

The diagram illustrates a control system for a water level in a tank. It features several interconnected blocks and feedback loops:

- Sistema Puro:** The primary control system, receiving a reference signal r and outputting a control signal u .
- Reserva variáveis e condições:** A block that stores variables and conditions, receiving signals from the primary system and the secondary system.
- Bomba elétrica vertical primária:** A block that receives a control signal u and outputs a signal y . It includes a delay block $T=15s$.
- Bomba elétrica 2ª:** A block that receives a control signal u and outputs a signal y . It includes a delay block $T=17s$.
- Bomba manual:** A block that receives a control signal u and outputs a signal y . It includes a delay block $T=1s$.
- Feedback Loops:** Multiple feedback loops are shown, including a main feedback loop from the output y to the reference signal r , and several internal feedback loops involving signals like z , w , and v .
- Output:** The final output of the system is y , which is labeled as "Bola com água".

The diagram illustrates a control system for a ship's steering. It features two main feedback loops. The first loop starts with a reference signal $R_{15} / y(s)$ entering a summing junction P_{14} . The other input to P_{14} is the output of a sensor P_{12} labeled "Sensor exterior". The output of P_{14} passes through a controller P_{16} and a plant P_{17} . The output of P_{17} is fed back to P_{12} . The second loop starts with a reference signal $R_{21} / y(s)$ entering a summing junction P_{20} . The other input to P_{20} is the output of a sensor P_{18} labeled "Sensor interior". The output of P_{20} passes through a controller P_{22} and a plant P_{23} . The output of P_{23} is fed back to P_{18} . The diagram includes various transfer functions and time constants, such as $1/s$, $1/s^2$, and $1/s^3$, and is labeled with "Sistema" and "Sistema de control".

Hand-drawn block diagram of a control system for a motor. The diagram shows a feedback loop starting from a reference input "Mag 2. vazio" through a summing junction, a controller "Mag 2. n/ pas.a", and a plant "Mag 2. Hc*". The plant output is compared with a feedback signal from a "Sensor Hc" to produce an error signal "e". This error signal is processed by a "Sensor Hc/n" block and then a "P(s)" block. The resulting signal is summed with a feedforward path from the reference input through a "T(s) Hc" block. The final control signal is summed with a disturbance "f" and fed into the plant. The plant output is also fed back through a "Sensor Hc" block. The diagram includes various transfer functions and blocks labeled with "s" and "t".

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