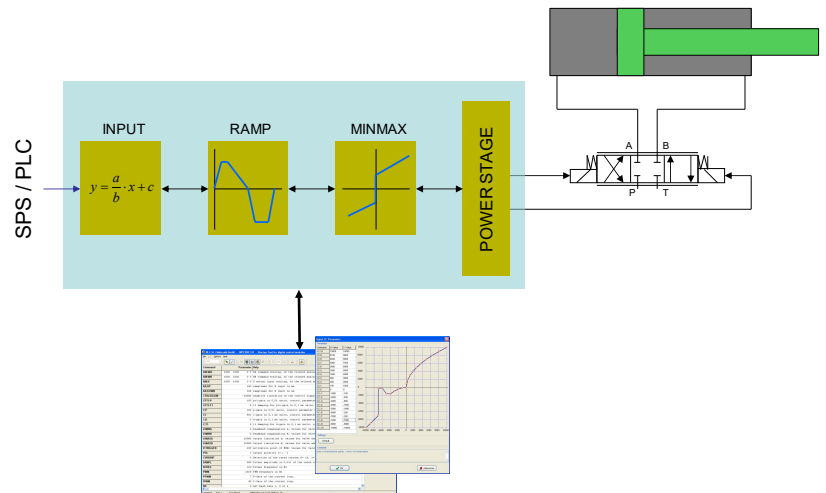


## PAM-199, the universal power amplifier

This digital power amplifier for proportional valves is the last product of a long list of different developments. As a key product for the hydraulic market, robustness, universal applicability and low costs are the targets of the development. Our amplifier in Snap-On housing has a very high functionality and can be started-up easily. As an independent manufacturer we are trying to ensure that our amplifiers work together with all typical proportional valves. They are very robust and the power stage is protected from wrong wiring and short-circuits.



Typical system structure

### Features:

- digital reproducible adjustments
- USB Interface
- short-circuit and temperature protection
- monitoring of the input signal range (for joystick applications)
- output current 0.5... 2.6 A programmable in mA steps
- suitable for 12 V as well as for 24 V power supply
- two independent channels for pressure or throttle valves or optimized for directional valves
- characteristic linearization via 10 XY-points per direction
- programmable PWM frequency from 80 Hz to 2.6 kHz
- optional with CAN (CanOpen) or Profibus interface
- adjustable with our WPC-300 start-up software

Compact power amplifier



## Selection guideline

The right selection of the different technologies of power amplifiers depends on requirements and especially on costs. This table will give an idea about the advantages and disadvantages of the different types of power amplifiers.

Power amplifier characteristics	Advantages	Disadvantages
<b>Plug amplifier</b> (available by W.E.St.)	<ul style="list-style-type: none"> <li>- Inexpensive</li> <li>- IP65</li> <li>- Simple wiring with M12 plug</li> </ul>	<ul style="list-style-type: none"> <li>- Functionality is restricted</li> <li>- Adjusting depends on installation point (placement of valve)</li> </ul>
<b>Electronics in Eurocard format</b>	<ul style="list-style-type: none"> <li>- Wide range of functions</li> <li>- Universally applicable</li> </ul>	<ul style="list-style-type: none"> <li>- Expensive</li> <li>- Complex expensive wiring</li> <li>- Time-consuming initial training</li> <li>- Hardly any new devices are developed any more on this basis</li> </ul>
<b>Snap-on housing</b> (available by W.E.St.)	<ul style="list-style-type: none"> <li>- Best price/performance ratio</li> <li>- Range of functions optimally tailored to scope of application</li> <li>- Simple to install in the electrical control cabinet</li> <li>- Space-saving design</li> <li>- Universally suitable for all typical proportional valves</li> </ul>	
<b>OBE, integrated in valves</b> (developed by W.E.St.)	<ul style="list-style-type: none"> <li>- Electronics and valve are mutually compatible</li> <li>- Optimal solution for valves with LVDT or for control valves</li> <li>- Usually no adjusting necessary</li> <li>- Standardized 6+PE connector plug</li> </ul>	<ul style="list-style-type: none"> <li>- Often <b>very expensive</b>: for valves without spool position control and particularly for valves with one solenoid</li> <li>- Functionality is reduced to a minimum</li> <li>- Problematic in critical ambient conditions</li> <li>- Adjustment options often unusable because of the location of the valve</li> <li>- Adjustment options prevent smooth replacement</li> </ul>
<b>Integrated in a PLC</b>	<ul style="list-style-type: none"> <li>- Integrated in a PLC (one unit)</li> <li>- Adjusting readily reproducible</li> </ul>	<ul style="list-style-type: none"> <li>- Rarely designed as a universal power amplifier or the specific hydraulic requirements</li> <li>- A precise suitability test is required</li> <li>- Relatively expensive</li> </ul>