

EATON

Vickers

Electrohydraulic Controls Manual

Test Box EHA-TEQ-460-A-10

Assembly Number

02-326 127



General Description

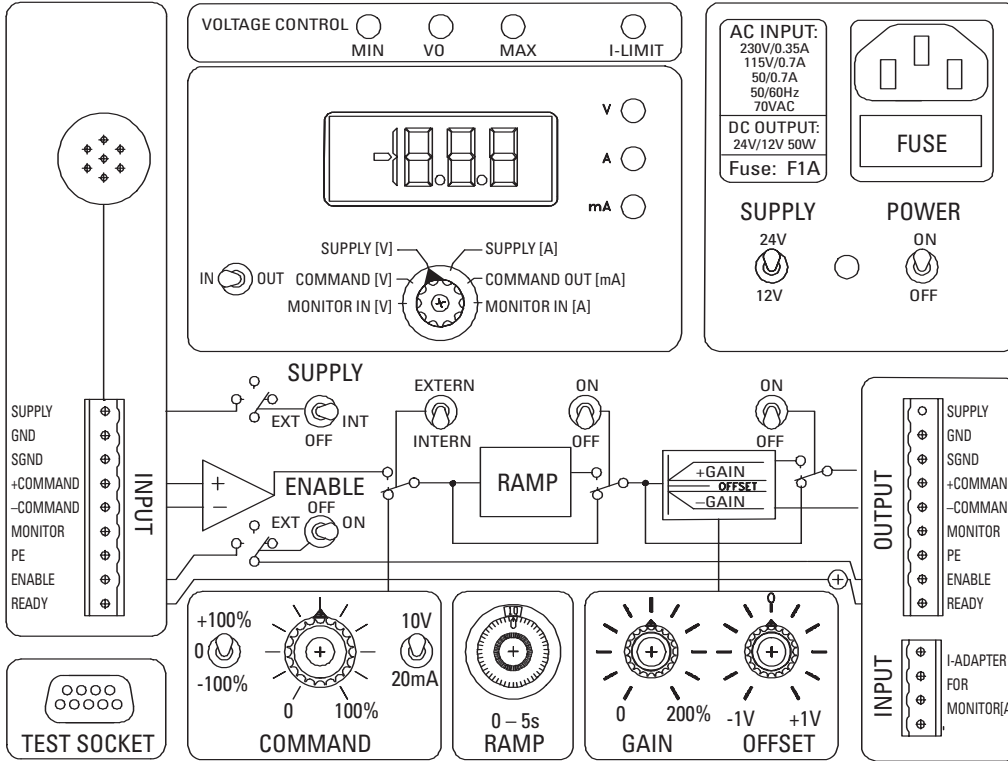
The Test Box is designed to test Proportional Valves and their electronics. The equipment is useful for hydraulic valves with integrated electronics, i.e.; KB-valves. The Test Box has an internal supply for 24V and 12V, which can supply one valve. The mains lead connects the test box with the outlet. The range from the main supply is 100V to 250V. A special cable connects the Test box with the electronics of the valve.

Features and Benefits

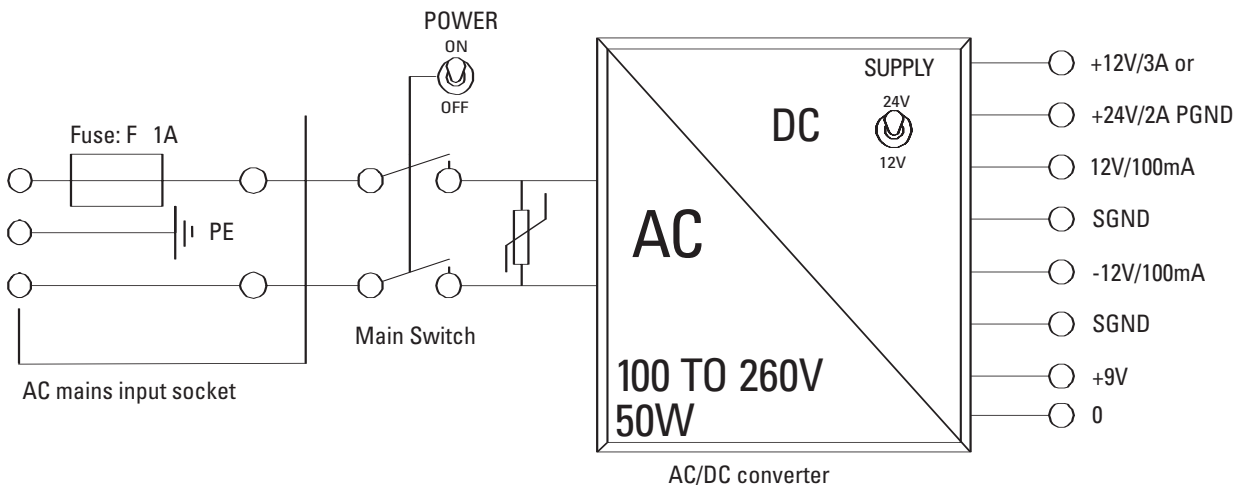
- LCD-panel for measurement several input and output signals (Voltage, command signal, main current and coil current)
- Own Power Supply
- Extra Command signal, ramp and additional Gain and Offset control
- Display for over or under voltage alarm and over current alarm

Front Panel

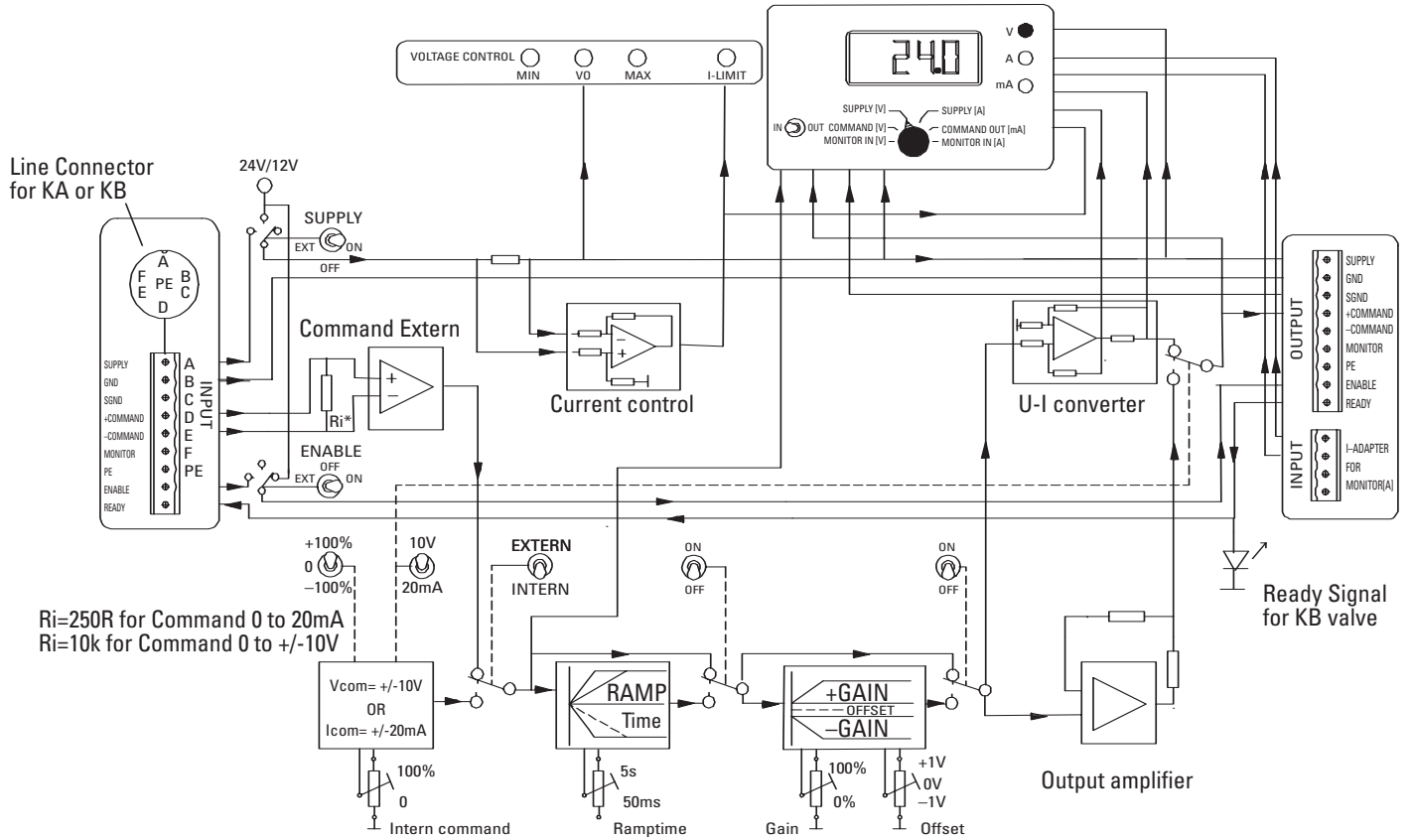
EHA - TEQ - 460 - A - 10



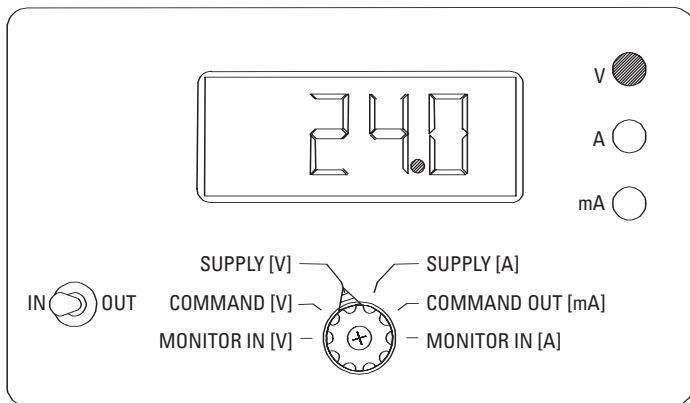
Power Unit (Electrical Block Diagram)



Control Unit (Electrical Block Diagram)



Function of the Front Panel



| VOLTAGE MEASUREMENTS | RANGE [DC] | CURRENT MEASUREMENTS | RANGE [DC] |
|----------------------|--------------------|----------------------|---------------------|
| Supply Voltage | 0 to 40 | Supply Current | 0 to 4.00A |
| Command in | -19,99V to +19,99V | ----- | ----- |
| Command out | -19,99V to +19,99V | Command out | -20mA to 0 to +20mA |
| Monitor in | -19,99V to +19,99V | Monitor in | |

Operating Data

ELECTRICAL

| | | | |
|--------------------------|------------------------------------|--|------------------------|
| Power input voltage | | 115V to 240V AC (50-60Hz) | +10% / -10% |
| Valve supply: | Internal External | 12V/ 3A or 24V/ 2A 12V or 24V | (4A peak) (3A peak) |
| Reverse polarity | | Yes | |
| Short circuit protection | | Yes | |
| Command signal internal: | Voltage command Current command | -10V to 0V or 0V to +10V -20mA to 0mA or 0mA to +20mA () | 0 to 100% 0 to 100% |
| Command signal external: | Voltage command Current command | -10V to 0V or 0V to +10V -20mA to 0mA or 0mA to +20mA | |
| Ramp times: | | 50ms to 5 sec | 10 turns |
| Gain adjust: | | -10V to 0V or 0V to +10V | 0 to 200% |
| Offset adjust | | -1V to +1V | |

Input signal

| Header: | 7 pin valve connector: | Function: | |
|---------|------------------------|-----------------------|---------------|
| 1 | A | Supply | 12V or 24V |
| 2 | B | Ground | |
| 3 | C | Signal ground | |
| 4 | D | Input command | |
| 5 | E | Input command | |
| 6 | F | Monitor for KB- valve | |
| 7 | G | Earth protect | |
| 8 | [C] | Enable external | On => 12V/24V |
| 9 | | Ready on/off | LED |

Output signal

| Header: | Function: |
|---------|-------------------------|
| 1 | Supply |
| 2 | Ground |
| 3 | Signal ground |
| 4 | Output command positive |
| 5 | Output command negative |
| 6 | Monitor for KB- valve |
| 7 | Earth protect |
| 8 | Enable extern/ off/ on |
| 9 | Ready on/off |

ELECTRICAL DATA

| | | | |
|--------------------------------------|-----------------------------|---|---------------------------------------|
| Monitor input For Current adapter | Header: 1 2 3 4 | + Current - Current | By using a special adapter 0 to 4A |
| Voltage control | Supply: Min Normally | VCC <20,3V or 11V 20,3V < Vcc < 30,0 V or 11,0V < Vcc < 16,0V | |
| Current Limit | Max Max | VCC <30,0V or <16V I _{max} > 3,0A | Peak current |

MECHANICAL DATA

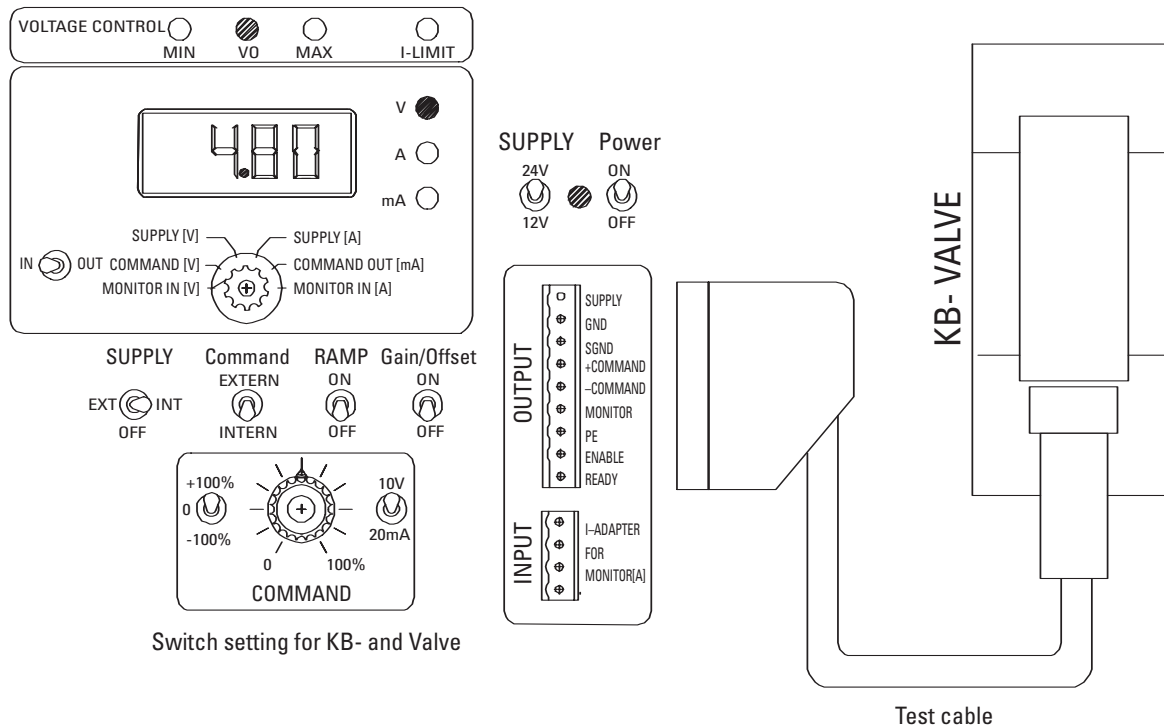
| | |
|------------------------------|--|
| Housing: | -Robust epoxy plastic case, color: black -Watertight (30 feet) and airtight protected by closed cover |
| Dimension: | 27,3cm x 24,cm x 17,8cm (10.7" x 9.5" x 7") |
| Temperature range operating: | 0 to 50°C |
| Storing | -20°C to 70°C |
| Mass | 0,7 kg (1.54 lb) |

Test Procedure for KB- Valve

With all hydraulic and electrical power turned off, connect the TEQ to the valve by setting the SUPPLY switch (2) to either 12 or 24 volts as required by the valve. Switch the POWER (1) to ON, the SUPPLY switch (5) to INT, and turn the GAIN potentiometer (14) to 100%. The valve can now be driven progressively in either direction by first setting the +100%/0/-100% switch (10) to +100% or -100% to select the direction and then turn the

COMMAND potentiometer (11) slowly clockwise (CW) until the required speed is achieved. Reverse operation can be achieved by reversing the +100%/0/-100% switch (10), and again turn the COMMAND potentiometer (11) slowly clockwise. Step inputs can be generated by pre-setting the amplitude of the input on the COMMAND potentiometer (11), and toggling the 100%/0/+100% switch (10) between on and off.

Setting the RAMP and OFF-SET potentiometers as necessary can simulate the circuit conditions. The GAIN control can be used to set the maximum output when the COMMAND potentiometer is turned fully clockwise. This means that the GAIN can be fully attenuated from zero to full output with only a 50% setting on the COMMAND potentiometer. The GAIN control will be most useful for adjusting externally generated signals, which allows the user a better ability to troubleshoot a system.



Switch setting for KB- and Valve

Test cable

Test Equipment

Test cable for KB- Valve

Eaton
14615 Lone Oak Road
Eden Prairie, MN 55344
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Tel: 952 937-9800
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www.hydraulics.eaton.com

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