

# Glossary M

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## Magnet

A magnet is an object that has a magnetic field. It can be in the form of a permanent magnet or an electromagnet.

[W Magnet](#)

## Matrix

[W Wikipedea's Matrix entry](#)

[Main article](#) available to MERG Members only.

## Memory Wire

Wire made from a special alloy which changes its molecular structure at a certain temperature causing it to shrink. This effect can usefully be applied to point and signal actuation. Some types require a tension spring to pull it back to its original length while others will return unaided, although a spring is still required to keep the wire tight, it can only pull when shrinking, it cannot push.

[W Wikipedia's entry](#)

See also TBs: [G19/01](#), [G19/02](#), [G22/01](#), [G23/01](#) & [G23/02](#).

## Microprocessor

A microprocessor (sometimes abbreviated  $\mu\text{P}$ ) is a programmable digital electronic component that incorporates the functions of a central processing unit (CPU) on a single semiconducting integrated circuit (IC).

[W Microprocessor](#)

microprocessor is a general-purpose name. Specialised devices:

A digital signal processor (DSP) is specialized for signal processing.

Graphics processing units (GPU) for rendering of images.

Microcontrollers integrate a microprocessor with peripheral devices in embedded systems..

System On Chip (SoC) often integrate one or more microprocessor cores with bus controllers.

## Mobile decoder

A DCC decoder intended for fitting in a loco.

## Modulation

Is the process of superimposing information onto a pure sine wave (Carrier wave), this process can be achieved by any of four methods, amplitude (AM), frequency (FM), Phase (PM) or Pulse (PAM, PWM, or PPM)

## MOMS

MERG Online Membership System - MERG's membership management system - used by Members to manage their contact details and renew membership and by the Membership Secretary for

administration purposes. Available via the MERG Forum

[Membership, Digest & Renewal](#)

## Monostable

An electronic circuit that has a single (mono) stable state and an unstable state, an input will cause the circuit to assume the unstable state, when the input signal is removed and after a predictable delay the circuit will return to the stable state. This behaviour is the basis of most timer circuits.

## MOSFET Metal-Oxide-Semiconductor Field-Effect Transistor

A MOSFET is a type of transistor with a Gate, Source and Drain terminals. [w MOSFET](#). They are the dominant type of transistor in electronics.

The resistance between Source and Drain (D-S) is controlled by the Voltage applied across the Gate and Source. A Voltage across D-S causes a current to flow in the D-S resistance. There are several sub-types...

- N channel uses positive Voltages or P channel uses negative Voltages
- Depletion mode uses increasing Gate Voltage to increase D-S resistance or Enhancement mode uses decreasing Gate Voltage to decrease D-S resistance

For MERG, the common type is N channel Enhancement mode.

*Compared to a Bipolar transistor, Gate = Base, Source = Emitter, Drain = Collector.*

The Gate exhibits a very high resistance (insulation) to the Source or Drain.

There being an insulation, the Gate has capacitance to the other pins and needs to be driven by a low impedance (AC resistance) input signal. A high impedance input signal will make the device slow. An open circuit Gate can build up a charge and results in the D-S going low resistance (turns 'ON').

## MSAG

**MERG Somerset Area Group**

# Multiplexor

A communications device that multiplexes (combines) several signals for transmission over a single medium. A demultiplexor completes the process by separating multiplexed signals from a transmission line. Frequently a multiplexor and demultiplexor are combined into a single device capable of processing both outgoing and incoming signals.

A multiplexor is sometimes called a mux and also spelled as multiplexer.

<http://www.webopedia.com/TERM/M/multiplexor.html>

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