Ultronics® Control Valve

Capabilities Brochure

ZTS16

Increase Your Productivity Through Advanced Valve Control

Ultronics® ZTS16 control valves drive up customer value through...

Enhanced Productivity.
Increased Flexibility.
Improved Efficiency.

Eaton's Ultronics® ZTS16 control valve is an integrated proportional valve package that delivers infinitely flexible machine functionality. This revolutionary system provides unrivaled level of performance, precision, control and diagnostics through patented twin spool architecture, integrated sensors and on-board electronics.

Enhanced Productivity

Product Overview

The Ultronics ZTS16's open architecture and patented twin spool design enables exciting new functionality and advanced control options for many applications and end-users.

Open Architecture

The valve features a J1939 or CANOpen CAN interface for communicating application level machine control demands, adjusting programmable valve parameters, and monitoring real-time valve performance.

This interface allows system developers to apply a complete Eaton® control system or simply a stand-alone valve.

Independent Twin Spool Valve Features

- Each valve section has twin independent metering for system functionality, flow and pressure control
- Monoblock design available 1 to 6 sections
- Work section flow up to 130 l/min
- System pressure rating of 300 bar per NPFA T2.6.1 (1 million cycles at 350 bar)
- Ambient temperature: -40˚C to 105˚C
- J1939 or CANOpen communication input
- Individual anti-cavitation and service port relief valve options
- Full closed loop control via embedded spool position and work port pressure sensors
- Independent, high performance pilot spool actuators
- Robust deterministic control architecture

Twin Spool Architecture

Eaton's patented twin spool architecture provides independent meter-in and meter-out capability by leveraging integrated pressure and spool position sensors, and on-board electronics. On-board processing and deterministic control architecture facilitates high performance closed loop control.

Cross Section

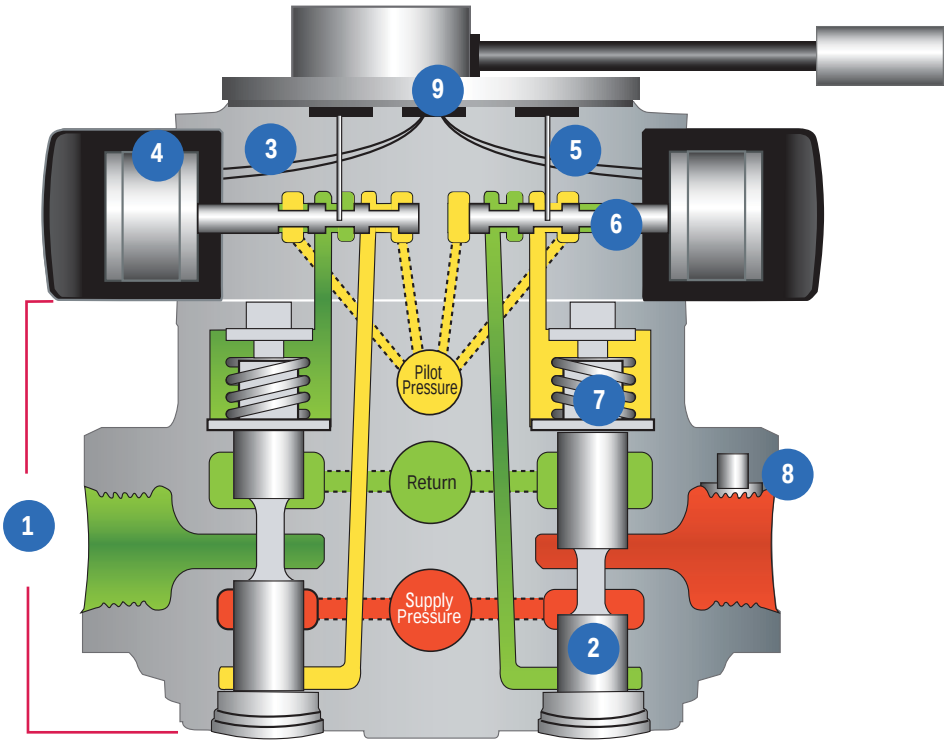
Each section contains two independent main spools (2) which are driven by an electronic pilot valve (3).

Each pilot valve contains embedded on-board electronics (9) with two independent high performance, low power proportional actuators (4).

For full closed loop control, each main spool has its own LVDT position sensor (7) and port pressure sensor (8).

TWIN SPOOL ARCHITECTURE CROSS SECTION

1 **Main stage valve block**
2 **Independent spools for metering**
3 **Pilot valve**
4 **Low power voice coil actuator**
5 **Centering spring**
6 **Pilot spool**
7 **LVDT Position sensor**
8 **Thin film pressure sensor**
9 **Embedded micro electronics**



Increased Flexibility

Product Benefits

Configurable Performance

Programmable valve parameters allow for rapid and broad changes in valve performance, which reduces system development time and provides functionality tailored for specific applications... improving system efficiency and increasing productivity without hardware changes.

Real-Time Diagnostics and Monitoring

Integrated sensors and configuration software enables real-time diagnostics and performance monitoring. This capability allows system developers to quickly and efficiently trouble-shoot and commission new systems.

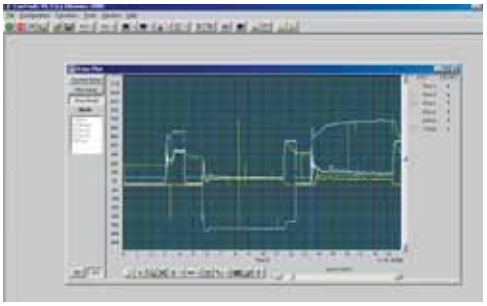
Precise Control

The patented independent twin spool architecture allows precise control of meter-in and meter-out flow, enabling optimized control for varying load conditions. The independent architecture reduces inefficiencies and performance compromises made in traditional single spool designs.

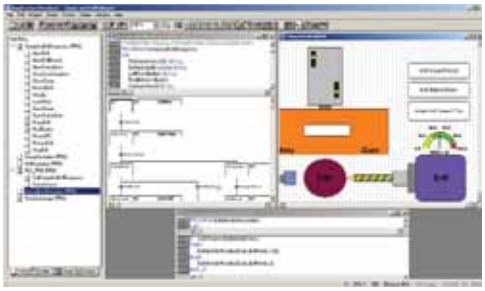
Unique Application Functionality

Ultronics ZTS16's open architecture allows users to develop their own application level programs using Eaton's ControlF(x)™ applications development software and EFX controllers, or by using their own controller and associated software. Eaton's ControlF(x) software features unique control functions that facilitate advanced system functionality.

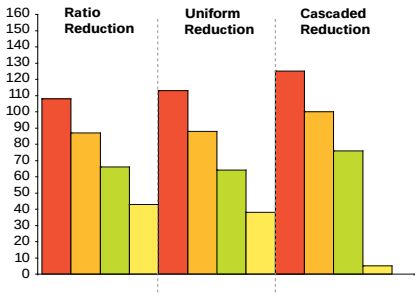
Robust Control Architecture



Real-Time Monitoring



Control F(x)™ Application Development Software



Configurable Flow Share

- Valve 1
- Valve 2
- Valve 3
- Valve 4

Eaton
14615 Lone Oak Road
Eden Prairie, MN 55344
USA
Tel: 952 937-9800
Fax: 952 974-7722
www.hydraulics.eaton.com

Eaton
20 Rosamond Road
Footscray
Victoria 3011
Australia
Tel: (61) 3 9319 8222
Fax: (61) 3 9318 5714

Eaton
Dr.-Reckeweg-Str. 1
D-76532 Baden-Baden
Germany
Tel: (49) 7221 682-0
Fax: (49) 7221 682-788

Printed in USA
Document No. E-VLDI-MR003-E1
Supersedes E-VLDI-MR003-E
April 2007