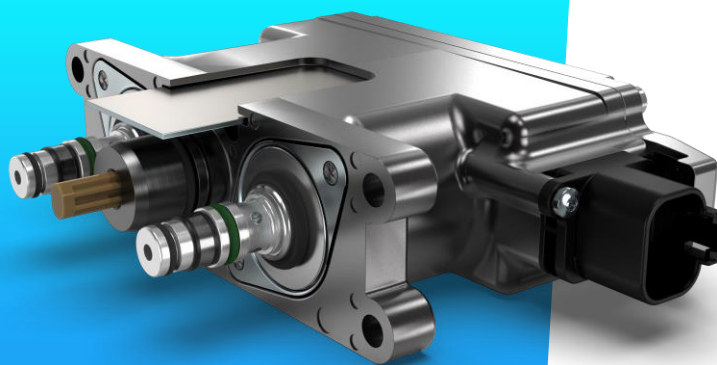


Electrohydraulic Actuator 2.0 [EHA 2.0] with NG-PPCD03 Fail-Safe



Product classification

Name	Max volume flow @ 6 bar dp
EHA 2.0	1,25 l/min based on NG-PPCD03 Fail-Safe
	2,5 – 5 l/min based on IPH-PPCD04
	2,5 – 5 l/min based on NG-PPCD04
	10 l/min based on NG-PPCD05

Proportional
valves

Directional
valves

**Smart
products**

Special
designs

Benefits and Application

- ≡ Work and Steering Solutions
- ≡ High precision sensor control
- ≡ Personalized support
- ≡ Up to Performance Level d
- ≡ Intuitive operation



Hydraulic Data

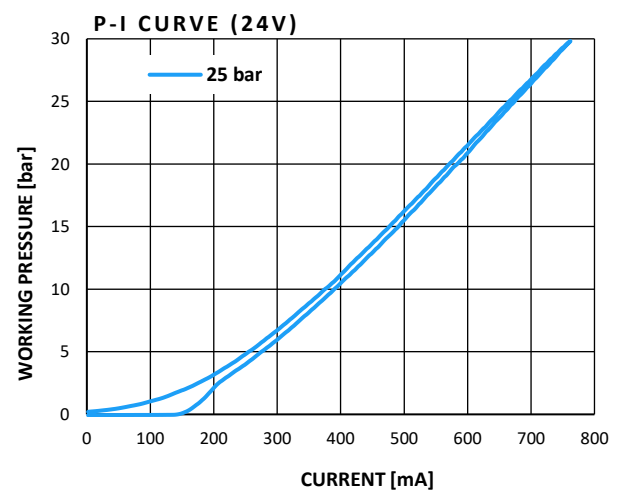
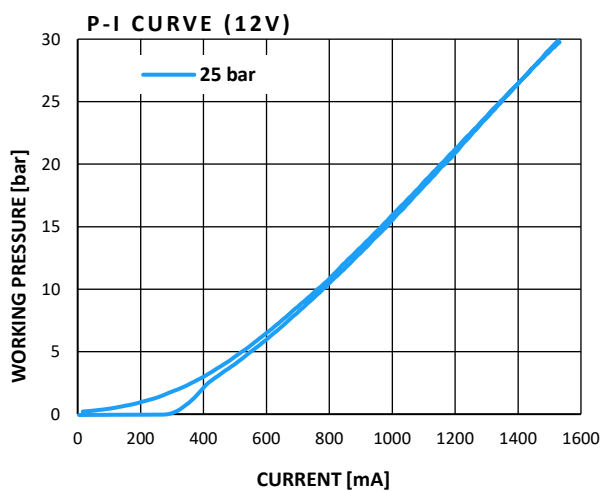
Max pressure pump	$P_p = 50$ bar
Max pressure tank	$P_T = 30$ bar
Max pressure work	$P_A = 25$ bar
Contamination level	Min Filtration: 20/18/15 According to ISO 4406
Fluid	Mineral Oil According to DIN 51524
Temperature range	-30 °C to +90 °C (ambient) -30 °C to +90 °C (fluid)
Leakage (internal, each valve)*	< 0,02 l/min (de-energized) < 0,15 l/min (energized)
Filterscreen size	125 μ m (all ports)

* The reported data are measured @ $P_p = 35$ bar and an oil viscosity of 32 cSt

Electrical Data

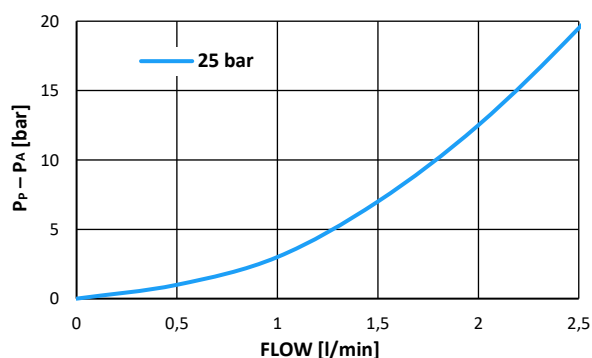
Voltage	12 V	24 V
Voltage range min/max	9/16 V	16/32 V
Short term overvoltage	36 V	
Max idle power	1 W	1 W
Max power consumption	25 W	
EMC immunity	1) acc. to ISO 11452-2:2019,2015 100 V/m; 80-2500 MHz 2) Acc. to ISO 11452-4:2011 150 mA; 0,5 – 200 MHz	
EMC transient conduction test	acc. to ISO 7637-2:2011 Tests 1, 2a, 2b, 3a, 3b, 3, 5 Test level: IV except for 24 V systems + test No. 5 Test level: III	
Connector	Deutsch Connector DT14-6P	
Protection class	Up to IP6K6 / IPX9K	

Current vs. Pressure (Average characteristic)

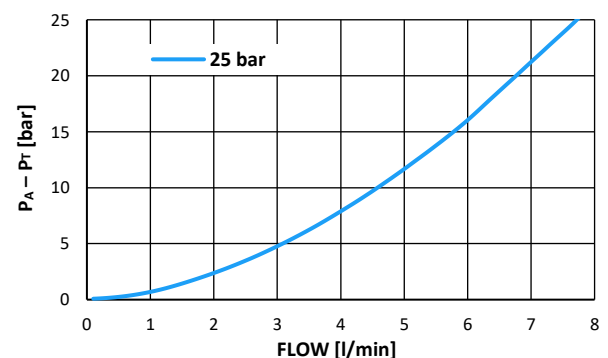


Flow characteristics (Average characteristic)

PRESSURE DROP PUMP TO CONTROL PORT (P→A)
Valve only



PRESSURE DROP CONTROL PORT TO TANK (A→T)
Valve only





Safety functions The EHA provides three safety functions in compliance of DIN EN ISO 13849

	SAFETY FUNCTION 1	SAFETY FUNCTION 2	DIAGNOSTIC FUNCTION 3
Name	Current less state	Pressure less state	Rated customer diagnostic function – EHA diag-message
Description	Whenever the signal processing of setpoints along the rated safety-chain (CAN ... valve-coil) is disturbed, the valves enter the current less state, which is defined as the safe state	Whenever the signal processing of setpoints along the rated safety-chain (CAN ... pilot pressure) is disturbed, the valves enter the current less state, which is defined as the safe state	The current position of the valve slider (accuracy $\pm 4\%$) is transmitted via the CAN bus interface cyclically (user configurable intervals of 10 ms, 30 ms and 100 ms) accompanied by an error code in case one has occurred.
MTTFd	~ 100 years	~ 53 years	~ 49 years
Diagnostic coverage	~ 95 %	93 %	~ 93 %
Performance level	D	D	D

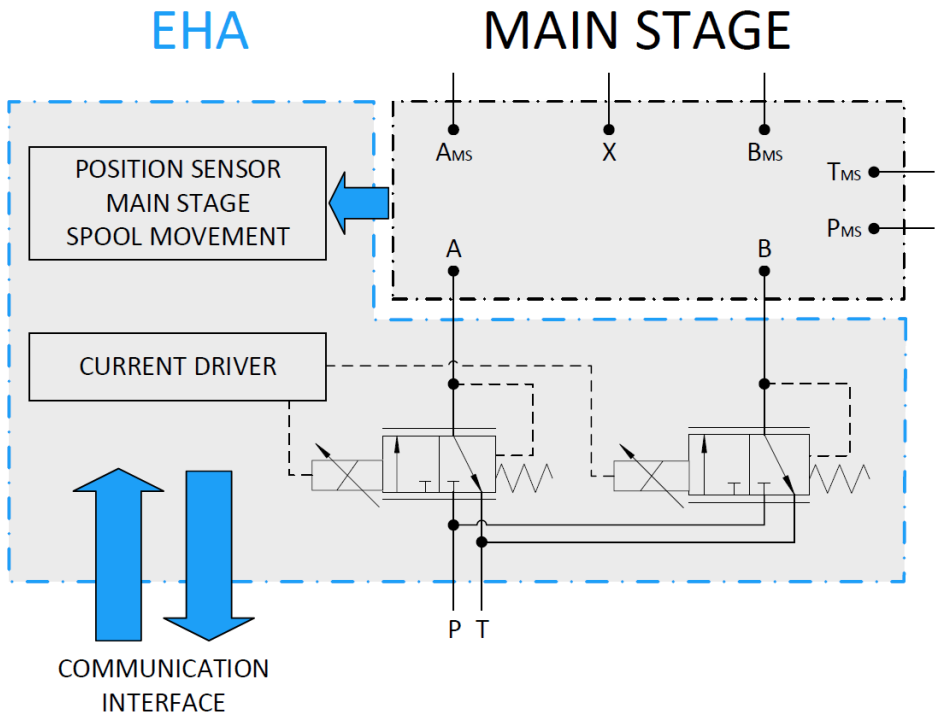
Sensoric accuracy

Sensor type	Hall effect
Max. stroke	$\pm 11\text{ mm}$
Max. sensing deviation	$< 90\text{ }\mu\text{m}$
Max. position offset	30 % (of max. stroke)

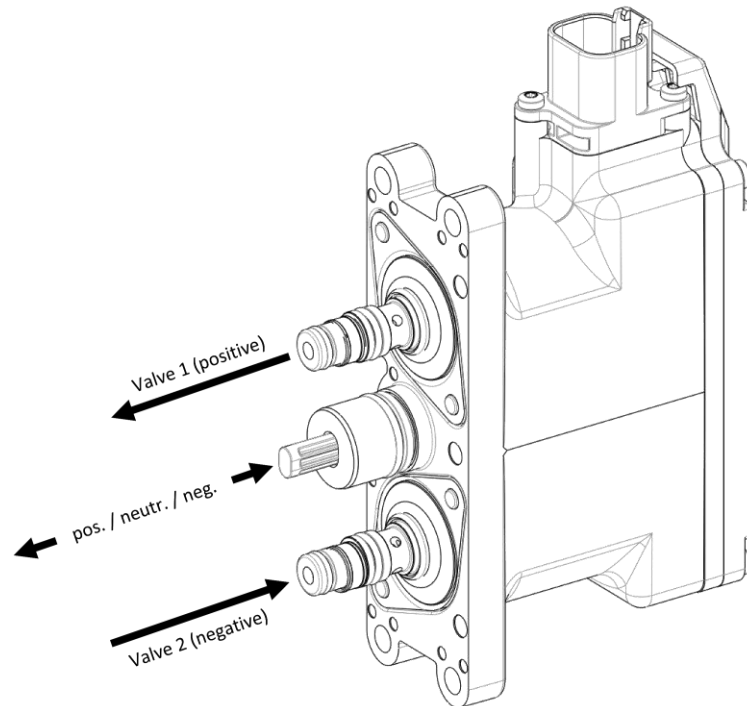
Additional data

Weight	Approx. 670 g
Mounting position (recommended)	Any (consider valve assignment)
Reference	Valve specification according to Thomas LHP 98 EHA TES

Hydraulic schematic



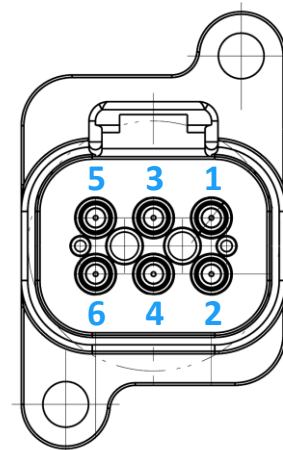
Valve assignment

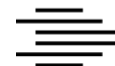


Pin assignment

Pin number	Function
1	U Bat (battery voltage)
2	CAN_L Signal (low)
3	A_IN + / alt EO Analog input signal (or electrical override for valve 2 - negative direction)**
4	A_IN - / alt EO Analog input ground (or electrical override for valve 1 - positive direction)**
5	GND ground
6	CAN_H Signal (high)

** depending on variant





EHA Product Family

EHA 2.0 with NG-PPCD03 Fail-Safe

Part No.	Voltage	Pressure	Flow P-A	Flow A-T	CANopen	CANprop	Fail Safe	FuSa	EO	NP	Analog In
1024900	12 V	25 bar	1,5 l/min	4,0 l/min	☑	☑	☑	☑		☑	☑
on request	12 V	25 bar	1,5 l/min	4,0 l/min	☑	☑	☑		☑	☑	
1024901	24 V	25 bar	1,5 l/min	4,0 l/min	☑	☑	☑	☑		☑	☑
on request	24 V	25 bar	1,5 l/min	4,0 l/min	☑	☑	☑		☑	☑	

EHA 2.0 with IPH-PPCD04

Part No.	Voltage	Pressure	Flow P-A	Flow A-T	CANopen	CANprop	Fail Safe	FuSa	EO	NP	Analog In
1021416	12 V	25 bar	2,7 l/min	2,4 l/min	☑	☑		☑		☑	☑
on request	12 V	25 bar	2,7 l/min	2,4 l/min	☑	☑			☑	☑	
on request	24 V	20 bar	3,0 l/min	2,7 l/min	☑	☑			☑	☑	
1021417	24 V	25 bar	2,7 l/min	2,4 l/min	☑	☑		☑		☑	☑
on request	24 V	25 bar	2,7 l/min	2,4 l/min	☑	☑			☑	☑	

EHA 2.0 with NG-PPCD04

Part No.	Voltage	Pressure	Flow P-A	Flow A-T	CANopen	CANprop	Fail Safe	FuSa	EO	NP	Analog In
1024369	12 V	20 bar	4,3 l/min	5,5 l/min	☑	☑		☑		☑	☑
on request	12 V	20 bar	4,3 l/min	5,5 l/min	☑	☑			☑	☑	
1019503	12 V	25 bar	3,5 l/min	4,3 l/min	☑	☑		☑		☑	☑
on request	12 V	25 bar	3,5 l/min	4,3 l/min	☑	☑			☑	☑	
1034370	24 V	20 bar	4,3 l/min	5,5 l/min	☑	☑		☑		☑	☑
on request	24 V	20 bar	4,3 l/min	5,5 l/min	☑	☑			☑	☑	
1019504	24 V	25 bar	3,5 l/min	4,3 l/min	☑	☑		☑		☑	☑
on request	24 V	25 bar	3,5 l/min	4,3 l/min	☑	☑			☑	☑	

EHA 2.0 with NG-PPCD05

Part No.	Voltage	Pressure	Flow P-A	Flow A-T	CANopen	CANprop	Fail Safe	FuSa	EO	NP	Analog In
1024030	12 V	30 bar	10,5 l/min	11,4 l/min	☑	☑		☑		☑	☑
on request	12 V	30 bar	10,5 l/min	11,4 l/min	☑	☑			☑	☑	
1024031	24 V	30 bar	10,5 l/min	11,4 l/min	☑	☑		☑		☑	☑
on request	24 V	30 bar	10,5 l/min	11,4 l/min	☑	☑			☑	☑	

*Flow P-A/A-T = @6 bar dp FuSa = Functional Safety

EO = Electrical Override NP = Neighbour Parameters

DISCLAIMER



The presented information is based on current knowledge and provides only non-binding information to the customer. Any liability in connection with this information is excluded. It is the responsibility of the customer to determine the suitability and appropriateness of the product for his intended purpose. We reserve the right to change the product with regard to technical progress and new developments.

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