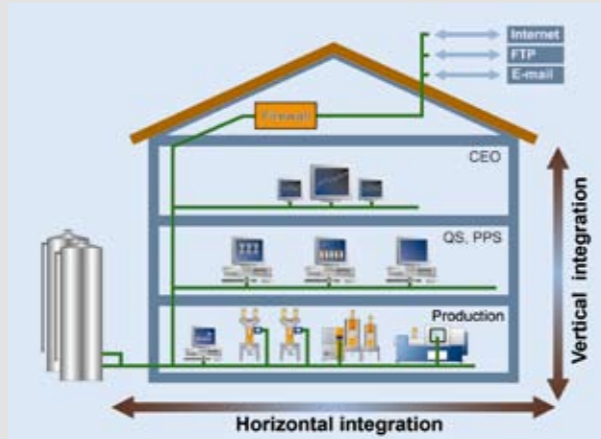
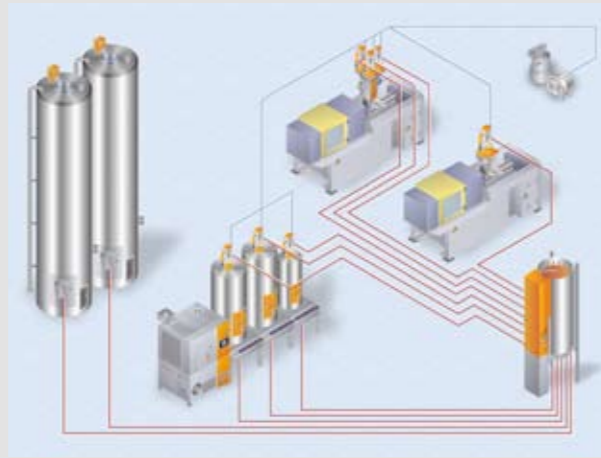
# CONTROLnet

## The CONTROLnet vision – a new direction for process control

The Ethernet-based operating platform CONTROLnet represents a major step forward in versatility and integration of controls in the areas of storage, drying, blending and conveying of plastics material. By using common communication standards the cost effective modular controls are expandable and allow for a degree of freedom and flexibility of operation impossible until now.

### Main characteristics

- Network technology using a common software platform for communication between all controls of the CONTROLnet range
- The decentralised CONTROLnet concept uses worldwide accepted standards such as Ethernet, TCP/IP, HTTP and e-mail
- Horizontal integration – ability to communicate with other units, e.g. one blower station can be shared between several GRAVICOLOR blenders
- Vertical integration – ability to link to and communicate with other Windows-based reporting and monitoring systems. Thus, data can be processed in common office softwares, such as Microsoft® Excel
- Operation and visualisation by system independent motan WEBpanels
- Optional integration to motan's LINKnet host processing system
- Open architecture for applications using Internet-based technology – ready for future development.



### Technical data LUXORnet and METROnet

CPU: "Embedded-Micro-Controller" system, power-failure-proof, with on-board network connection  
Alternatively: Siemens S7 technology with on-board network connection

I/O: CAN-Bus-Slave module via CAN open  
Siemens ET200S system module via Profibus-DP

Network: 1 Ethernet port on-board, internal 4 port switch, RJ45 connector

Operation: With motan WEBpanel (specification see below)

Interfaces: - Communication interfaces to motan WEBpanel and LINKnet  
- Inter-process communication to motan CONTROLnet controllers  
- Data interface to motan METROLINK (METROnet only)  
- Silo interface on demand (METROnet only)

### Technical data GRAVInet and METROnet light

CPU: "Embedded-Micro-Controller" system, power-failure-proof, with on-board network connection

I/O: CAN-Bus-Slave module via CAN/ESB

Network: Ethernet port on-board, RJ45 connector  
Operation: With local colour graphic 5.7" display with touch screen, QVGA, IP65 (front side)

Interfaces: - Report data interface to serial port and network  
- Communication interfaces to motan WEBpanel and LINKnet  
- Inter-process communication to motan CONTROLnet controllers

### Technical data WEBpanel 5.7

Panel: 5.7", colour LCD, graphic display with touch screen, QVGA, IP65 (front side), Microsoft® Windows CE .net operating system  
Alternatively: 12" graphic display with touch screen, SVGA, IP65 (front side), Microsoft® Windows XPe operating system

Network: Ethernet port on-board, RJ45 connector at housing

Options: - Integrated to front-side of control cabinet  
- Local self-contained unit connected by direct wire (2 or 6m)  
- Freely located in network by external hub/switch

Subject to technical changes.

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# CONTROLnet

## Your benefits

- A new control standard for operation and management of systems
- Ethernet network access on-board with every controller
- Freedom to choose from where the system should be controlled by networking WEBpanels
- System costs reduced by inter-process communication technology
- Flexibility and versatility; controls tailored to the individual installation
- Easy to use graphic controls; faster training, fewer mistakes
- Controls are integrated through a common operating platform
- Low cost expansion of modular system
- Future developments easily installed or retrofitted at low cost
- Enhanced data management and host processing
- Programmed maintenance schedules

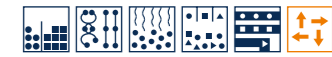
The CONTROLnet world – network technology and inter-process communication for the 21<sup>st</sup> century.



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# Controls



## CONTROLnet Ethernet-based integrated control systems

CONTROLnet is an integrated suite of controls. Designed to operate, manage and supervise every stage of the raw materials handling process. It offers the processor a completely new level of management capability, helping to meet the ever greater demands for product quality and cost efficiency.

Plastics processors need customised controls. This is made possible by modern inter-process communication, enhanced data management and intuitive, simple operation with efficient monitoring capability.

LUXORnet, GRAVInet and METROnet controls for drying, blending, conveying and storage, can be used as stand-alone controls or combined to form an integrated network. All controls can be operated through motan's WEBpanel – a full colour easy to use graphic touch-screen.



think materials management





## LUXORnet

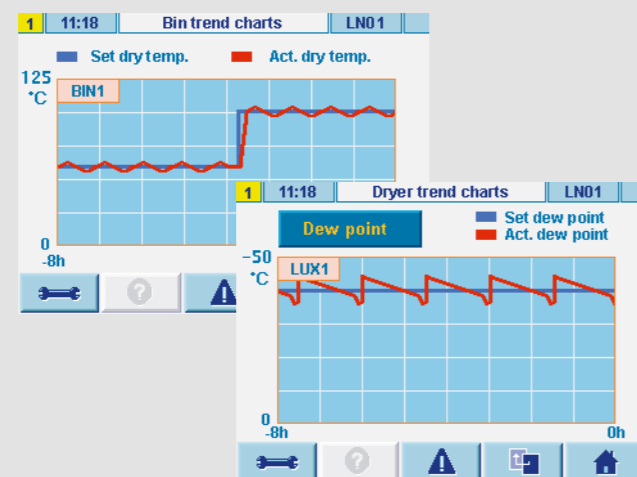
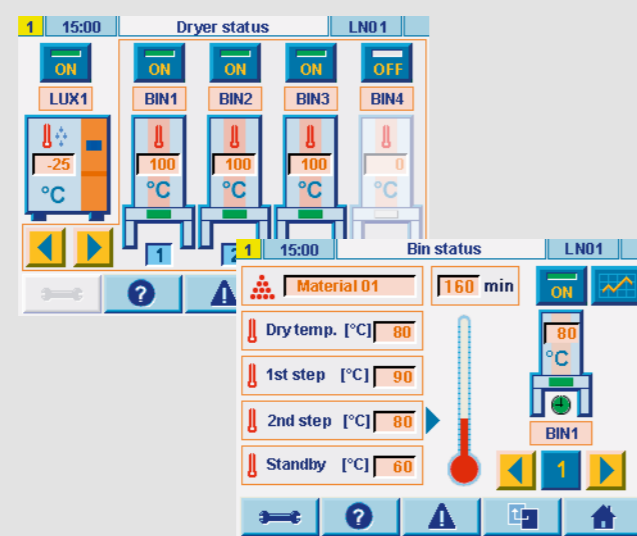
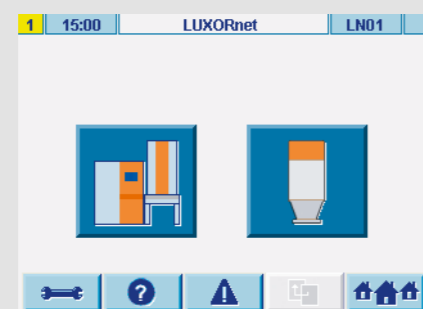
### Advanced control technology for the LUXOR A dryer range

LUXORnet offers greatly enhanced functionality:

- Supports one dryer, up to 16 drying bins and a maximum of 40 material loaders
- Microcontroller with CoDeSys technology and CAN-Bus technology or PLC with Siemens S7 technology
- Operation by WEBpanel at the machine or from a remote location
- DryingOrganizer material throughput monitoring and protection system
- ETA plus® – air flow control for need-based dry air quantity.
- Recipe management
- Fully programmable weekly timer
- Trend graphics and reports for documentation of the process
- Maintenance and diagnostic tools, such as operating hours counter and service interval counter, and messages
- Optional: dew point controlled regeneration; closed loop controlled aftercooler

LUXORnet can control up to 16 drying bins and incorporates a wide choice of modular conveying control packages. The integrated convey control includes all hopper loaders on the bins plus up to 24 material loaders on the machines and two blower stations plus one standby station. Other standard features include: line purging with material preselection, dry air conveying and emergency coupling between two conveying lines.

Ease and efficiency of operation is combined with highly economical plant utilisation.



## GRAVInet

### A new generation of blending controls for GRAVICOLOR mixing and dosing units

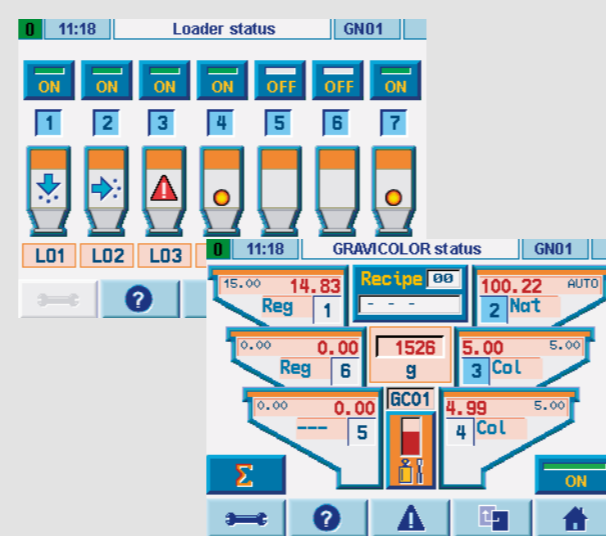
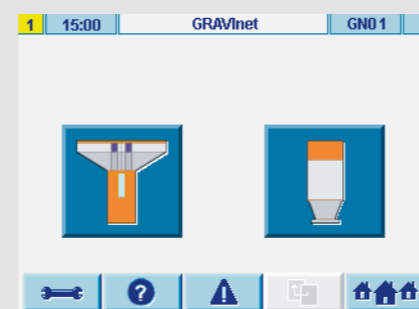
GRAVInet features:

- Intuitive operation by local colour graphic touch-screen or WEBpanel
- Embedded micro-controller for operation and control with on-board network port
- Full process control through IntelliBlend software – absolute recipe integrity by self-optimisation and automatic material calibration
- Vibration control for fast cycling injection moulding machines
- Recipe management
- Extended reporting capability at local level and to higher level plant data management systems

GRAVInet can control, manage and monitor a GRAVICOLOR unit with up to six material components.

The optional integrated convey control in GRAVInet manages up to seven material loaders and one blower with filter for the conveying system. The loaders can be used to feed other production equipment as well as the GRAVICOLOR itself.

Thus, for smaller applications, GRAVInet eliminates the need for a separate conveying control. More complex systems can be managed and controlled by linking multiple GRAVInet controls via the Ethernet network; inter-process communication at work, optimising performance and reducing systems costs.



## WEBpanel

Through a WEBpanel, any installed CONTROLnet control can be operated. The panels can be built into a motan unit or they can be freely located anywhere in the production facility.

WEBpanel features:

- Network-based independent operating panel
- Intuitive, touch sensitive colour graphic display
- On-line help
- Standardised navigation structure



## METROnet

### The ultimate system tool kit for complex plant conveying systems

METROnet features:

- Conveying control supporting all aspects of material logistics:
  - up to 99 material loaders with 1 or 2 inlets
  - integration of proportioning valves and suction boxes with line purging and dry air conveying
  - material selection from simple manual coupling stations to fully automatic METROLINK units
  - sharing of coupling stations between multiple conveying lines
  - up to 8 numbers of conveying lines (blower stations)
  - standby blowers with fully automatic switch-over valves
  - supervision and control of silos and material storage bins
- Microcontroller with CoDeSys and CAN-Bus technology or Siemens S7 technology
- Operation by WEBpanel
- Tailored to precise customer requirements

### METROnet light

A standardised central conveying control for typical systems. METROnet light features:

- Controls both 1 or 2 inlet material loaders (max. 24 single inlet)
- Up to four suction boxes with line purging
- Two blower stations
- Embedded micro-controller for operation and control with on-board network port

METROnet and METROnet light are totally integrated in the CONTROLnet platform and can be linked to other controls via Ethernet connection.

