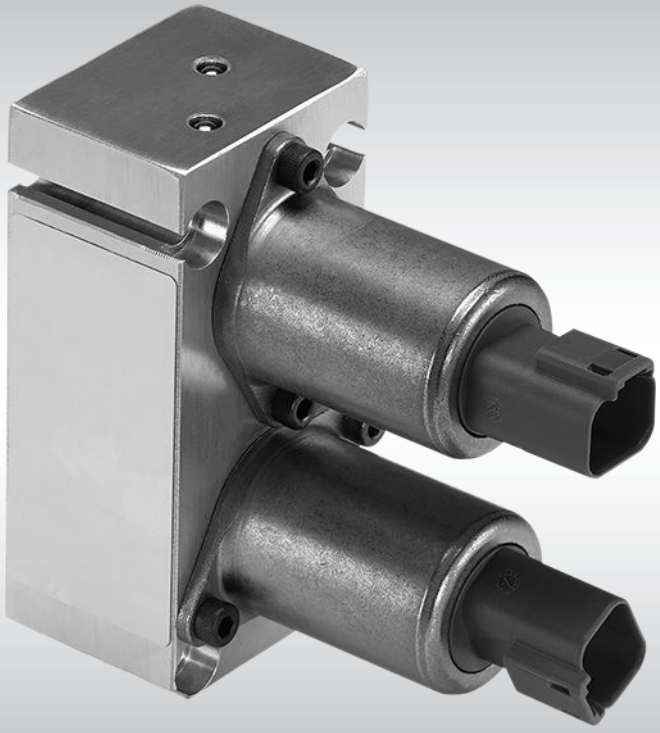
MAKING MODERN LIVING POSSIBLE

Technical Information

Electro-hydraulic Actuator

PVHC



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Revision history

Table of revisions

Date	Changed	Rev
May 2014	Converted to Danfoss layout – DITA CMS	AE
July 2013	PVHC code numbers changed, pages reduced to 8.	AD
December 2010	New back cover	AC
April 2010	Japan location	AB
April 2009	First edition	AA

Contents

General Information

Introduction

The PVHC is an electrical actuator module for main spool control in PVG 32 and PVG 100.

The actuator uses two current controlled proportional pressure-reducing valves.

PVHC does not use the known PVE internal closed loop control technology, and does therefore not offer any kind of fault monitoring system, neither active nor passive.

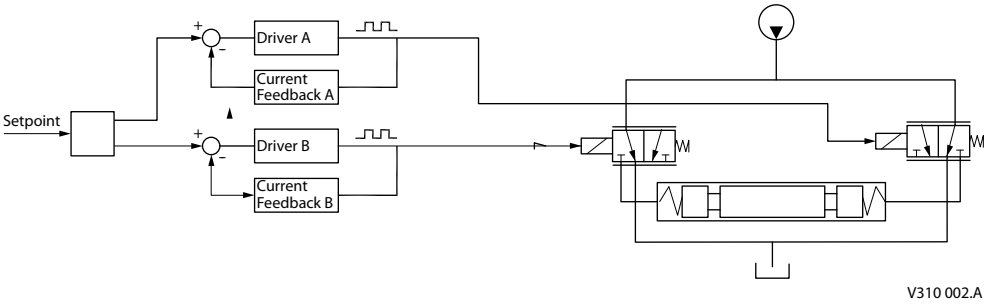
Function

With electrical proportional actuation, the main spool position is adjusted so that its position corresponds to an electrical control signal.

The control signal is converted into a hydraulic pressure signal that moves the main spool in the PVG.

This is done by means of two proportional pressure-reducing valves.

The electrical actuator can be controlled either by a current amplifier card, or directly from a programmable micro-controller.



Hydraulic Actuation

It is necessary to use the PVHC in combination with 25 bar [362.6 psi] pilot pressure, and standard FC spools fitted for hydraulic actuation. See PVG 32 Technical Information 520L0344 and PVG 100 Technical Information 520L0720.

Because of the 25 bar pilot pressure, it is not possible to combine PVHC with PVE on a PVG 32 or PVG 100 valve stack.

Features

- PWM current control signals.
- AMP JPT and Deutsch DT connector options.
- 12 V or 24 V supply options.
- Only to be used with 25 bar pilot pressure and hydraulic main spool.
- Possible to option mount the PVHC on PVG 32 and PVG 100.

Warning

All makes and all types of directional control valves – including proportional valves – can fail and cause serious damage. It is therefore important to analyse all aspects of the application. Because the proportional valves are used in many different operation conditions and applications, the manufacturer of the application is responsible for making the final selection of the products – and assuring that all performance, safety and warning requirements of the application are met. The process of choosing the control system – and safety level – could e.g. be governed by ISO 13849 (Safety related parts of control system).

Technical Data

Technical data input - output relation

Temperature

	Temperature range
Ambient	-30°C to 80°C [-22 °F to 176°F]
Medium	-20°C to 80°C [-4 °F to 176°F]

Input control

Parameter	Control range	
	12 V	24 V
Controller output current range	0 - 1500 mA	0 - 750 mA
Pressure control range	5 to 15 bar [72.5 to 217.5 psi]	
Resistance	4.75 Ω ± 5%	20.8 Ω ± 5%

Enclosure

Connector type	Protection class
Deutsch DT	IP 67
AMP JPT 12/24 V	IP 66

Filtering

Filtering in the hydraulic system	Max. permissible degree of contamination (ISO 4406, 1999 version): 23/19/16

Oil viscosity

Oil viscosity	Range: 12 - 75 mm^2/s [65 - 350 SUS] Min.: 4 mm^2/s [40 SUS] Max.: 460 mm^2/s [2130 SUS]

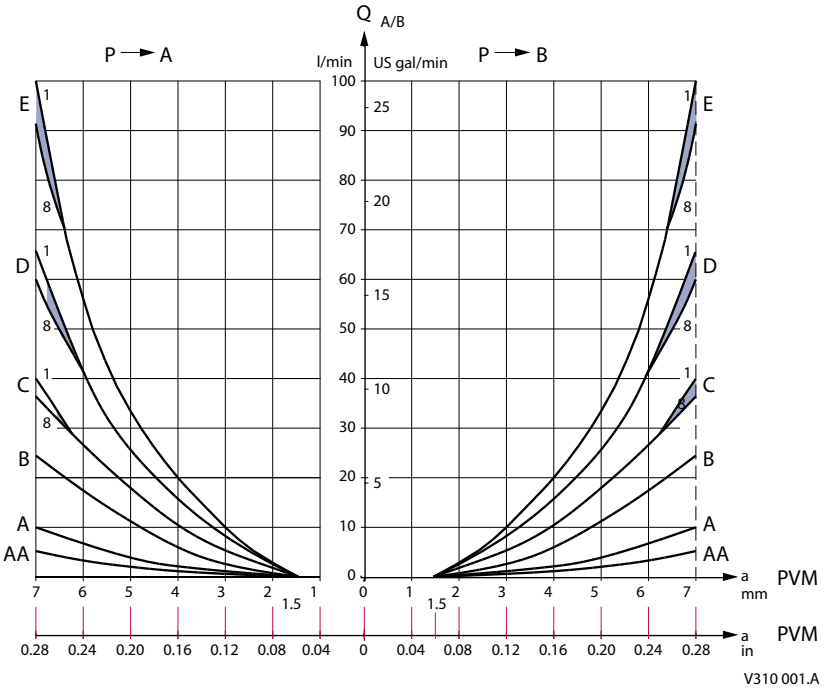
Pilot pressure

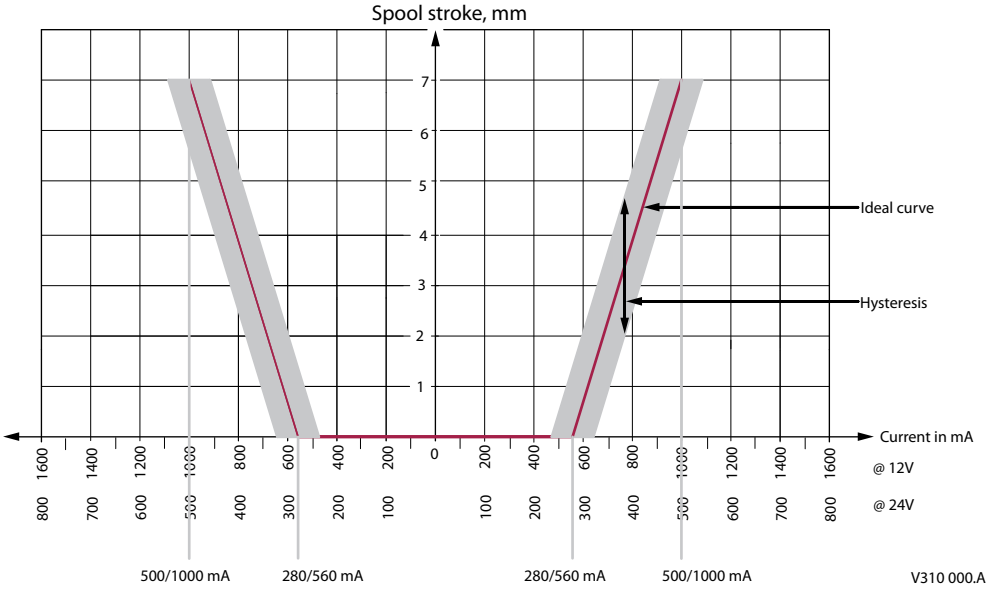
Pilot pressure (over tank)*	Nom: 25 bar [363 psi] Min: 21 bar [305 psi] Max: 25 bar [363 psi]

* Designed to be used with hydraulic activated spools.

Technical Data

Performance Graphs



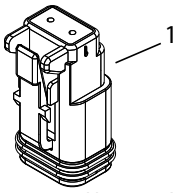


The ideal curve is determined by the main spool neutral spring. The hysteresis is affected by viscosity, friction, flow forces, dither frequency and modulation frequency.

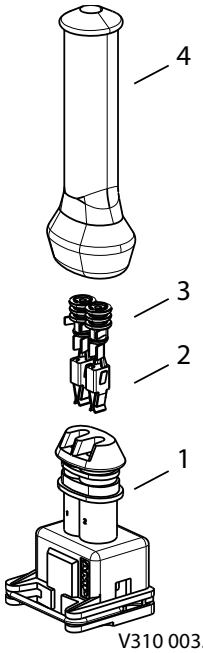
The PVHC is produced in an environment using mineral based hydraulic oil.

Connections

Deutsch connector

Pos. 1	Description	Qty	Deutsch code numbers
 V310 004.A	Housing	1	DT06-2S
	Lock Part	1	W2S
	Pin Contact	2	0462-201-16141 when SOC 16-18 AWG*
		2	0462-209-16141 when SOC 14-16 AWG*

AMP connector

Pos.	Exploded view	Description	Qty	AMP code numbers
1	 V310 003.A	Connector	1	282189-1
2		Contacts	2	929930-3
3		Contacts	2	828905-1
4		Superseal	1	880810-1

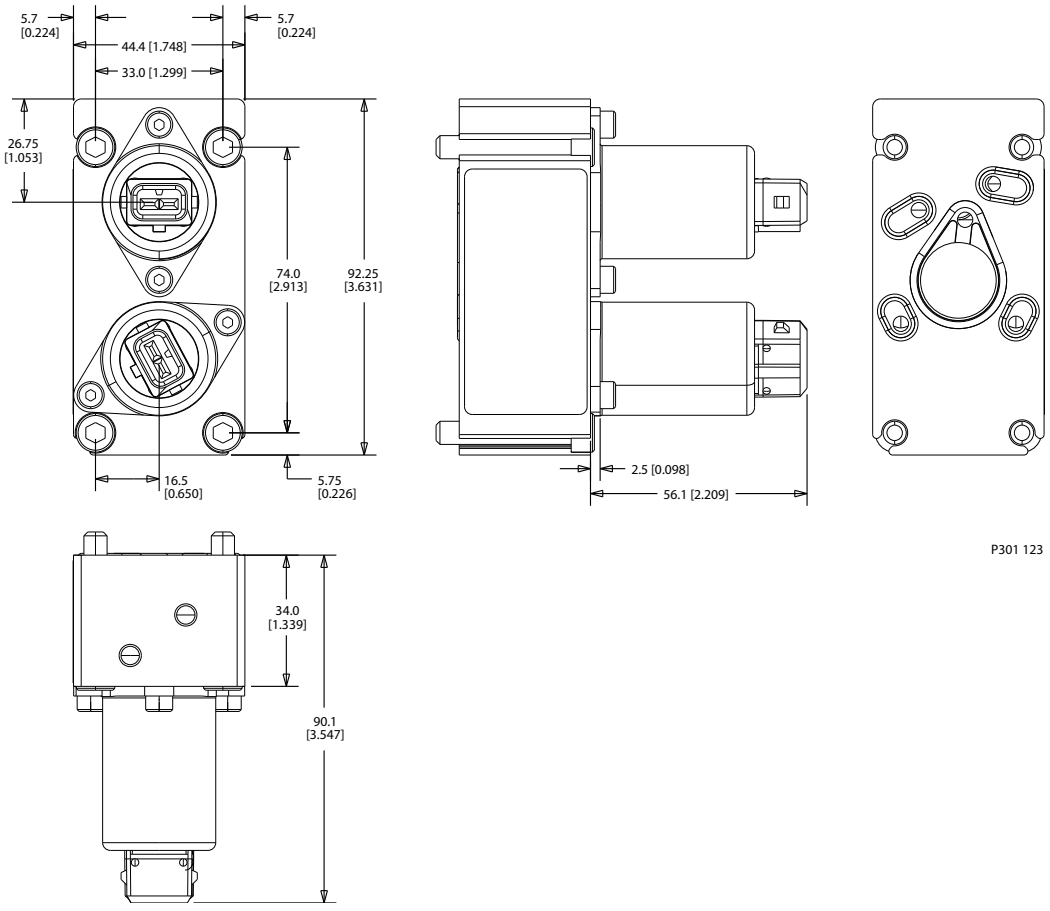
PVHC code numbers for use on PVG 32 / 100

PVHC, High Current PWM Actuator

	Code No. (12 V)	Code No. (24 V)
Amp. connector	11112037	11112036
Deutsch connector	11112038	11112039

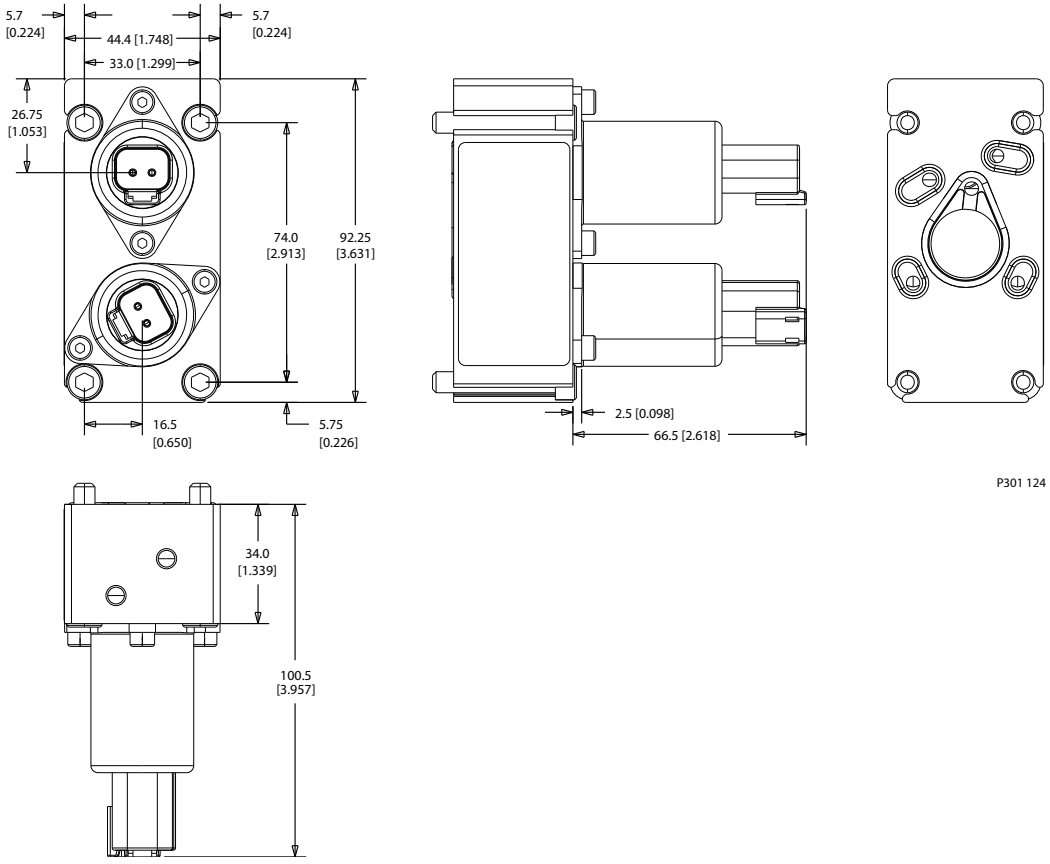
Dimensions

Dimensions for AMP connector



Dimensions

Dimensions for Deutsch connector



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www.daikin-sauer-danfoss.com

Local address:

Danfoss
Power Solutions US Company
2800 East 13th Street
Ames, IA 50010, USA
Phone: +1 515 239 6000

Danfoss
Power Solutions GmbH & Co. OHG
Krokamp 35
D-24539 Neumünster, Germany
Phone: +49 4321 871 0

Danfoss
Power Solutions ApS
Nordborgvej 81
DK-6430 Nordborg, Denmark
Phone: +45 7488 2222

Danfoss
Power Solutions
(Shanghai) Co., Ltd.
Building #22, No. 1000 Jin Hai Rd
Jin Qiao, Pudong New District
Shanghai, China 201206
Phone: +86 21 3418 5200