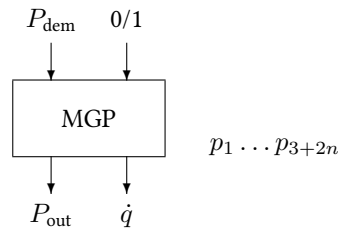


Block MGP

The MGP block returns the power output and fuel consumption of a Motor / Generator set.



Name	MGP
Function	se0020
Inputs	2
Outputs	2
Parameters	$3 + 2n$
Strings	0
Group	S

Inputs

- 1 Power demand P_{dem} / W
- 2 Switch s , which characterises the state of the motor ($s = 0$ off, $s = 1$ on)

Outputs

- 1 Actual power P_{out} / W of the motor
- 2 Actual fuel consumption $\dot{q}$ / ml s^{-1} of the motor

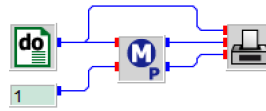
Parameters

- 1 Nominal power output of the motor P_N / W
- 2 Nominal fuel consumption $\dot{q}_n$ / ml s^{-1}
- 3 Number n of tabulated values of fuel consumption $y(x)$, where x represents the relative motor / generator power (normalized with the nominal power)
- 2i+2 Tabulated values x of normalised motor / generator power $i = \{1 \dots n\}$; the values must be given in ascending order, ie $2i + 2 < 2i + 4$ etc
- 2i+3 Tabulated values of fuel consumption $y(x)$ ml s^{-1}

Strings

None

mgp.vseit



A motor normalized to a power of 1 W is simulated by an **MGP** block with a fuel consumption of 1 at nominal power and 0.25 at idle speed. A **DO** block varies the demand between -0.1 W to $+1.1$ W to demonstrate the behavior of the **MGP** block when operated out of range.

The **PLOT** block shows that on overload the motor power is restricted to its nominal power. For negative demand values output power and fuel consumption are set to zero.

