

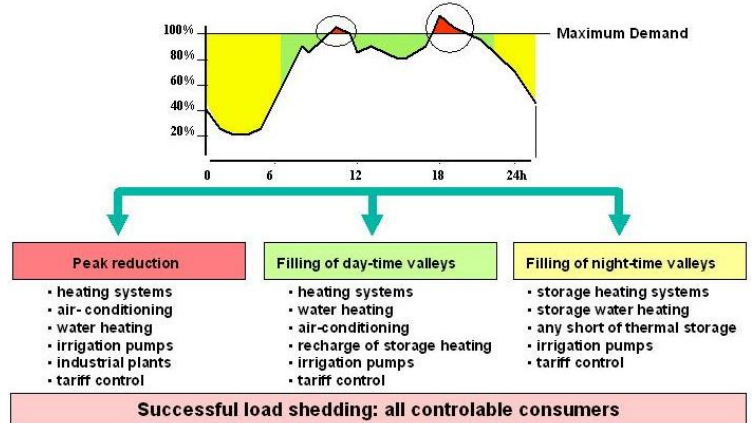
Load Management Master LMM 700

Control System LMM 700 – open und flexible

Electricity occupies a paramount place among the various types of energy available to us, mainly because it is simple and clean to handle, easy to transport over long distances, and can be cost-efficiently distributed to its end-users. In addition to these obvious advantages, however, it has one big drawback: it can't be economically stored in large quantities. So its generation has to be continually matched to the ongoing consumption level, and this consumption pattern is of course reflected in the load curves, with all their typical peaks and troughs. What this means in practice is that the entire energy chain, from the power station to the end user, has to be designed for peak load, even if this peak load only occurs a few times a year.

The capital investment needed to cover this requirement can be reduced and postponed, if appropriately selective load management systems can succeed in shifting load peaks into times of lesser load. The LMM 700 centre control system is the ideal solution for optimized load management.

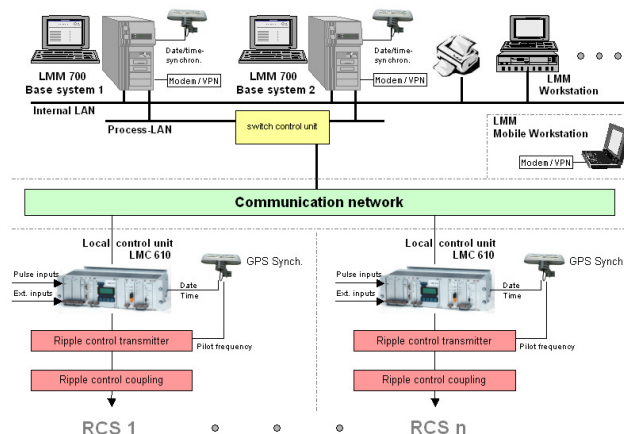
How to solve the load problem ?



It ensures continuous load monitoring and dynamic generation of switching commands as well as a complete system control thereby providing access to every load in the network from individual ripple control receivers through to major substation plants, etc. In addition, standard tasks like tariff switchovers, street lighting controls and enabling/disabling electric storage heaters are likewise covered. ELSTERS's extensive experience is your best assurance, that with the LMM 700 the load is securely under control.

Components

The foundation for the LMM700 system was created using the following criteria:



- Reliability in one or two computer system.
- Use of Windows 7 as Operating System.
- Use a local network based on Ethernet standard for communication between computers, data processing and systems involved.
- Use the global standard TCP/IP protocol for data communication on the Ethernet network.

To ensure the LMM 700 copes effortlessly with operating requirements, ELSTER has prioritised flexibility and performance at the design stage. This means the LMM 700 is ideal suited for a wide range of applications, and can be customized to the particular task involved.

LMM 700 – flexible control

Time-dependant control

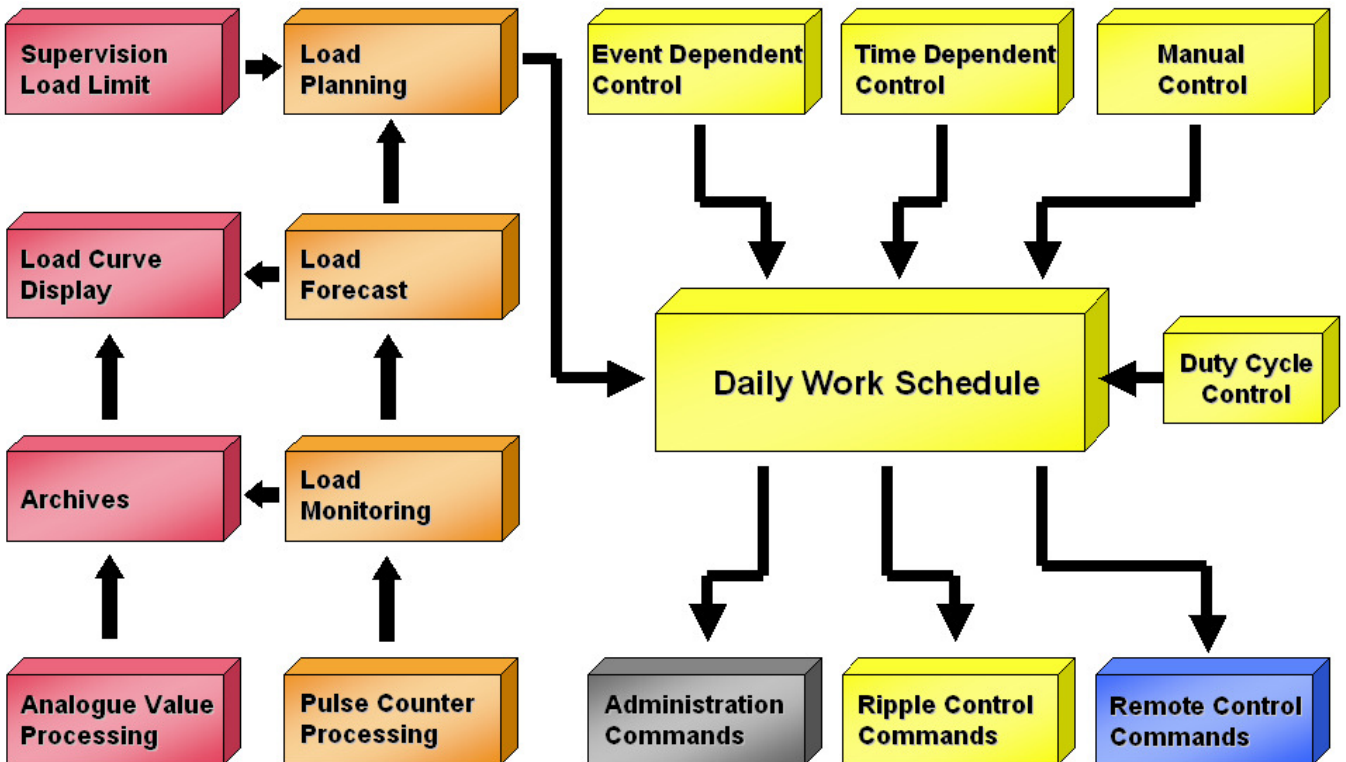
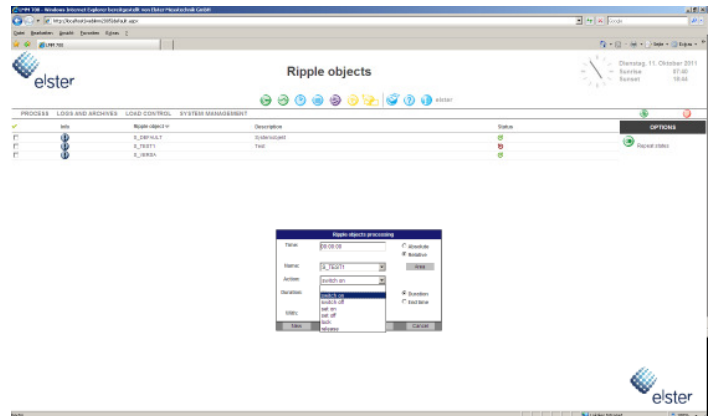
Time-dependent control is used when defined loads have to be switched at pre-specified times. The validity range for these switching operations can be varied by means of additional parameters, e.g. by workdays, Sundays, defined periods e.g. months or temperature ranges. Time-dependent controls are based on daily schedule generation, a routine which is executed every day at a time fixed by the user, or at system power-up. As the daily schedule is processed, commands are activated whenever the execution time entered coincides with the system time.

Event-dependant control

Event-dependent control utilizes the system's message inputs. Any desired switching operation can be assigned to any input. When the event occurs, an appropriate entry is made in the daily schedule for immediate or later execution. Event criteria enable the system to react to malfunctions as simply as reacting to external events; for example, street lighting can be controlled by means of dimmer switches to suit the ongoing light levels, fans can be switched on and off by contactors in response to changing climatic conditions, or emergency alarms (e.g. for the fire brigade) can be sent off by pressing a key.

Manual Control

The operator can intervene manually at any time to enter or modify control functions or program directives in the daily schedule. These are only a few examples of what makes the LMM 700 such a flexible, powerful and responsively customisable control system. With LMM 700, ELSTER has opened up new dimensions of load management, offering you tomorrow's technology today.



LMM 700 – Efficiency pays off

Load regulation and optimization

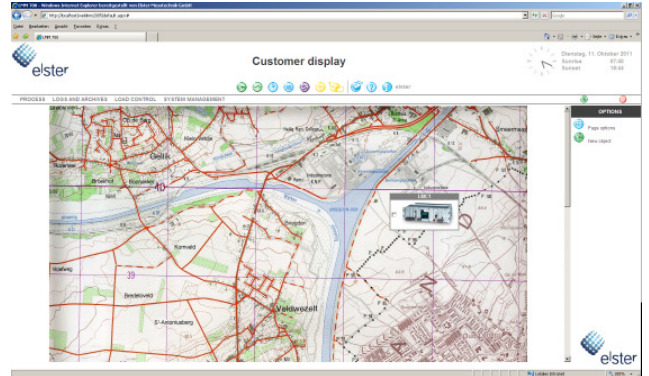
Load-dependent control is superimposed on time and event-dependent control, and its job is to monitor the power import agreed with the supplier in the ongoing billing interval concerned (ex. 15 minutes). It is not activated until the pre-planned control actions are no longer sufficient to maintain the permissible load mean in the interval involved.

To form the ongoing network load figure, count values are acquired by means of the LMC 610 control units, and weighted in the LMM 700 system. The load prognosis function uses this information to determine a trend as far as the end of the interval concerned, and computes a correction value for the load planning facility, which switches appropriate, loads off and on again as required. Values for the network load, and correcting values for load switching operations, can also be formed by an external system and transmitted over the computer link (e.g. LAN) to the LMM 700 system, which will then execute the required control actions.

Operator friendly Control

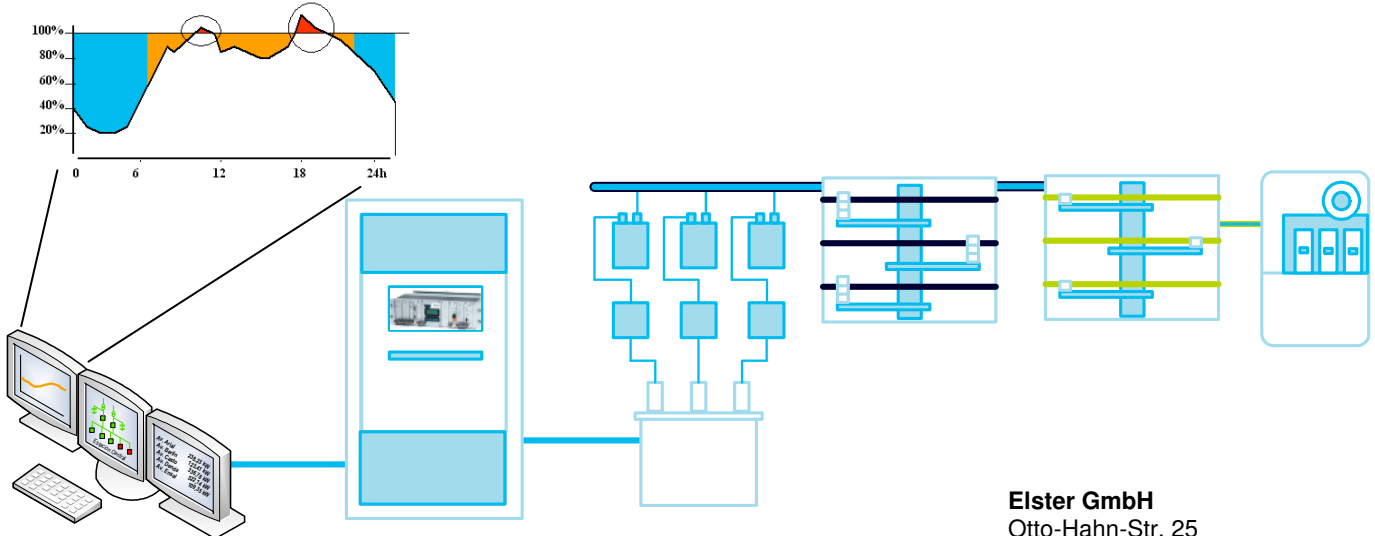
LMM 700 features modern interactive operator prompting, not only rendering specialized knowledge of computing superfluous, but also offering wide protection against operator error. Systematic guidance in the operator interface, utilizing differently coloured fields, ensures enhanced user-friendliness and ease of

handling. These colours are used as information carriers, and also to represent specific situations in process control displays. In fact, system operation is so user-friendly that your people will only need some brief familiarization before they can enter and modify data by themselves.



LMM 700 – cost-efficiency pays off

LMM 700 makes sure that network loads are cost-efficiently controlled. Load-dependent control options enable load peaks to be preventively flattened out in advance, and load troughs filled up by temporal relocation of consumer switching times. The cost savings thus achievable can help your investment pay off in a reassuringly short timeframe. LMM 700 - simple, reliable and powerful



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