

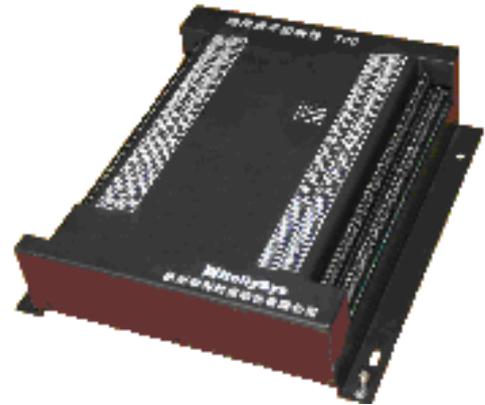
T80 / T80C

--- Turbine Controller



Overview

T80/T80C is a turbine controller, which is applicable to small and medium capacity industrial driving units. T80 is made up of industrial level components, complying with military standard GJB/Z35-93, and IEC61000-4 in terms of anti-Electro Magnetic Interference.



Features

- Totally digital electro-hydraulic (DEH) regulation design, possessing higher capability of anti-disturbance and function of servo power amplifying, able to directly control electric hydraulic converters, such as MOOG valve, DDV valve, VOITH valve, CPC valve, etc. and work with various hydraulic equipments of turbine manufacturers.
- Stable and reliable hardware and software system, tested by nearly 100 project references.
- Applicable to waste heat generation, garbage to power generation, biological mass energy electricity generation, etc., with professional proposal of Isolated Grid Operation, Thermoelectricity Decoupling Control, Air-supplementary Regulation, Sliding Pressure Operation
- Applied in various industrial driving systems, like pumps, compressors, blowers, to provide professional proposal of speed closed-loop, remote control.
- User-friendly HMI software respectively designed with simple turbine basic parameters setting for project engineers and reliable and clear operating interfaces for operators.
- Simulation test function.

Key Control Performance

- Speed control accuracy: $< \pm 1.0r/min$
- Load control accuracy: $< 0.5\%$
- Control cycle time: $< 50ms$
- Max. rising speed when rejection of full load: $< 7\%no$ (rated speed)
- Extraction Pressure control accuracy: $\pm 0.5\% Pe$ (rated extraction pressure)
- MTBF(Mean time between failure): $> 100,000$ hours

Main Function

- **Speed Control** on turbine startup and speed rising and lowering, with function of primary frequency regulation, isolated grid operation, etc.
- **Power Control** to realize automatic load control, to rise, lower and stabilize the load.
- **Extraction Pressure Control** to provide decoupling control of heat and power, working in the mode of heat-load-based or power-load-based.

- **Main Steam Pressure Control** to realize closed-loop control of main steam pressure.
- **Automatic Grid-connection** by working with automatic synchronization device.
- **Coordinated Control System(CCS)** works with DCS to perform CCS between boiler and turbine.
- **Overspeed Protection(OPC)** restrains speed rising to prevent turbine trip during load rejection.
- Function of off-line **simulation** test function.

Technical Specification

Power Supply	24VDC±10%
Consumption Current	600mA@24VDC
Speed Input Signal	3 channel, accepting square wave and sine-wave signal
Servo Control Signal	1 channel(T80), 2 channels(T80C), with output capability of ±200mA
Analog Input	16 channel, 4~20mA or 0~+10V can be selected
Analog Output	6 channel, 4~20mA, channel response time < 1ms
Digital Input:	24 channel, dry contact input, channel response time < 10ms
Digital Output	16 channel, relay output, channel response time < 10ms
Communication	Support MODBUS protocol, RS485 and RS232 ports are provided
Dimension	307*284*68.5mm(L*W*H)
Operating Temperature	0~45°C
Operating Humidity	5%~90% relative humidity, no-condensing
Storage Temperature	-15~65°C
Storage Humidity	5%~95% relative humidity, no-condensing
Protection Level	IP40, IP65.

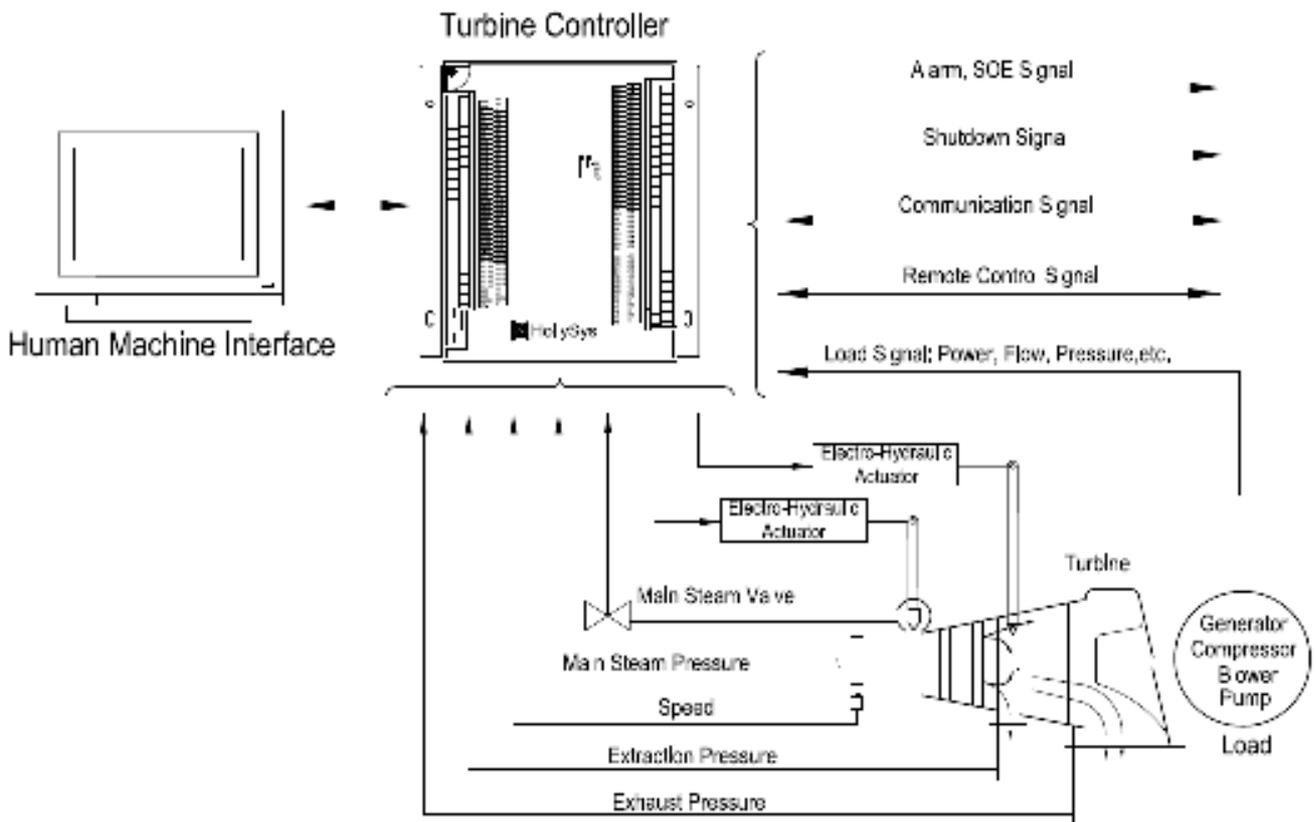


Figure 1: Schematic of Control System

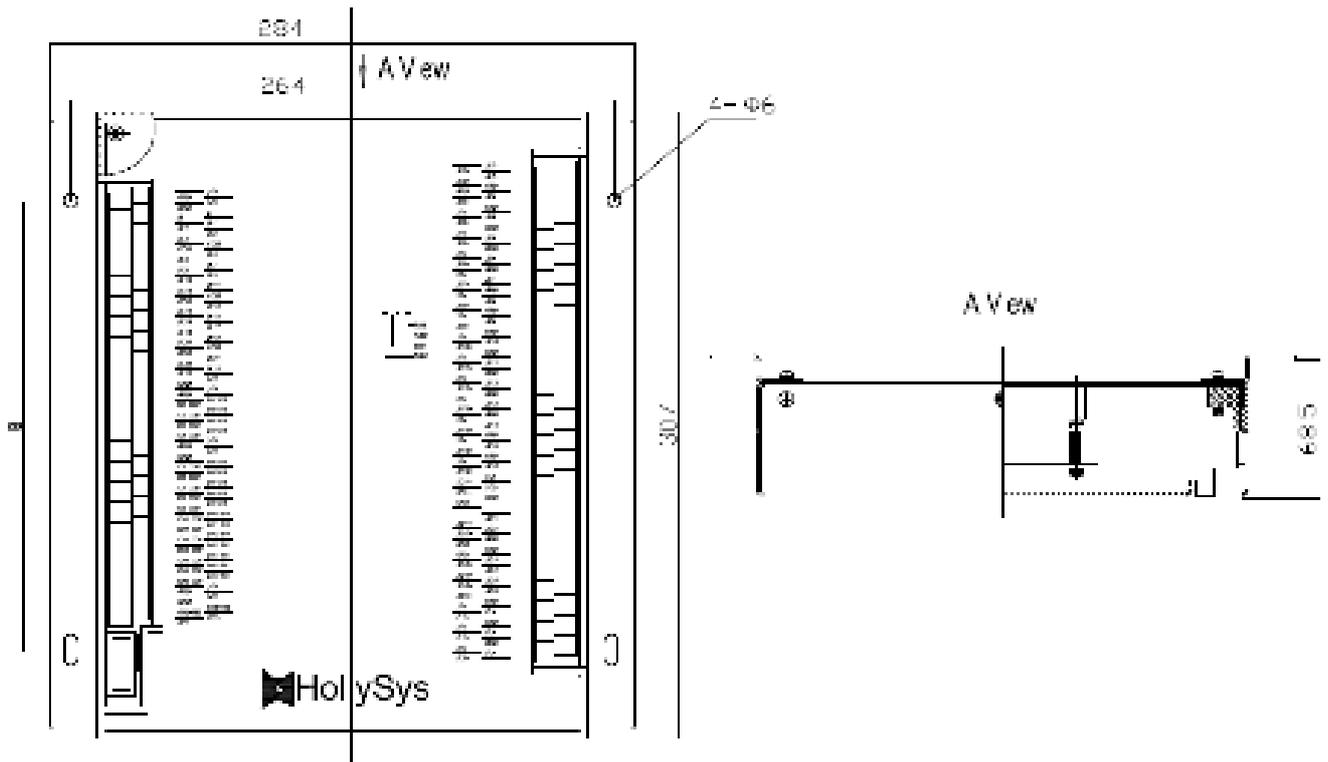


Figure 2: Dimensions

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