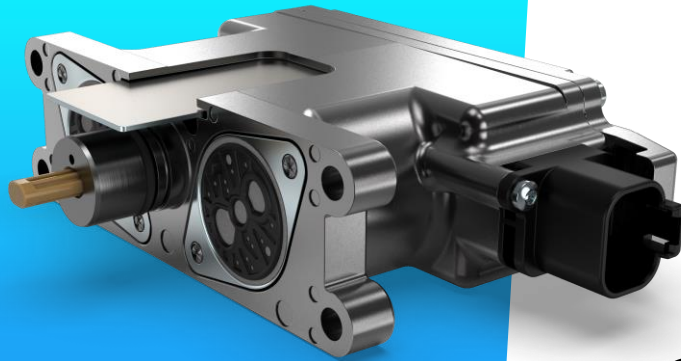


Electrohydraulic Actuator 2.0 [EHA 2.0] with NG-PPCD04 IPH



Proportional valves

Directional valves

Smart products

Special designs

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 NG-PPCD04 IPH |
| | 2,5 – 5 l/min based on NG-PPCD04 |
| | 10 l/min based on NG-PPCD05 |
| EMA | |

Benefits and Application

- ≡ Work and Steering Solutions
- ≡ Personalized support
- ≡ High precision sensor control
- ≡ Intuitive operation
- ≡ Less cavity efforts



Hydraulic Data

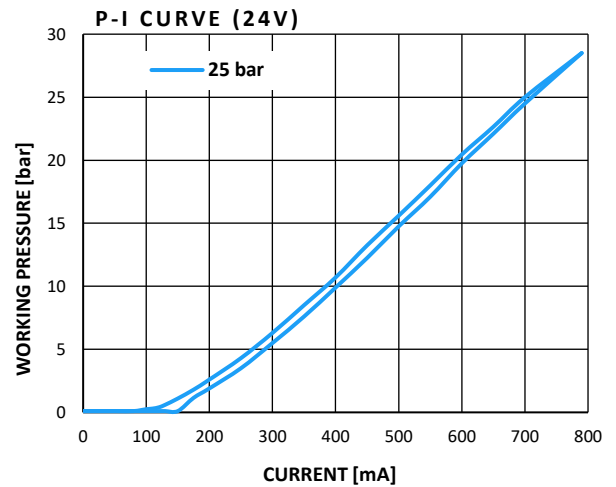
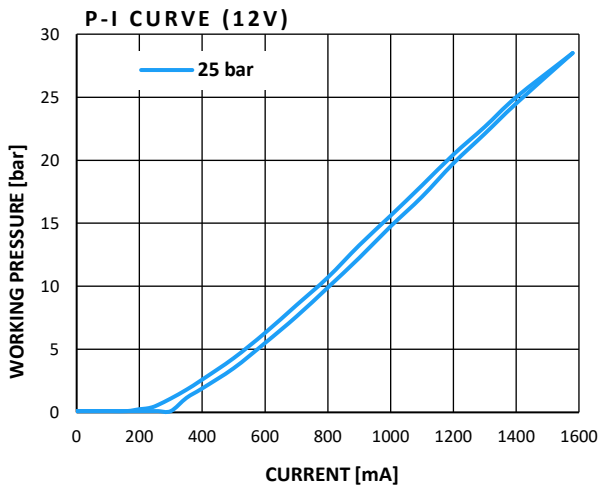
| | |
|--|---|
| Max pressure pump | $P_p = 35$ bar |
| Max pressure tank | $P_T = 10$ bar |
| Max pressure work | $P_A = 25$ bar |
| Contamination level | Min Filtration: 20/18/15 According to ISO 4406 |
| Fluid | Mineral Oil According to DIN 51524 |
| Temperature range | -30 °C to +90 °C (ambient) -30 °C to +90 °C (fluid) |
| Leakage (internal, each valve)* | < 0,06 l/min (de-energized) < 0,15 l/min (energized) |
| Filterscreen size | 200 μ m (all ports) |

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

Electrical Data

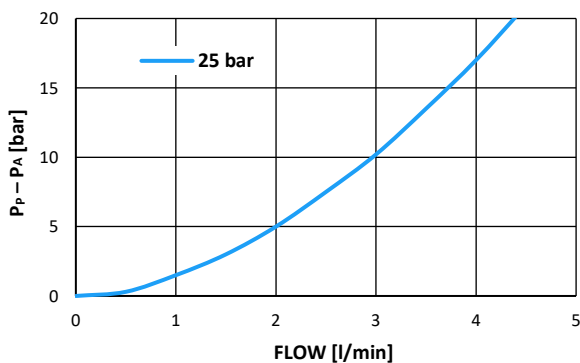
| | | |
|--------------------------------------|---|---------|
| Voltage | 12 V | 24 V |
| Voltage range min/max | 9/16 V | 16/32 V |
| Short term overvoltage | 36 V | |
| Max idle power | 1 W | 1 W |
| Max power consumption | 25 W | |
| EMC immunity | 1) acc. to ISO 11452-2:2019,2015 100 V/m; 80-2500 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)

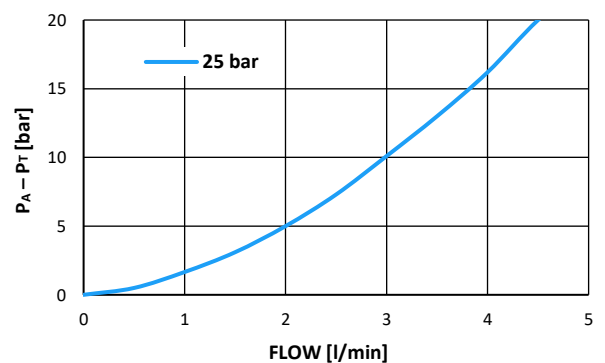


Flow characteristics (Average characteristic)

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 | ~ 49 years | ~ 49 years |
| Diagnostic coverage | ~ 95 % | 66 % | ~ 93 % |
| Performance level | D | C | D |

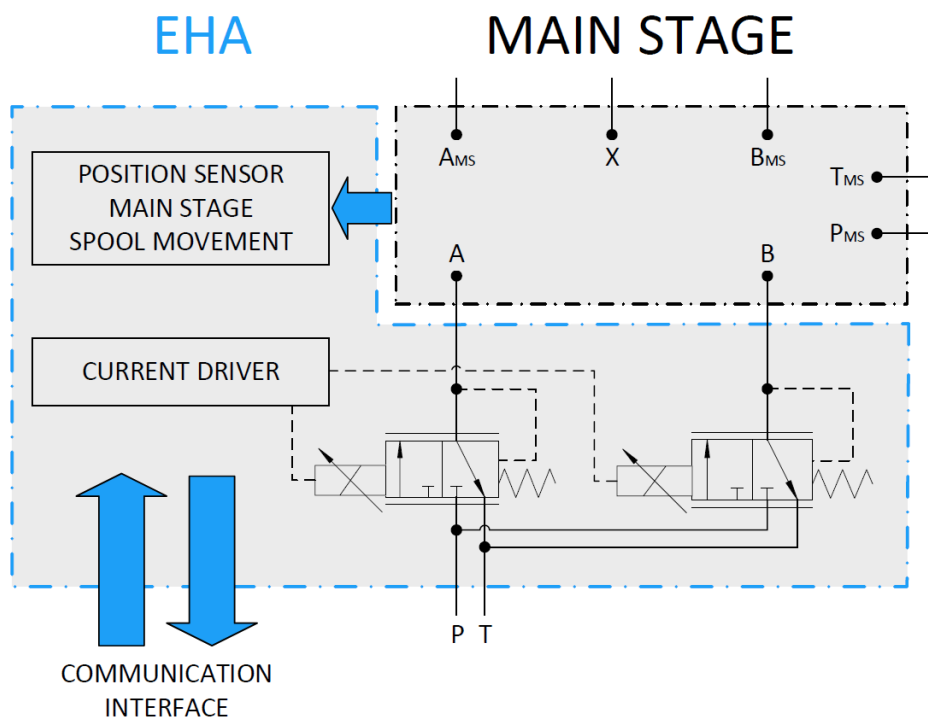
Sensoric accuracy

| | |
|-------------------------------|-----------------------|
| Sensor type | Hall effect |
| Max. stroke | ± 11 mm |
| Max. sensing deviation | < 90 μ m |
| Max. position offset | 30 % (of max. stroke) |

Additional data

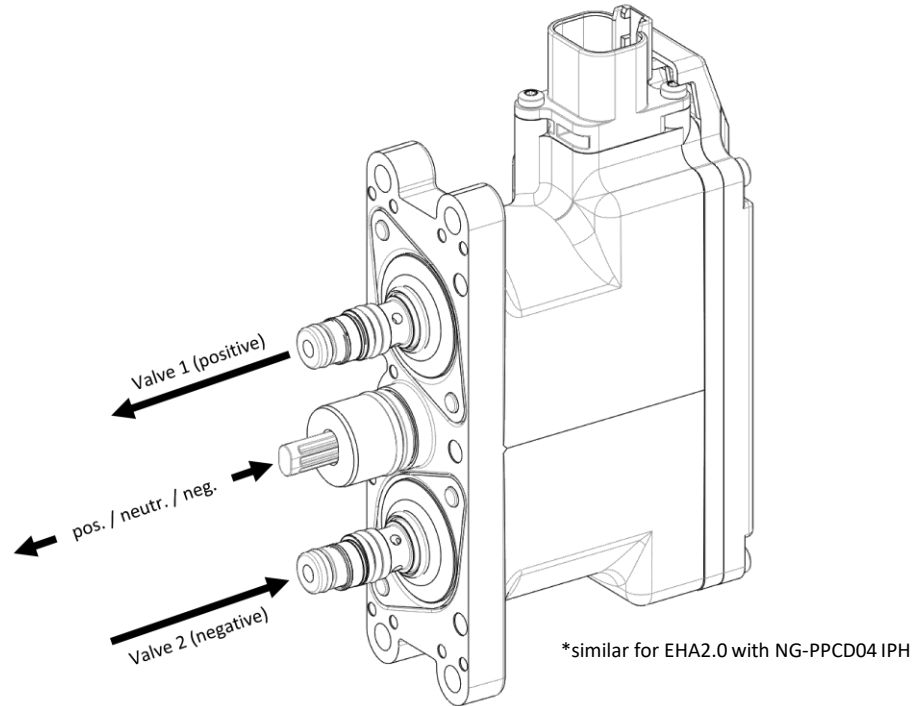
| | |
|--|--|
| Weight | Approx. 655 g |
| Mounting position (recommended) | Any (consider valve assignment) |
| Reference | Valve specification according to Thomas LHP 98 EHA TES |

Hydraulic schematic





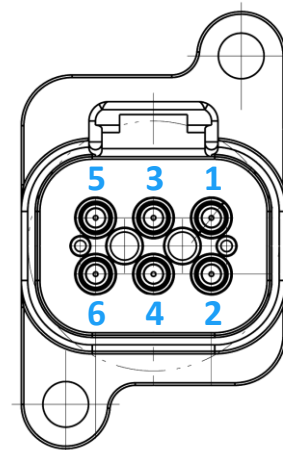
Valve assignment*



Pin assignment

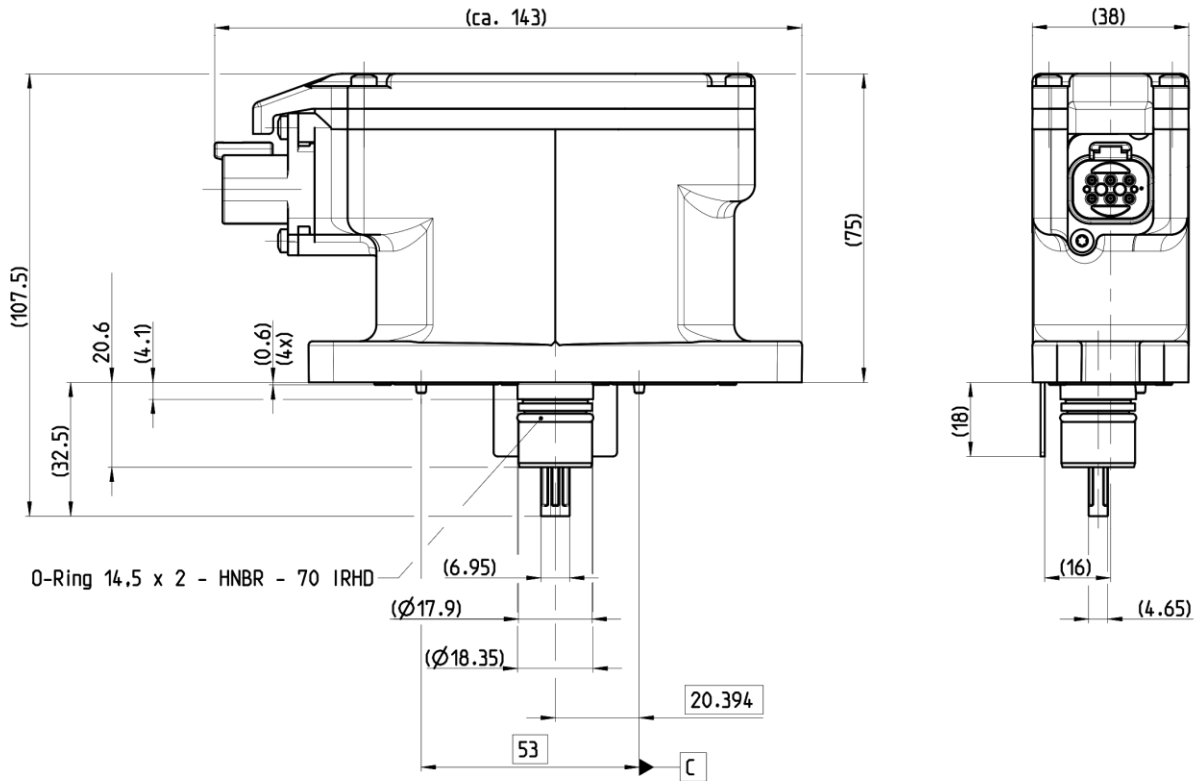
| Pin number | Function |
|------------|--|
| 1 | U Bat (battery voltage) |
| 2 | CAN_L Signal (low) |
| 3 | A_IN + / alt EO Analog input signal (or electrical override for valve 2 - negative direction)** |
| 4 | A_IN - / alt EO Analog input ground (or electrical override for valve 1 - positive direction)**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

** depending on variant

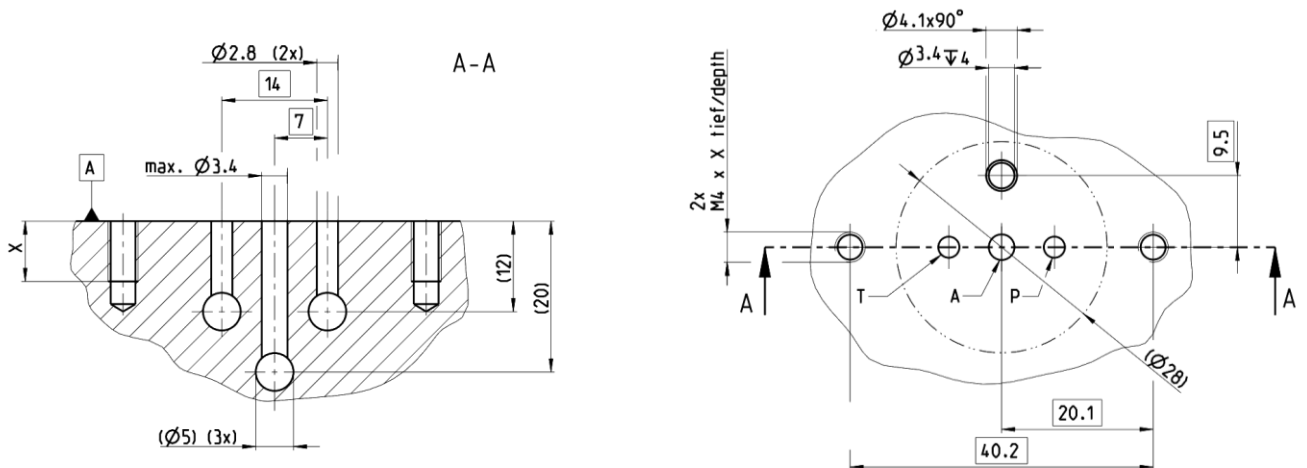




Dimensions with Deutsch Connector and NG-PPCD04 IPH [mm]

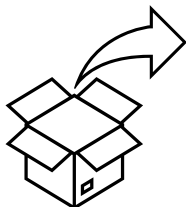


Cavity Dimensions of NG-PPCD04 IPH [mm]

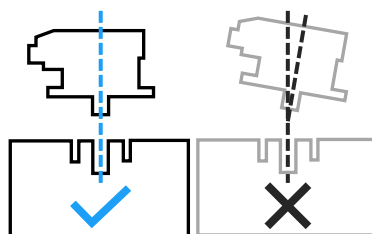


Mounting

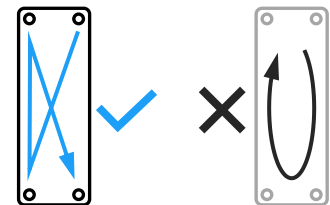
Handle with care



Insert in a straight line



Fasten screws crosswise





EHA Product Family

EHA 2.0 with NG-PPCD03 Fail-Safe

| Art. 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 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| on request | 12 V | 25 bar | 1,5 l/min | 4,0 l/min | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 1024901 | 24 V | 25 bar | 1,5 l/min | 4,0 l/min | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| on request | 24 V | 25 bar | 1,5 l/min | 4,0 l/min | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |

EHA 2.0 with NG-PPCD04 IPH

| Art. 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 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| on request | 12 V | 25 bar | 2,7 l/min | 2,4 l/min | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| on request | 24 V | 20 bar | 3,0 l/min | 2,7 l/min | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 1021417 | 24 V | 25 bar | 2,7 l/min | 2,4 l/min | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| on request | 24 V | 25 bar | 2,7 l/min | 2,4 l/min | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |

EHA 2.0 with NG-PPCD04

| Art. 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 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| on request | 12 V | 20 bar | 4,3 l/min | 5,5 l/min | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 1019503 | 12 V | 25 bar | 3,5 l/min | 4,3 l/min | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| on request | 12 V | 25 bar | 3,5 l/min | 4,3 l/min | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 1034370 | 24 V | 20 bar | 4,3 l/min | 5,5 l/min | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| on request | 24 V | 20 bar | 4,3 l/min | 5,5 l/min | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 1019504 | 24 V | 25 bar | 3,5 l/min | 4,3 l/min | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| on request | 24 V | 25 bar | 3,5 l/min | 4,3 l/min | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |

EHA 2.0 with NG-PPCD05

| Art. 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 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| on request | 12 V | 30 bar | 10,5 l/min | 11,4 l/min | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |

*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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