

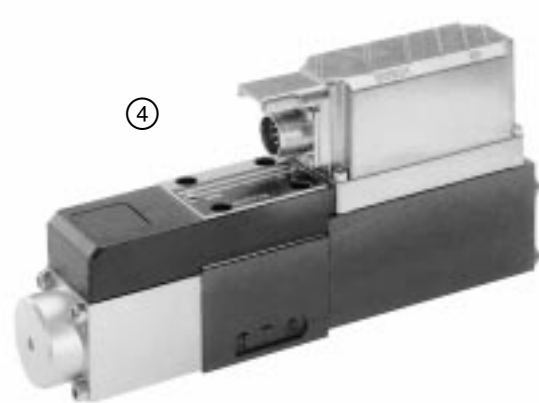
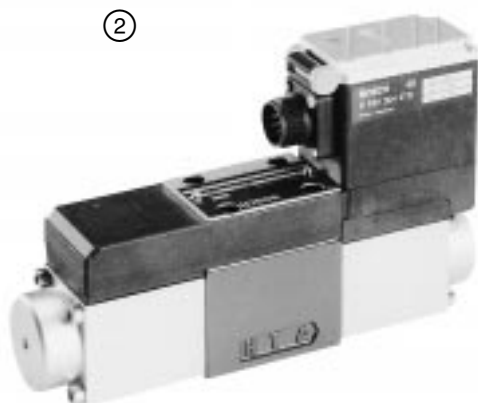
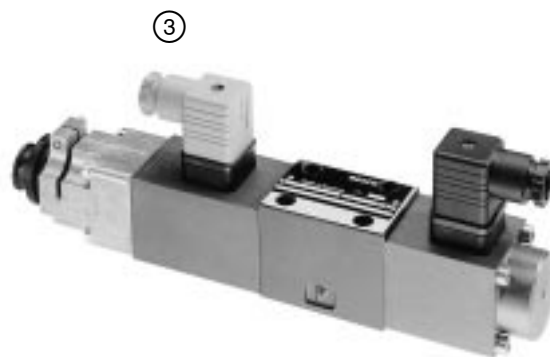
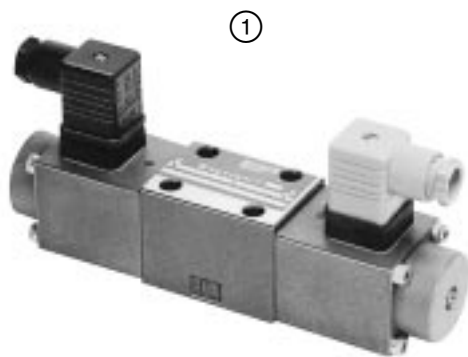
NG 6

Proportional-Wegeventile

Proportional directional control valves

Distributeurs proportionnels

6



▶ ① **ohne** Lageregelung
Version: Standard 2,5 A

▶ ② **ohne** Lageregelung und eingebauter Elektronik – OBE

▶▶ ③ **mit** Lageregelung
Version: LVDT – AC

▶▶▶ ④ **mit** Lageregelung und eingebauter Elektronik – OBE

▶▶ ① **without** position control
Version: Standard 2.5 A

▶▶ ② **without** position control and on-board electronics – OBE

▶▶▶ ③ **with** position control
Version: LVDT – AC

▶▶▶▶ ④ **with** position control and on-board electronics – OBE

▶▶▶▶ ① **sans** régulation de position
Version: Standard 2,5 A

▶▶▶▶ ② **sans** régulation de position et amplificateur intégré – OBE

▶▶▶▶▶ ③ **avec** régulation de position
Version: LVDT – AC

▶▶▶▶▶ ④ **avec** régulation de position et amplificateur intégré – OBE

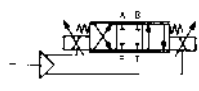
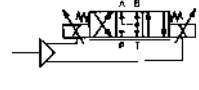

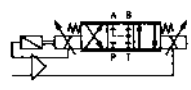

Bauart: Schieberventil

Construction: Spool type valve

Construction: Distributeur à tiroir


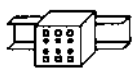


NG 6

Bestellübersicht Ordering range Gamme de commande

| Sinnbild Symbol Symbole |  A/VA max (R _L = 3 Ω) | Δp [bar] | Q _{nom.} [l/min] Q _A Q _B | | p _{max.} [bar] |  | Seite Page Page | ⊕ |
|---|---|-------------|---|-----|----------------------------|---|-----------------------|-----------------|
| ①  01 | 2,5/30 (R _L = 3 Ω) | 5 | 5,8 | 5,8 | P, A, B: 315 T: 250 |  1-M 1-K | 150 | 0 811 404 123 |
| | | | 14 | 14 | | | | 0 811 404 115 |
| | | | 28 | 28 | | | | 0 811 404 114 |
| ①  01 + L | 2,5/30 (R _L = 3 Ω) | 5 | 5,8 | 5,8 | P, A, B: 315 T: 250 |  1-M 1-K | 150 | 0 811 404 125 |
| | | | 14 | 14 | | | | 0 811 404 117 |
| | | | 28 | 28 | | | | 0 811 404 116 |
| ②  OBE 01 | 24 V= 35 VA max | 5 | 18 | 18 | P, A, B: 315 T: 250 |  2-K 3-K | 156 | 0 811 404 154 * |
| | | | 18 | 18 | | | | 0 811 404 151 |
| | | | 32 | 32 | | | | 0 811 404 150 |
| ②  OBE 01 + L | 24 V= 35 VA max | 5 | 18 | 18 | P, A, B: 315 T: 250 |  2-K 3-K | 156 | 0 811 404 153 |
| | | | 18 | 18 | | | | 0 811 404 152 |
| | | | 32 | 32 | | | | |
| ③  01 | 2,7/40 | 5 | 8 | 8 | P, A, B: 315 T: 250 |  2-K 3-K | 162 | 0 811 404 101 |
| | | | 16 | 16 | | | | 0 811 404 100 |
| | | | 28 | 28 | | | | 0 811 404 119 |
| ③  01 + L | 2,7/40 | 5 | 5,8 | 5,8 | P, A, B: 315 T: 250 |  2-K 3-K | 162 | 0 811 404 126 |
| | | | 14 | 14 | | | | 0 811 404 120 |
| | | | 28 | 28 | | | | 0 811 404 121 |
| ④  OBE 01 | 24 V= 40 VA max | 5 | 18 | 18 | P, A, B: 315 T: 200 |  2-K 3-K | 168 | 0 811 404 140 |
| | | | 32 | 32 | | | | 0 811 404 141 |
| | | | 7 | 7 | | | | 0 811 404 145 |
| ④  OBE 01 + L | 24 V= 40 VA max | 5 | 18 | 18 | P, A, B: 315 T: 200 |  2-K 3-K | 168 | 0 811 404 142 |
| | | | 18 | 18 | | | | 0 811 404 146 * |
| | | | 32 | 32 | | | | 0 811 404 143 |
| | | | 32 | 32 | | | | 0 811 404 147 * |

01 + L Mittelstellung mit Leckölentlastung
 Central position with leakage drain
 Position zéro avec drain des fuites

* mA-Version

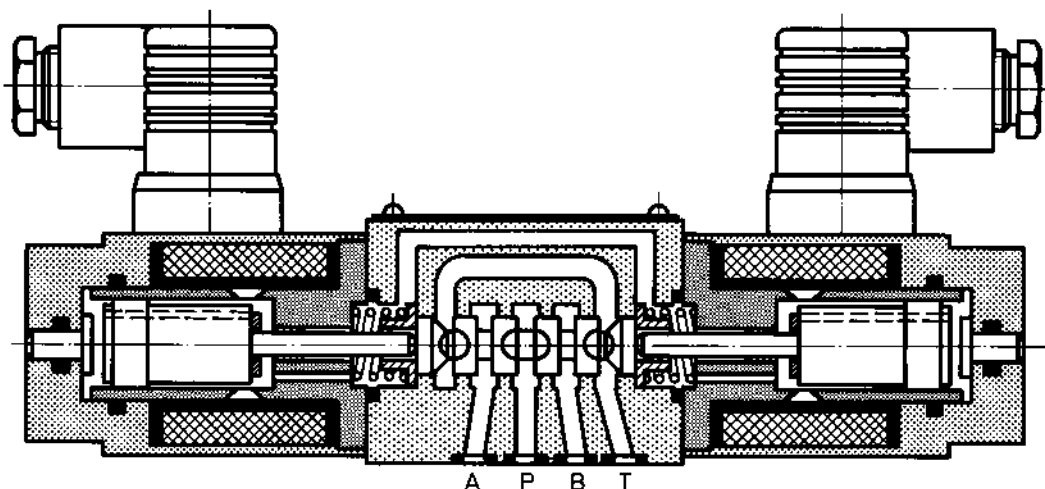
| Verstärkertechnik Symbol Symbole | Amplifier type mit Rampe with ramp avec rampe | Alphanumerik Alpha numeric Code alphanumérique | Type d'amplificateur  | Seite Page Page | ⊕ |
|--|---|--|---|-----------------------|---------------|
| M  | ● | 2 M 2.5 – RGC2 | 1-M | 253 | 0 811 405 106 |
| K  | ● | 2 M 45 – 2.5 A | 1-K | 266 | 0 811 405 080 |
| | ● | WV 45 – RGC2 | 2-K | | 0 811 405 119 |
| | ● | WV 45 – RGC4 | 3-K | | 0 811 405 137 |
|  | Stecker 7-polig für OBE Plug 7-pole for OBE Connecteur 7 pôles pour OBE | | | 241 | |

NG 6

Wegeventile Directional control valves Distributeurs



Funktion
 Function
 Fonction



6

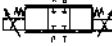
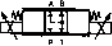
▶ ohne Lageregelung

▶▶ without position control

▶▶▶ sans régulation de position

| Sinnbild Symbol Symbole | A/VA max ($R_L = 3 \Omega$) | Δp [bar] | $Q_{nom.}$ [l/min] Q_A Q_B | $p_{max.}$ [bar] | [kg] | ⊗ | |
|-------------------------------|--------------------------------------|---------------------|--------------------------------------|---------------------------|------------|--------------------------------|---------------|
| ① 01 | 2,5/30 ($R_L = 3 \Omega$) | 5 | 5,8 5,8 | P, A, B: 315 T: 250 | 1-M 1-K | 2,6 | |
| ① 01 + L | | | 14 14 | | | | 0 811 404 123 |
| | | | 28 28 | | | | 0 811 404 115 |
| | | | 5,8 5,8 | | | | 0 811 404 114 |
| | | | 14 14 | | | | 0 811 404 125 |
| | | | 28 28 | | | | 0 811 404 117 |
| | | | | | | 0 811 404 116 | |
| (4 x) M | 253 | | 2 M 2.5 - RGC2 | 1-M | 0,3 | 2 910 151 166 0 811 405 106 | |
| K | 266 | Seite Page | 2 M 45 - 2.5 A | 1-K | 0,25 | 0 811 405 080 | |

Kenngrößen

| | | | |
|---|---|---------------------------------|-------------------------|
| Allgemein | | | |
| Bauart | Schieberventil | | |
| Betätigung | Proportionalmagnet ohne Lageregelung | | |
| Anschlussart | Plattenanschluss, Lochbild NG 6 (ISO 4401) | | |
| Einbaulage | beliebig | | |
| Umgebungstemperatur | -20 ... +50 °C | | |
| Hydraulisch | | | |
| Druckmittel | Hydrauliköl nach DIN 51 524 ... 535, andere Medien nach Rückfrage | | |
| Viskosität, empfohlen | 20 ... 100 mm ² /s | | |
| | max. zulässig 10 ... 800 mm ² /s | | |
| Druckmitteltemperatur | -20 ... +80 °C | | |
| Filterung | Zulässige Verschmutzungsstufe | | Zu erreichen mit Filter |
| | des Druckmittels nach NAS 1638 | | β _x = 75 |
| | 8 | X = 10 | |
| | 9 | 20 | |
| Entsprechend Betriebssicherheit und Lebensdauer | 10 | 25 | |
| | siehe Sinnbild | | |
| Nenndurchfluss (bei Δp = 5 bar)* | 5,8 | 14 | 28 l/min (pro Kanal) |
| Lecköl/Steuerkante (Δp = 100 bar) |  | A → T = 80 cm ³ /min | |
| | | B → T = 80 cm ³ /min | |
| Leckölentlastung (Δp = 5 bar) |  | A → T = 0,8 ... 1,6 l/min | |
| | | B → T = 0,8 ... 1,6 l/min | |
| Max. Betriebsdruck | Anschluss P, A, B: 315 bar | | |
| | Anschluss T: 250 bar | | |
| Elektrisch | | | |
| Relative Einschaltdauer | 100% ED (9 V=) | | |
| Schutzart | IP 65 nach DIN 40 050 und IEC 14 434/5 | | |
| Anschluss Magnet | Gerätesteckdose DIN 43 650/ISO 4400 | | |
| Magnetstrom | max. 2,5 A | | |
| Spulenwiderstand R ₂₀ | 3 Ω | | |
| Max. Leistungsaufnahme bei 100% Last und Betriebstemperatur | 30 VA max | | |
| Statisch/Dynamisch | | | |
| Hysterese | ≦ 4% | | |
| Umkehrspanne | ≦ 3% | | |
| Exemplarstreuung | ≈ 10% | | |
| Stellzeit 100% Signalsprung | 70 ms | | |

Alle Kenngrößen in Verbindung mit Proportionalverstärker: (bei U_B = 24 V) 2 M 45 – 2.5 A

*** Nenndurchfluss**

Dieser bezieht sich immer auf eine Druckdifferenz an der Drosselstelle von Δp = 5 bar.

Der Durchfluss bei anderen Differenzdrücken berechnet sich nach:

$$Q_x = Q_{nom.} \cdot \sqrt{\frac{\Delta p_x}{5}}$$

Hierbei sind jedoch die **Einsatzgrenzen** zu beachten. Bei Überschreitung der Einsatzgrenzen treten Strömungskräfte auf, die zu unkontrollierbaren Schieberbewegungen führen. Durch die Verwendung von **Druckwaagen** wird Δp sicher begrenzt.



Characteristics

General

| | |
|---------------------------|---|
| Construction | Spool type valve |
| Actuation | Proportional solenoid without position control |
| Connection type | Subplate, mounting hole configuration NG 6 (ISO 4401) |
| Mounting position | optional |
| Ambient temperature range | -20 ... +50 °C |

Hydraulic

| | | | |
|---|--|--|------------------------|
| Pressure medium | Hydraulic oil as per DIN 51 524 ... 535, other fluids after prior consultation | | |
| Viscosity, recommended | 20 ... 100 mm ² /s | | |
| max. permitted | 10 ... 800 mm ² /s | | |
| Pressure medium temperature | -20 ... +80 °C | | |
| Filtration | Permissible contamination class of pressure medium as per NAS 1638 | Achieved using filter β _x = 75 | |
| In line with operational reliability and service life | 8 | X = 10 | |
| | 9 | 20 | |
| | 10 | 25 | |
| Flow direction | cf. symbol | | |
| Nominal flow (at Δp = 5 bar)* | 5.8 | 14 | 28 l/min (per channel) |
| Leakage/Metering edge (Δp = 100 bar) | | A → T = 80 cm ³ /min B → T = 80 cm ³ /min | |
| Leakage drain (Δp = 5 bar) | | A → T = 0.8 ... 1.6 l/min B → T = 0.8 ... 1.6 l/min | |
| Max. working pressure | Ports P, A, B: 315 bar Port T: 250 bar | | |

Electrical

| | |
|---|--|
| Cyclic duration factor | 100% (9 V DC) |
| Degree of protection | IP 65 as per DIN 40 050 and IEC 14 434/5 |
| Solenoid connector | Connector DIN 43 650/ISO 4400 |
| Solenoid current | max. 2.5 A |
| Coil resistance R ₂₀ | 3 Ω |
| Max. power consumption at 100% load and operational temperature | 30 VA max |

Static/Dynamic

| | |
|----------------------------------|-------|
| Hysteresis | ≅ 4% |
| Range of inversion | ≅ 3% |
| Manufacturing tolerance | ≈ 10% |
| Response time 100% signal change | 70 ms |

All characteristic values in connection with proportional amplifier: (U_B = 24 V) 2 M 45 – 2.5 A

* Nominal flow

This is always based on a pressure differential of Δp = 5 bar at the throttle point.

Where other pressure differentials are involved, flow is calculated according to the following formula:

$$Q_x = Q_{\text{nom.}} \cdot \sqrt{\frac{\Delta p_x}{5}}$$

However, the **operating limits** must be borne in mind here.

When the operating limits are exceeded, the ensuing flow forces lead to uncontrollable spool movements.

To achieve effective limitation of Δp, use is made of **pressure compensators**.

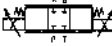
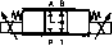


Caractéristiques

Générales

| | |
|----------------------|---|
| Construction | Distributeur à tiroir |
| Commande | Aimant à action proportionnelle sans régulation de position |
| Raccordement | Embase selon plan de pose NG 6 (ISO 4401) |
| Position de montage | indifférente |
| Température ambiante | -20 ... +50 °C |

Hydrauliques

| | | | |
|---|---|--|---------------------------------------|
| Fluide | Fluide hydraulique selon norme DIN 51 524 ... 535, autre fluide sur demande | | |
| Viscosité, conseillée max. admissible | 20 ... 100 mm ² /s | | |
| | 10 ... 800 mm ² /s | | |
| Température du fluide | -20 ... +80 °C | | |
| Selon sécurité de fonctionnement et durée de vie | Filtration | Classe de pollution admissible du fluide selon NAS 1638 | Avec un filtre β _x = 75 |
| | | 8 | X = 10 |
| | | 9 | 20 |
| | | 10 | 25 |
| Sens d'écoulement | voir symbole | | |
| Débit nominal (pour Δp = 5 bar)* | 5,8 | 14 | 28 l/min (par canal) |
| Fuites internes/Arête de distribution (Δp = 100 bar) |  | A → T = 80 cm ³ /min B → T = 80 cm ³ /min | |
| Drainage de fuites internes (Δp = 5 bar) |  | A → T = 0,8 ... 1,6 l/min B → T = 0,8 ... 1,6 l/min | |
| Pression de service max. | Orifice P, A, B: 315 bar Orifice T: 250 bar | | |

Electriques

| | |
|---|--|
| Facteur de marche réelle | FM 100% (9 V=) |
| Degré de protection | IP 65 selon norme DIN 40 050 et IEC 14 434/5 |
| Branchement électro-aimant | par prise selon norme DIN 43 650/ISO 4400 |
| Courant d'alimentation de l'électro-aimant | max. 2,5 A |
| Résistance de la bobine R ₂₀ | 3 Ω |
| Consommation max. pour charge 100% et température de service | 30 VA max |

Statiques/Dynamiques

| | |
|---|-------|
| Hystérésis | ≦ 4% |
| Seuil d'inversion | ≦ 3% |
| Dispersion | ≈ 10% |
| Temps de réponse pour une course de 100% | 70 ms |

Toute caractéristique en liaison avec l'amplificateur électronique proportionnel: pour (U_B = 24 V) 2 M 45 – 2.5 A

*** Débit nominal**

Toujours par rapport à une différence de pression à l'étranglement de Δp = 5 bar.

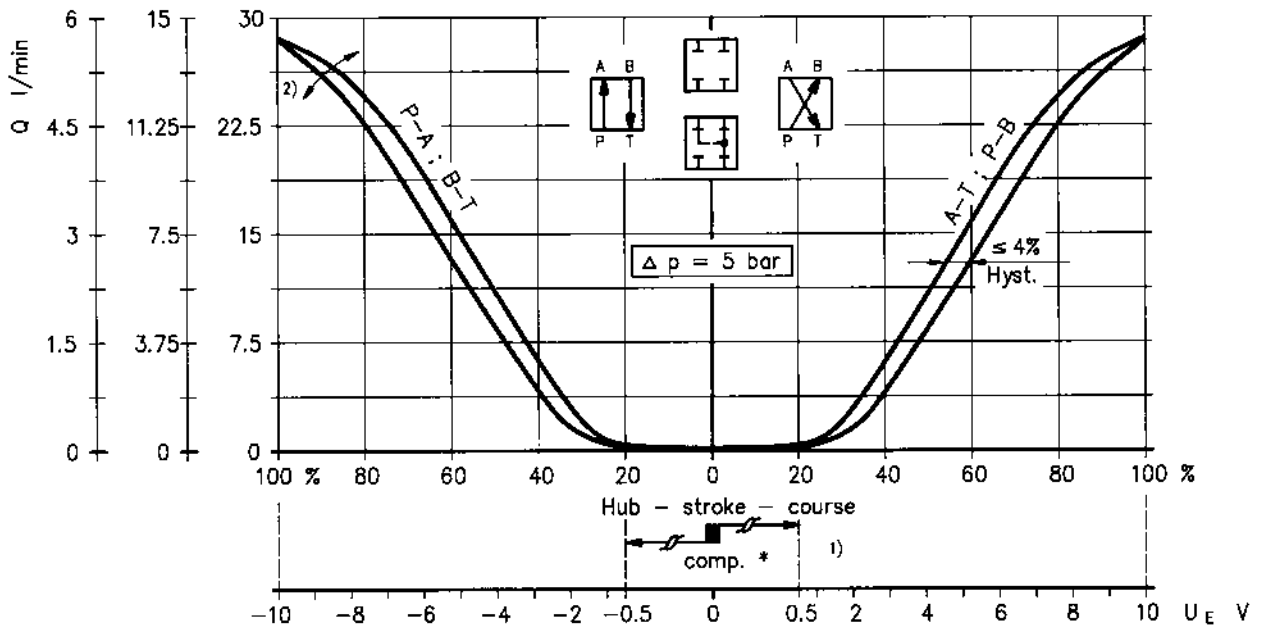
Le débit pour d'autres différences de pression se calcule comme suit:

$$Q_x = Q_{nom.} \cdot \sqrt{\frac{\Delta p_x}{5}}$$

Il faut néanmoins tenir compte des **limites d'utilisation.**

En cas de dépassement de ces plages d'utilisation, une pression trop élevée entraîne des déplacements de tiroir non contrôlés. L'utilisation de **balances de pression** permet de limiter en toute sécurité le Δp.

Kennlinie
Performance curve
Courbe caractéristique
 $v = 35 \text{ mm}^2/\text{s}$



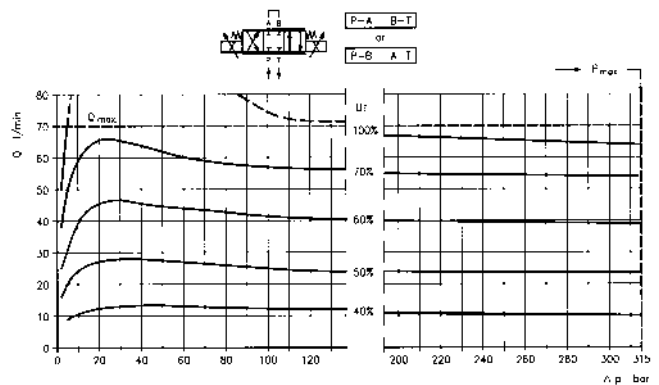
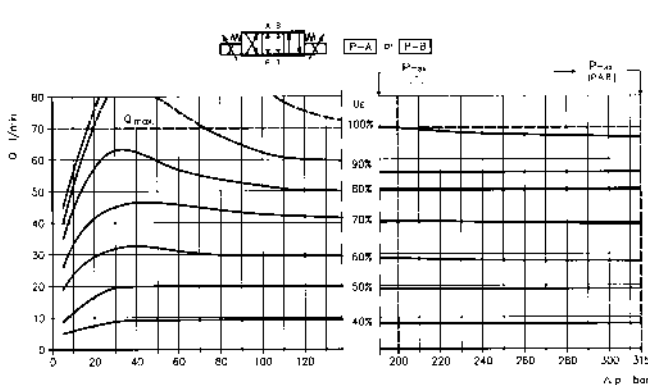
6

► **Ventilverstärker**
 1) Nullpunkt-Justierung
 2) Empfindlichkeits-Justierung

►► **Valve amplifier**
 1) Zero adjustment
 2) Gain adjustment


►►► **Amplificateur de valve**
 1) Tarage du zéro
 2) Tarage du gain

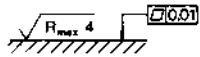
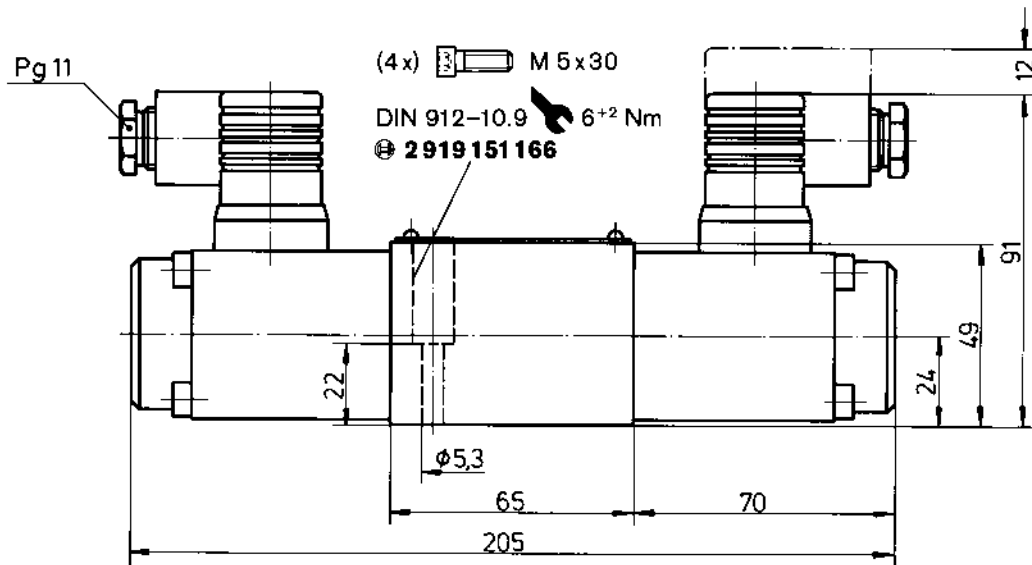
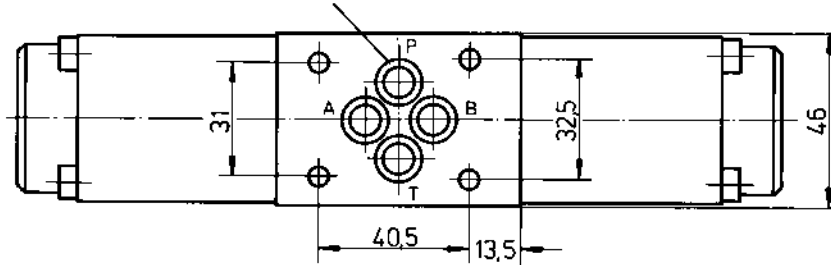
Einsatzgrenzen
Operating limits
Limites d'utilisation





Abmessungen
 Dimensions
 Cotes d'encombrement

→ FD: 10/97

(4 x)  9,25 x 1,78 NBR
 ⊕ 1810 210 120



(4 x)  M 5 x 30
 DIN 912-10.9  6⁺² Nm
 ⊕ 2919 151 166

Pg 11

► Abmessungen des Anschlusslochbildes NG 6 ISO 4401
 siehe Seite 212

►► Dimensions of mounting hole configuration NG 6 ISO 4401
 see page 212

►►► Cotes du plan de pose NG 6 ISO 4401
 voir page 212

www.khadamathydraulic.com
 Tell: 021-55882749
 Tell: 021-33488178
 Fax: 021-33488105

NG 6

Wegeventile mit OBE

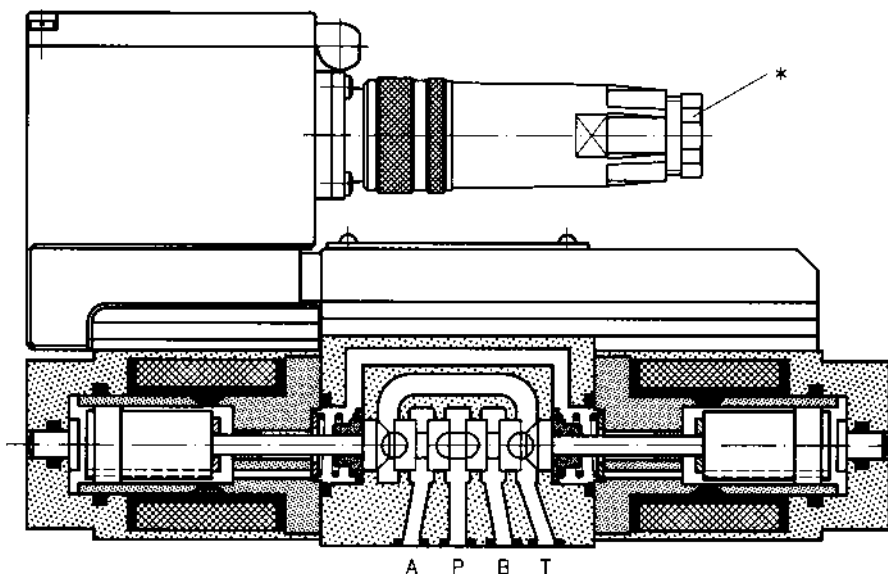
Directional control valves with OBE

Distributeurs avec OBE



Funktion
 Function
 Fonction

CE EN 50 081-1
 EN 50 082-2



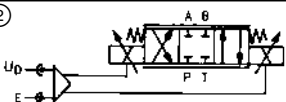
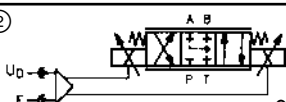

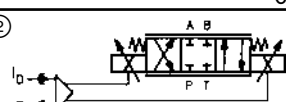




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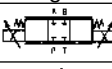
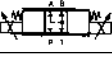
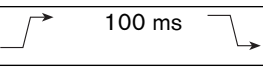
▶ ohne Lageregelung

▶▶ without position control

▶▶▶ sans régulation de position

| Sinnbild Symbol Symbole |  | Δp [bar] | $Q_{nom.}$ [l/min] | $p_{max.}$ [bar] |  | \oplus | |
|---|---|---------------------|-----------------------|---------------------|---|---------------|---------------|
| ②  OBE U_{D-E} E | V/VA max 24 V= 35 VA max $U_{D-E} 0 \dots \pm 10 V$ | 5 | Q_A 18 | Q_B 18 | P, A, B: 315 T: 250 | 3,1 | 0 811 404 151 |
| | | | 32 | 32 | | | 0 811 404 150 |
| ②  OBE U_{D-E} E | | | 18 | 18 |  | | 0 811 404 153 |
| | | | 32 | 32 | | | 0 811 404 152 |
| ②  OBE I_{D-E} E | 24 V= 35 VA max $I_{D-E} 4 \dots 20 mA$ | | 18 | 18 | | | 0 811 404 154 |
| (4 x)  M 5 x 30 DIN 912-10.9 | | | | | | | 2 910 151 166 |
| *  | | Stecker 7-polig | | KS | | 1 834 482 022 | |
| | | Plug 7-pole | | KS | | 1 834 482 026 | |
| | | Connecteur 7 pôles | | MS | | 1 834 482 023 | |
| | | Seite | | MS | | 1 834 482 024 | |
| | | Page 241 | | KS 90° | | 1 834 484 252 | |

Kenngrößen

| | | |
|--|--|--|
| Allgemein | | |
| Bauart | Schieberventil | |
| Betätigung | Proportionalmagnet ohne Lageregelung und mit eingebauter Elektronik | |
| Anschlussart | Plattenanschluss, Lochbild NG 6 (ISO 4401) | |
| Einbaulage | beliebig | |
| Umgebungstemperatur | -20 ... +50 °C | |
| Rüttelfestigkeit, Prüfbedingung | max. 25 g, Raumschüttelprüfung in allen Richtungen (24 h) | |
| Hydraulisch | | |
| Druckmittel | Hydrauliköl nach DIN 51 524 ... 535, andere Medien nach Rückfrage | |
| Viskosität, empfohlen | 20 ... 100 mm ² /s | |
| max. zulässig | 10 ... 800 mm ² /s | |
| Druckmitteltemperatur | -20 ... +70 °C | |
| Filterung | Zulässige Verschmutzungsstufe des Druckmittels nach NAS 1638 | Zu erreichen mit Filter β _x = 75 |
| Entsprechend Betriebssicherheit und Lebensdauer | 7 | X = 5 |
| | 8 | 10 |
| | 9 | 15 |
| Durchflussrichtung | siehe Sinnbild | |
| Max. Betriebsdruck (statisch) | Anschluss P, A, B: 315 bar Anschluss T: 250 bar | |
| Nenndurchfluss (bei Δp = 5 bar)* | 18 | 32 l/min (pro Steuerkante) |
| | Q _A bei 8 V | 15 ± 1 l/min |
| Einsatzgrenze | siehe Diagramm | |
| Lecköl/Steuerkante (Δp = 100 bar) |  | A → T = 80 cm ³ /min B → T = 80 cm ³ /min |
| Leckölentlastung (Δp = 5 bar) |  | A → T = 0,8 ... 1,6 l/min B → T = 0,8 ... 1,6 l/min |
| Statisch/Dynamisch | | |
| Hysterese | ≦ 6% | |
| Ansprechempfindlichkeit | ≦ 3% | |
| Stellzeit 100% Signalsprung (Rampe = T _{min}) | 50 ms | 100 ms  |
| Elektrische Kenngrößen | siehe Seite 230 (OBE) | |

6

*** Nenndurchfluss**

Dieser bezieht sich immer auf eine Druckdifferenz an der Drosselstelle von Δp = 5 bar.

Der Durchfluss bei anderen Differenzdrücken berechnet sich nach:

$$Q_x = Q_{nom.} \cdot \sqrt{\frac{\Delta p_x}{5}}$$

Hierbei sind jedoch die **Einsatzgrenzen** zu beachten. Bei Überschreitung der Einsatzgrenzen treten Strömungskräfte auf, die zu unkontrollierbaren Schieberbewegungen führen. Durch die Verwendung von **Druckwaagen** wird Δp sicher begrenzt.

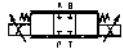
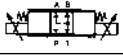




Characteristics

General

| | |
|--------------------------------------|--|
| Construction | Spool type valve |
| Actuation | Proportional solenoid without position control and with on-board electronics |
| Connection type | Subplate, mounting hole configuration NG 6 (ISO 4401) |
| Mounting position | optional |
| Ambient temperature range | -20 ... +50 °C |
| Vibration resistance, test condition | max. 25 g, shaken in 3 dimensions (24 h) |

Hydraulic

| | | |
|--|--|--|
| Pressure medium | Hydraulic oil as per DIN 51 524 ... 535, other fluids after prior consultation | |
| Viscosity, recommended | 20 ... 100 mm ² /s | |
| max. permitted | 10 ... 800 mm ² /s | |
| Pressure medium temperature | -20 ... +70 °C | |
| Filtration | Permissible contamination class of pressure medium as per NAS 1638 | Achieved using filter β _x = 75 |
| In line with operational reliability and service life | 7 | X = 5 |
| | 8 | 10 |
| | 9 | 15 |
| Flow direction | cf. symbol | |
| Max. working pressure (static) | Ports P, A, B: 315 bar Port T: 250 bar | |
| Nominal flow (at Δp = 5 bar)* | 18 | 32 l/min (per metering edge) |
| | Q _A at 8 V | 15 ± 1 l/min |
| Operating limits | see diagram | |
| Leakage/Metering edge (Δp = 100 bar) |  | A → T = 80 cm ³ /min B → T = 80 cm ³ /min |
| Leakage drain (Δp = 5 bar) |  | A → T = 0.8 ... 1.6 l/min B → T = 0.8 ... 1.6 l/min |
| Static/Dynamic | | |
| Hysteresis | ≲ 6% | |
| Response sensitivity | ≲ 3% | |
| Response time 100% signal change (Ramp = T _{min}) | 50 ms  100 ms  | |
| Electrical characteristics | see page 230 (OBE) | |

* Nominal flow

This is always based on a pressure differential of Δp = 5 bar at the throttle point.

Where other pressure differentials are involved, flow is calculated according to the following formula:

$$Q_x = Q_{\text{nom.}} \cdot \sqrt{\frac{\Delta p_x}{5}}$$

However, the **operating limits** must be borne in mind here.

When the operating limits are exceeded, the ensuing flow forces lead to uncontrollable spool movements.

To achieve effective limitation of Δp, use is made of **pressure compensators**.

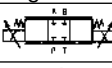
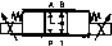


Caractéristiques



Générales

| | |
|-------------------------------|--|
| Construction | Distributeur à tiroir |
| Commande | Aimant à action proportionnelle sans régulation de position avec amplificateur intégré |
| Raccordement | Embase selon plan de pose NG 6 (ISO 4401) |
| Position de montage | indifférente |
| Température ambiante | -20 ... +50 °C |
| Vibrations, condition du test | max. 25 g, 3 dimensions (24 h) |

Hydrauliques

| | | |
|--|--|--|
| Fluide | Fluide hydraulique selon norme DIN 51 524 ... 535, autre fluide sur demande | |
| Viscosité, conseillée max. admissible | 20 ... 100 mm ² /s | |
| | 10 ... 800 mm ² /s | |
| Température du fluide | -20 ... +70 °C | |
| Filtration | Classe de pollution admissible du fluide selon NAS 1638 | Avec un filtre β _x = 75 |
| Selon sécurité de fonctionnement et durée de vie | 7 | X = 5 |
| | 8 | 10 |
| | 9 | 15 |
| Sens d'écoulement | voir symbole | |
| Pression de service max. (statique) | Orifice P, A, B: 315 bar Orifice T: 250 bar | |
| Débit nominal (pour Δp = 5 bar)* Q _A à 8 V | 18 | 32 l/min (par arête de distribution) |
| | 15 ± 1 l/min | 26 ± 1,5 l/min |
| Limites d'utilisation | voir diagramme | |
| Fuites internes/Arête de distribution (Δp = 100 bar) |  | A → T = 80 cm ³ /min B → T = 80 cm ³ /min |
| Drainage de fuites internes (Δp = 5 bar) |  | A → T = 0,8 ... 1,6 l/min B → T = 0,8 ... 1,6 l/min |

Statiques/Dynamiques

| | |
|---|--|
| Hystérésis | ≅ 6% |
| Seuil de réponse | ≅ 3% |
| Temps de réponse pour une course de 100% (Rampe = T _{min}) | 50 ms  100 ms  |

Caractéristiques électriques

voir page 230 (OBE)

*** Débit nominal**

Toujours par rapport à une différence de pression à l'étranglement de Δp = 5 bar.

Le débit pour d'autres différences de pression se calcule comme suit:

$$Q_x = Q_{nom.} \cdot \sqrt{\frac{\Delta p_x}{5}}$$

Il faut néanmoins tenir compte des

limites d'utilisation.

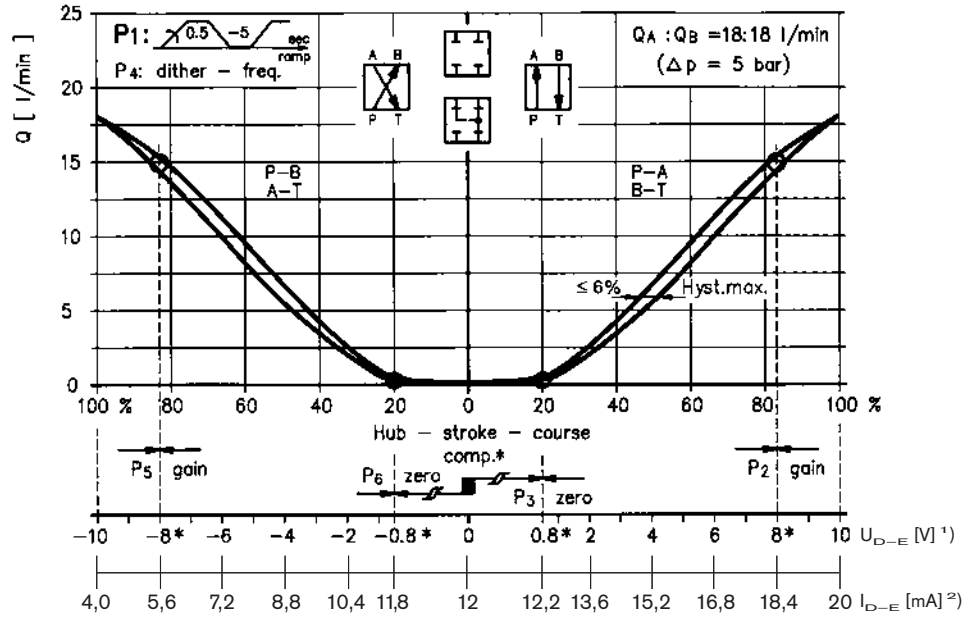
En cas de dépassement de ces plages d'utilisation, une pression trop élevée entraîne des déplacements de tiroir non contrôlés. L'utilisation de

balances de pression permet de

limiter en toute sécurité le Δp.

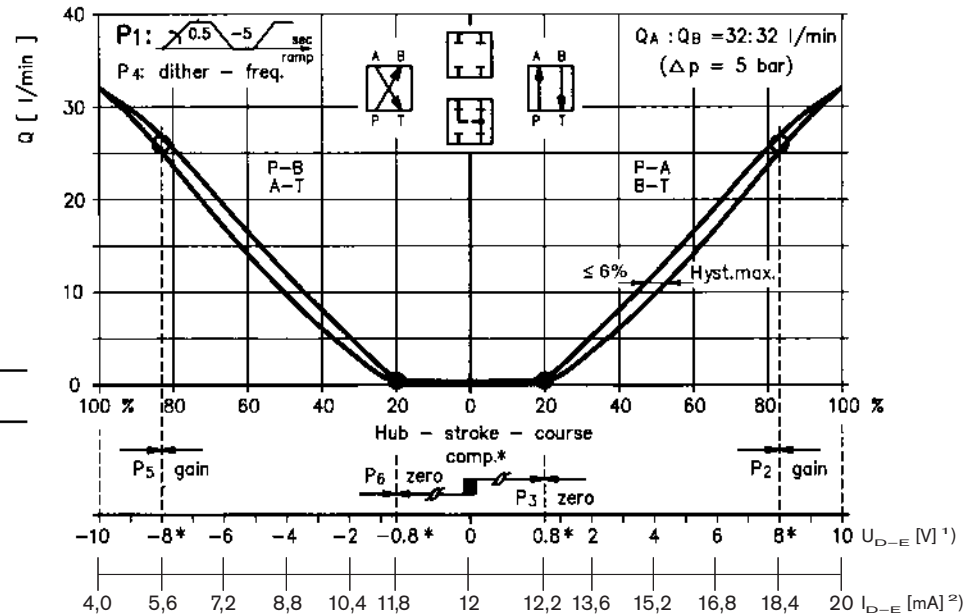
Kennlinien
Performance curves
Courbes caractéristiques
 $v = 35 \text{ mm}^2/\text{s}$

$Q_{\text{nom.}} = 18 \text{ l/min}$



6

$Q_{\text{nom.}} = 32 \text{ l/min}$



Hinweis/Remark/Note:

- P1 ramp
- P2 ... P6 gain
- * Ab Werk eingestellt
- * Factory calibrated
- * Réglage par l'usine

Elektronikabgleich
 siehe Seite 230

- 1) Version: $U_E = 0 \dots +10 \text{ V}$
- 2) Version: $I_E = 4 \dots 20 \text{ mA}$

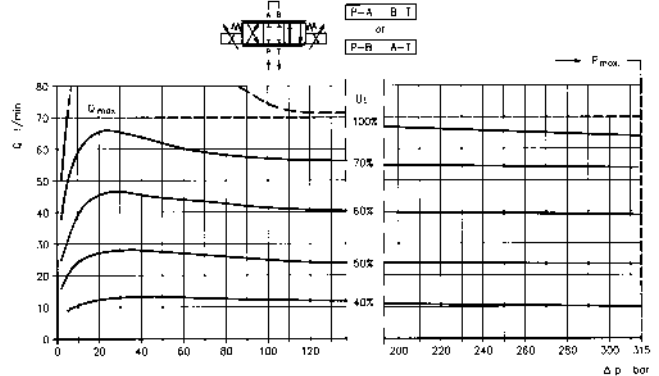
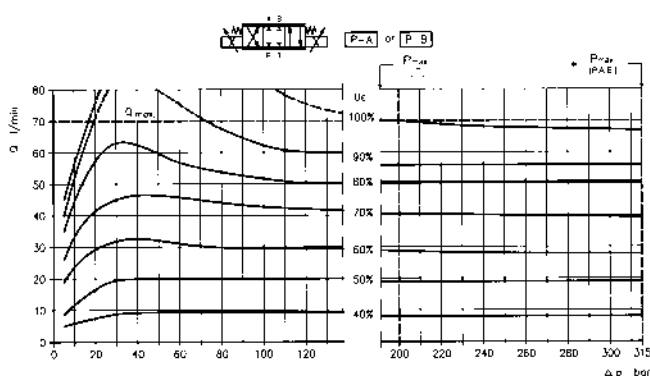
Electronics adjustment
 see page 230

- 1) Version: $U_E = 0 \dots +10 \text{ V}$
- 2) Version: $I_E = 4 \dots 20 \text{ mA}$

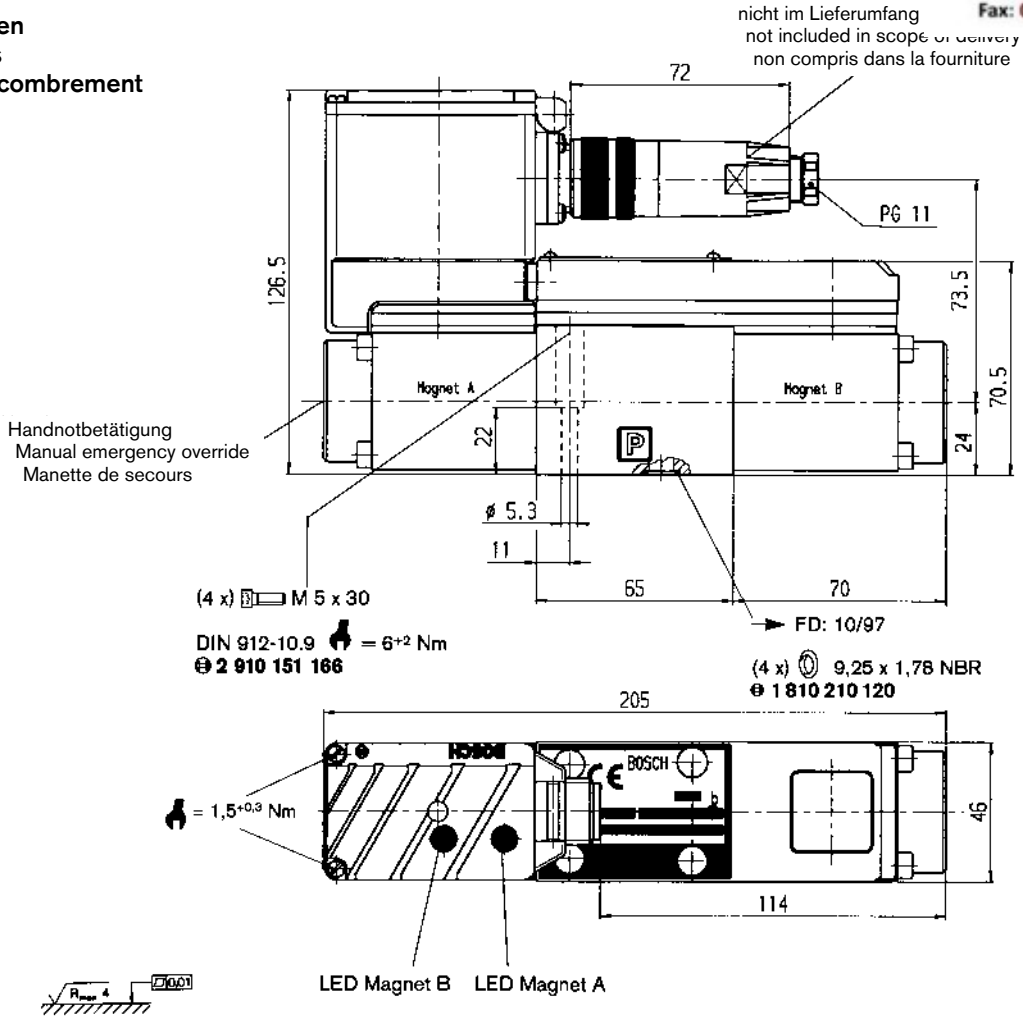
Tarage de l'électronique,
 voir page 230

- 1) Version: $U_E = 0 \dots +10 \text{ V}$
- 2) Version: $I_E = 4 \dots 20 \text{ mA}$

Einsatzgrenzen
Operating limits
Limites d'utilisation



**Abmessungen
 Dimensions
 Cotes d'encombrement**



6

Abmessungen des Anschlusslochbildes NG 6 ISO 4401 siehe Seite 212

Dimensions of mounting hole configuration NG 6 ISO 4401 see page 212

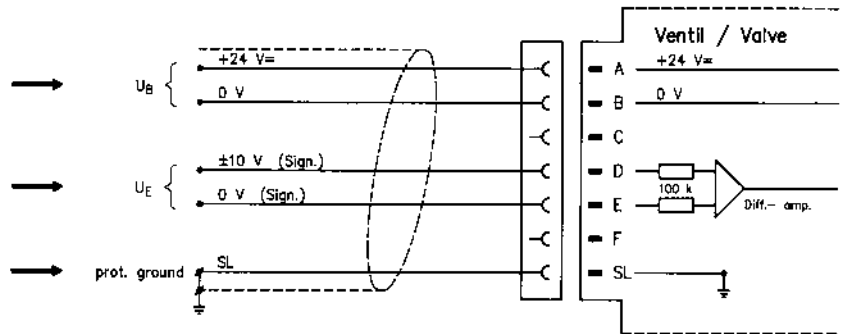
Cotes du plan de pose NG 6 ISO 4401 voir page 212

Steckerbelegung ohne Lageregelung

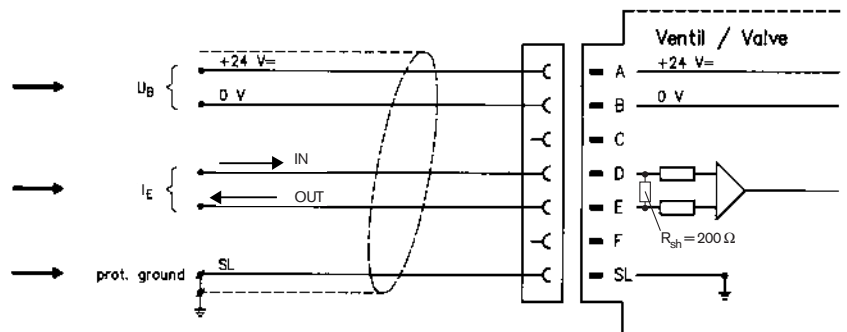
Pin assignment without position control

Affectation du connecteur sans régulation de position

Version: $U_E = 0 \dots +10 \text{ V}$
 $R_i = 100 \text{ k}\Omega$



Version: $I_E = 4 \dots 12 \dots 20 \text{ mA}$

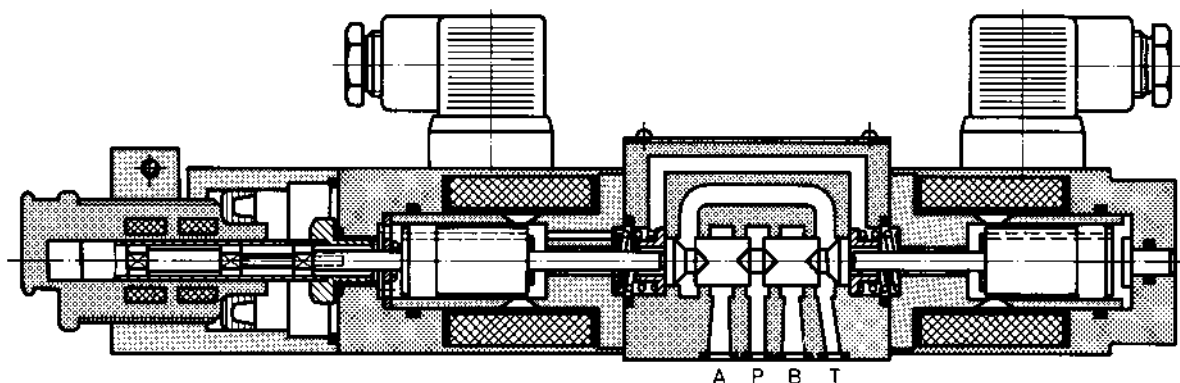


NG 6

Wegeventile Directional control valves Distributeurs



Funktion
 Function
 Fonction



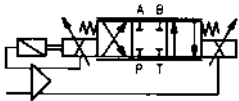
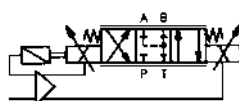





6

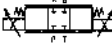
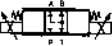
▶ mit Lageregelung

▶▶ with position control

▶▶▶ avec régulation de position

| Sinnbild Symbol Symbole |  A/VA max | Δp [bar] | $Q_{nom.}$ [l/min] Q_A Q_B | | $p_{max.}$ [bar] |  | [kg] | ⊕ |
|---|---|---------------------|--------------------------------------|-----|---------------------------|---|------|---------------|
| ③  01 | 2,7/40 | 5 | 8 | 8 | P, A, B: 315 T: 250 | 2-K 3-K | 2,8 | 0 811 404 101 |
| ③  01 + L | | | 16 | 16 | | | | 0 811 404 100 |
| | | | 28 | 28 | | | | 0 811 404 119 |
| | | | 5,8 | 5,8 | | | | 0 811 404 126 |
| | | | 14 | 14 | | | | 0 811 404 120 |
| | | | 28 | 28 | | | | 0 811 404 121 |
| (4 x)  M 5 x 30 DIN 912-10.9 | | | | | | | | 2 910 151 166 |
|  |  | | WV 45 – RGC2 | | 2-K | | 0,25 | 0 811 405 119 |
| | | | WV 45 – RGC4 | | | | | 3-K |
| Seite Page 266 | | | | | | | | |

Kenngrößen

| | | | | |
|---|---|---------------------------------|-------------------------|--|
| Allgemein | | | | |
| Bauart | Schieberventil | | | |
| Betätigung | Proportionalmagnet mit Lageregelung | | | |
| Anschlussart | Plattenanschluss, Lochbild NG 6 (ISO 4401) | | | |
| Einbaulage | beliebig | | | |
| Umgebungstemperatur | -20 ... +50 °C | | | |
| Hydraulisch | | | | |
| Druckmittel | Hydrauliköl nach DIN 51 524 ... 535, andere Medien nach Rückfrage | | | |
| Viskosität, empfohlen | 20 ... 100 mm ² /s | | | |
| | max. zulässig 10 ... 800 mm ² /s | | | |
| Druckmitteltemperatur | -20 ... +80 °C | | | |
| Filterung | Zulässige Verschmutzungsstufe | | Zu erreichen mit Filter | |
| | des Druckmittels nach NAS 1638 | | β _x = 75 | |
| | 8 | | X = 10 | |
| | 9 | | 20 | |
| Entsprechend Betriebssicherheit und Lebensdauer | 10 | | 25 | |
| | Durchflussrichtung siehe Sinnbild | | | |
| | Nenndurchfluss (bei Δp = 5 bar)* | | | |
| Lecköl/Steuerkante (Δp = 100 bar) |  | A → T = 80 cm ³ /min | | |
| | | B → T = 80 cm ³ /min | | |
| Leckölentlastung (Δp = 5 bar) |  | A → T = 0,8 ... 1,6 l/min | | |
| | | B → T = 0,8 ... 1,6 l/min | | |
| Max. Betriebsdruck | Anschluss P, A, B: | | 315 bar | |
| | Anschluss T: | | 250 bar | |
| Elektrisch | | | | |
| Relative Einschaltdauer | 100% ED | | | |
| Schutzart | IP 65 nach DIN 40 050 und IEC 14 434/5 | | | |
| Anschluss Magnet | Gerätesteckdose DIN 43 650/ISO 4400 | | | |
| Anschluss Wegaufnehmer | Spezialsteckdose | | | |
| Magnetstrom | max. 2,7 A | | | |
| Spulenwiderstand R ₂₀ | 3 Ω | | | |
| Max. Leistungsaufnahme bei 100% Last und Betriebstemperatur | 40 VA max | | | |
| Statisch/Dynamisch | | | | |
| Hysterese | 0,3% | | | |
| Umkehrspanne | 0,2% | | | |
| Exemplarstreuung | 5% | | | |
| Stellzeit 100% Signalsprung | 30 ms | | | |
| | 10% Signalsprung 15 ms | | | |

Alle Kenngrößen in Verbindung mit Proportionalverstärker: WV 45 – RGC 2

*** Nenndurchfluss**

Dieser bezieht sich immer auf eine Druckdifferenz an der Drosselstelle von Δp = 5 bar.

Der Durchfluss bei anderen Differenzdrücken berechnet sich nach:

$$Q_x = Q_{nom.} \cdot \sqrt{\frac{\Delta p_x}{5}}$$

Hierbei sind jedoch die **Einsatzgrenzen** zu beachten. Bei Überschreitung der Einsatzgrenzen treten Strömungskräfte auf, die zu unkontrollierbaren Schieberbewegungen führen. Durch die Verwendung von **Druckwaagen** wird Δp sicher begrenzt.

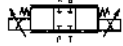
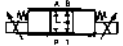


Characteristics

General

| | |
|---------------------------|---|
| Construction | Spool type valve |
| Actuation | Proportional solenoid with position control |
| Connection type | Subplate, mounting hole configuration NG 6 (ISO 4401) |
| Mounting position | optional |
| Ambient temperature range | -20 ... +50 °C |

Hydraulic

| | | | | | |
|---|--|---|----|-----------------------|------------------------|
| Pressure medium | Hydraulic oil as per DIN 51 524 ... 535, other fluids after prior consultation | | | | |
| Viscosity, recommended | 20 ... 100 mm ² /s | | | | |
| | max. permitted 10 ... 800 mm ² /s | | | | |
| Pressure medium temperature | -20 ... +80 °C | | | | |
| Filtration | Permissible contamination class of pressure medium as per NAS 1638 | | | Achieved using filter | |
| In line with operational reliability and service life | 8 | | | β _x = 75 | |
| | 9 | | | X = 10 | |
| | 10 | | | 20 | |
| | 10 | | | 25 | |
| Flow direction | cf. symbol | | | | |
| Nominal flow (at Δp = 5 bar) * | 5,8 | 8 | 14 | 16 | 28 l/min (per channel) |
| Leakage/Metering edge (Δp = 100 bar) |  A → T = 80 cm ³ /min B → T = 80 cm ³ /min | | | | |
| Leakage drain (Δp = 5 bar) |  A → T = 0.8 ... 1.6 l/min B → T = 0.8 ... 1.6 l/min | | | | |
| Max. working pressure | Ports P, A, B: 315 bar Port T: 250 bar | | | | |

Electrical

| | |
|---|--|
| Cyclic duration factor | 100% |
| Degree of protection | IP 65 as per DIN 40 050 and IEC 14 434/5 |
| Solenoid connector | Connector DIN 43 650/ISO 4400 |
| Position transducer connector | Special connector |
| Solenoid current | max. 2.7 A |
| Coil resistance R ₂₀ | 3 Ω |
| Max. power consumption at 100% load and operational temperature | 40 VA max |

Static/Dynamic

| | |
|----------------------------------|-------|
| Hysteresis | 0.3% |
| Range of inversion | 0.2% |
| Manufacturing tolerance | 5% |
| Response time 100% signal change | 30 ms |
| | 15 ms |

All characteristic values in connection with proportional amplifier: WV 45 – RGC 2

* Nominal flow

This is always based on a pressure differential of Δp = 5 bar at the throttle point.

Where other pressure differentials are involved, flow is calculated according to the following formula:

$$Q_x = Q_{\text{nom.}} \cdot \sqrt{\frac{\Delta p_x}{5}}$$

However, the **operating limits** must be borne in mind here.

When the operating limits are exceeded, the ensuing flow forces lead to uncontrollable spool movements.

To achieve effective limitation of Δp, use is made of **pressure compensators**.



Caractéristiques

Générales

| | |
|----------------------|---|
| Construction | Distributeur à tiroir |
| Commande | Aimant à action proportionnelle avec régulation de position |
| Raccordement | Embase selon plan de pose NG 6 (ISO 4401) |
| Position de montage | indifférente |
| Température ambiante | -20 ... +50 °C |

Hydrauliques

| | | | | | |
|---|---|---|---------------------------------------|----|----------------------|
| Fluide | Fluide hydraulique selon norme DIN 51 524 ... 535, autre fluide sur demande | | | | |
| Viscosité, conseillée max. admissible | 20 ... 100 mm ² /s | | | | |
| | 10 ... 800 mm ² /s | | | | |
| Température du fluide | -20 ... +80 °C | | | | |
| Filtration | Classe de pollution admissible du fluide selon NAS 1638 | | Avec un filtre β _x = 75 | | |
| | 8 | | X = 10 | | |
| | 9 | | 20 | | |
| | 10 | | 25 | | |
| Selon sécurité de fonctionnement et durée de vie | | | | | |
| Sens d'écoulement | voir symbole | | | | |
| Débit nominal (pour Δp = 5 bar) * | 5,8 | 8 | 14 | 16 | 28 l/min (par canal) |
| Fuites internes/Arête de distribution (Δp = 100 bar) | A → T = 80 cm ³ /min B → T = 80 cm ³ /min | | | | |
| Drainage de fuites internes (Δp = 5 bar) | A → T = 0,8 ... 1,6 l/min B → T = 0,8 ... 1,6 l/min | | | | |
| Pression de service max. | Orifice P, A, B: 315 bar Orifice T: 250 bar | | | | |

Electriques

| | |
|---|--|
| Facteur de marche réelle | FM 100% |
| Degré de protection | IP 65 selon norme DIN 40 050 et IEC 14 434/5 |
| Branchement électro-aimant | par prise selon norme DIN 43 650/ISO 4400 |
| Branchement du capteur de position | Prise spéciale |
| Courant d'alimentation de l'électro-aimant | max. 2,7 A |
| Résistance de la bobine R ₂₀ | 3 Ω |
| Consommation max. pour charge 100% et température de service | 40 VA max |

Statiques/Dynamiques

| | |
|---|--------|
| Hystérésis | 0,3% |
| Seuil d'inversion | 0,2% |
| Dispersion | 5% |
| Temps de réponse pour une course de 100% | 30 ms |
| | de 10% |

Toute caractéristique en liaison avec l'amplificateur électronique proportionnel: WV 45 – RGC 2

*** Débit nominal**

Toujours par rapport à une différence de pression à l'étranglement de Δp = 5 bar.

Le débit pour d'autres différences de pression se calcule comme suit:

$$Q_x = Q_{nom.} \cdot \sqrt{\frac{\Delta p_x}{5}}$$

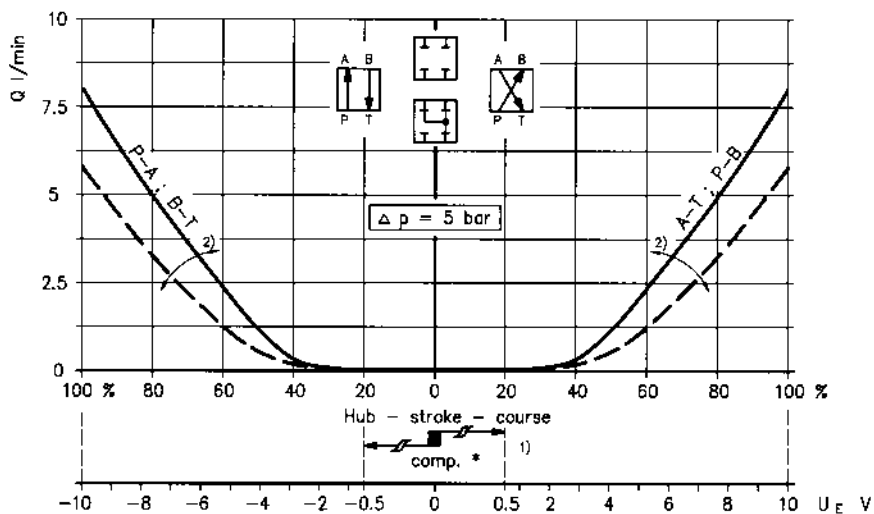
Il faut néanmoins tenir compte des **limites d'utilisation.**

En cas de dépassement de ces plages d'utilisation, une pression trop élevée entraîne des déplacements de tiroir non contrôlés. L'utilisation de **balances de pression** permet de limiter en toute sécurité le Δp.

Kennlinien
Performance curves
Courbes caractéristiques
 $v = 35 \text{ mm}^2/\text{s}$

$Q_{nom.} = 5,8/8 \text{ l/min}$
Symb. 01 und/and/et 01 + L

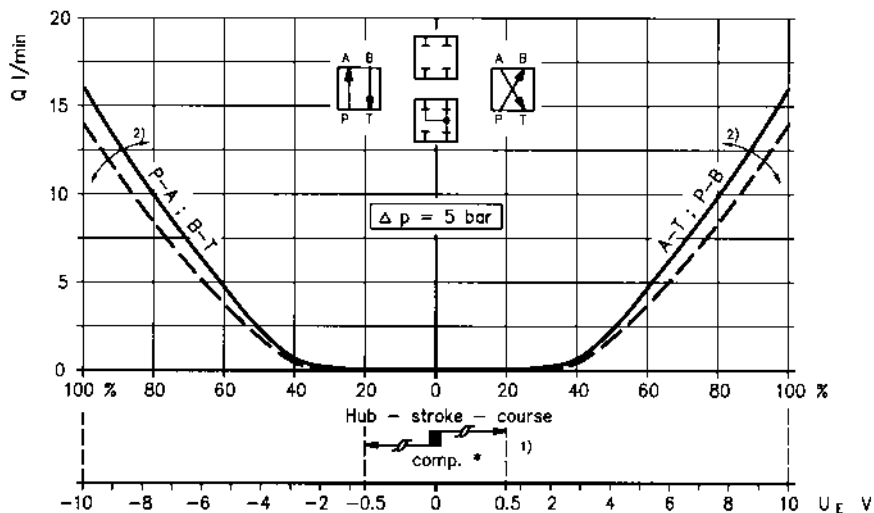
—— $Q_N = 8 \text{ l/min}$
 - - - $Q_N = 5,8 \text{ l/min}$



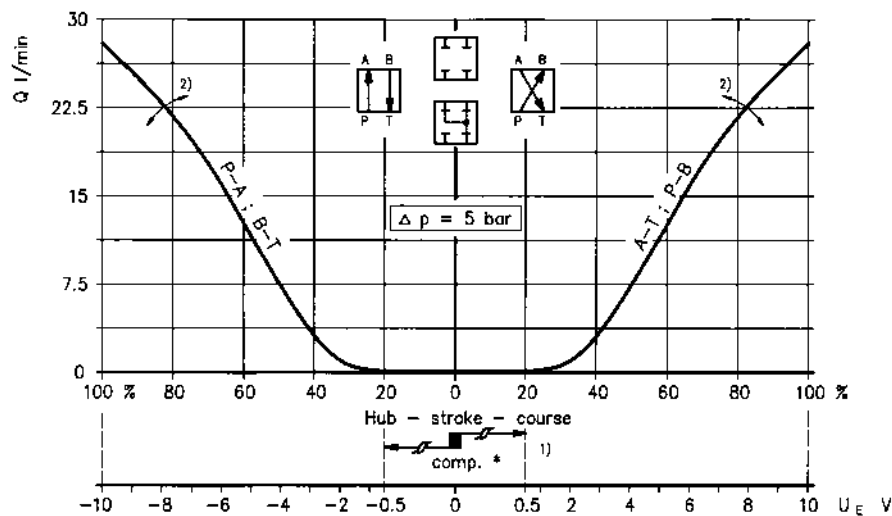
6

$Q_{nom.} = 14/16 \text{ l/min}$
Symb. 01 und/and/et 01 + L

—— $Q_N = 16 \text{ l/min}$
 - - - $Q_N = 14 \text{ l/min}$



$Q_{nom.} = 28 \text{ l/min}$
Symb. 01 und/and/et 01 + L



Ventilverstärker

- 1) Nullpunkt-Justierung → ±0,5 V
- 2) Empfindlichkeits-Justierung

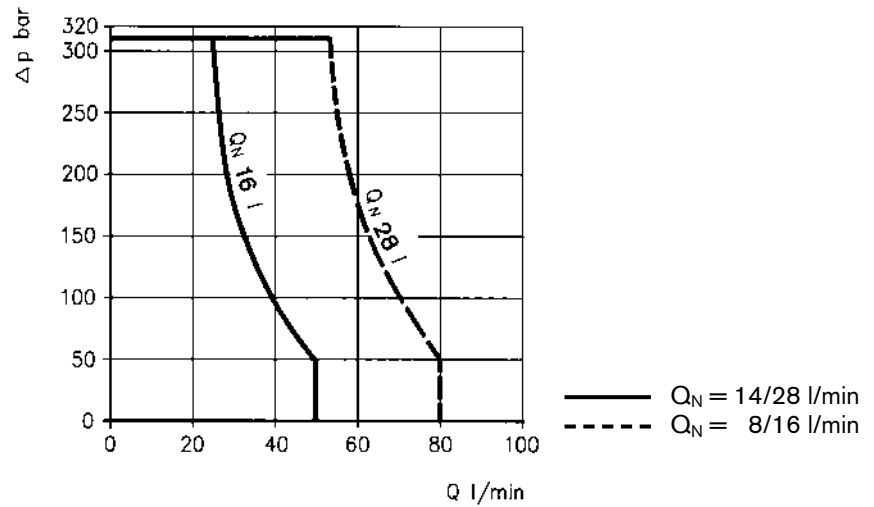
Valve amplifier

- 1) Zero adjustment → ±0.5 V
- 2) Gain adjustment

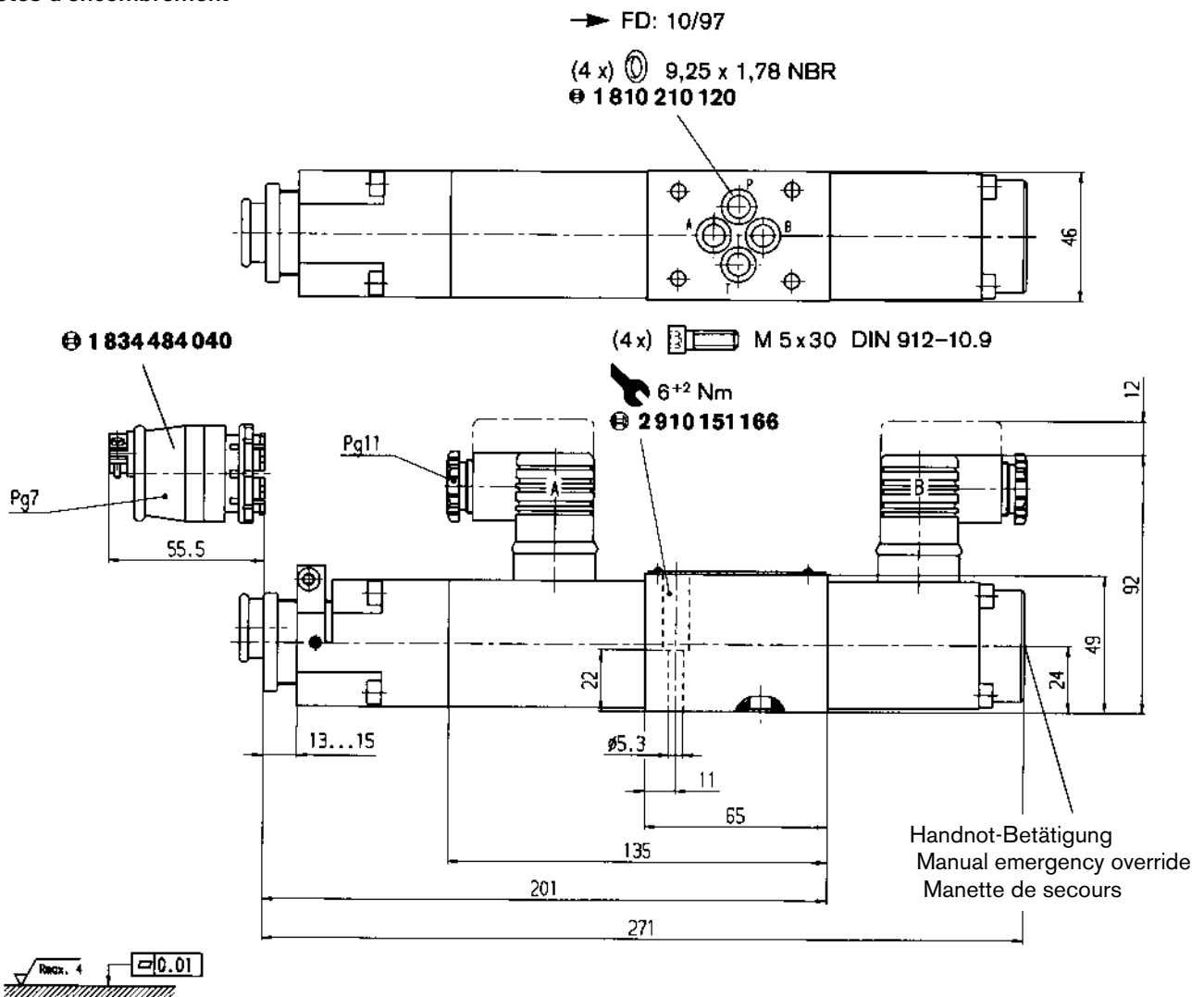
Amplificateur de valve

- 1) Tarage du zéro → ±0,5 V
- 2) Tarage du gain

Einsatzgrenzen
Operating limits
Limites d'utilisation



Abmessungen
Dimensions
Cotes d'encombrement



► Abmessungen des Anschlusslochbildes NG 6 ISO 4401 siehe Seite 212

►► Dimensions of mounting hole configuration NG 6 ISO 4401 see page 212

►►► Cotes du plan de pose NG 6 ISO 4401 voir page 212

NG 6

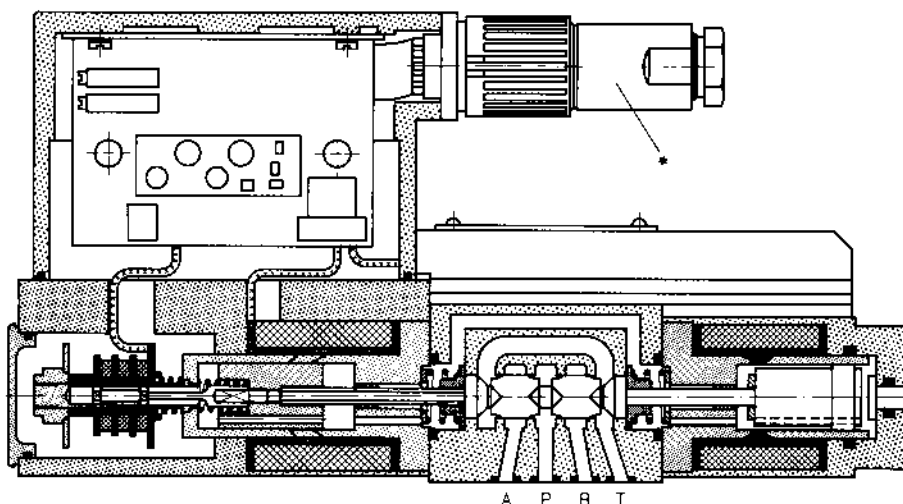
Wegeventile mit OBE

Directional control valves with OBE

Distributeurs avec OBE



Funktion
 Function
 Fonction



6

▶ mit Lageregelung

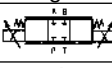
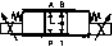
▶▶ with position control

▶▶▶ avec régulation de position

| Sinnbild Symbol Symbole | | Δp [bar] | $Q_{nom.}$ [l/min] Q_A Q_B | | $P_{max.}$ [bar] | | [kg] | Ⓢ |
|---|--|---------------------|--------------------------------------|--------|---------------------------|--|------|---------------|
| (4) OBE 01 $U_{D-E} 0 \dots \pm 10 V$ | | 5 | 18 | 18 | P, A, B: 315 T: 200 | | 3,9 | 0 811 404 140 |
| | | | 32 | 32 | | | | 0 811 404 141 |
| (4) OBE 01 + L | | 5 | 7 | 7 | | | | 0 811 404 145 |
| | | | 18 | 18 | | | | 0 811 404 142 |
| (4) OBE 01 + L $I_{D-E} 4 \dots 20 mA$ | | 5 | 18 | 18 | | | | 0 811 404 146 |
| | | | 32 | 32 | | | | 0 811 404 147 |
| (4 x) \Rightarrow M 5 x 30 DIN 912-10.9 | | | | | | | | 2 910 151 166 |
| * Stecker 7-polig Plug 7-pole Connecteur 7 pôles Seite Page 241 | | | | KS | | | | 1 834 482 022 |
| | | | | KS | | | | 1 834 482 026 |
| | | | | MS | | | | 1 834 482 023 |
| | | | | MS | | | | 1 834 482 024 |
| | | | | KS 90° | | | | 1 834 484 252 |

Variante 4 ... 20 mA-Signal auf Anfrage
 4 ... 20 mA version on request
 Variante signal 4 ... 20 mA sur demande

Kenngrößen

| | | |
|---|--|--|
| Allgemein | | |
| Bauart | Schieberventil, ohne Stahlhülse | |
| Betätigung | Proportionalmagnet mit Lageregelung und mit eingebauter Elektronik | |
| Anschlussart | Plattenanschluss, Lochbild NG 6 (ISO 4401) | |
| Einbaulage | beliebig | |
| Umgebungstemperatur | -20 ... +50 °C | |
| Rüttelfestigkeit, Prüfbedingung | max. 25 g, Raumschüttelprüfung in allen Richtungen (24 h) | |
| Hydraulisch | | |
| Druckmittel | Hydrauliköl nach DIN 51 524 ... 535, andere Medien nach Rückfrage | |
| Viskosität, empfohlen | 20 ... 100 mm ² /s | |
| max. zulässig | 10 ... 800 mm ² /s | |
| Druckmitteltemperatur | -20 ... +70 °C | |
| Filterung | Zulässige Verschmutzungsstufe des Druckmittels nach NAS 1638 | Zu erreichen mit Filter β _x = 75 |
| | 7 | X = 5 |
| | 8 | 10 |
| | 9 | 15 |
| Entsprechend Betriebssicherheit und Lebensdauer | | |
| Durchflussrichtung | siehe Sinnbild | |
| Max. Betriebsdruck (statisch) | Anschluss P, A, B: 315 bar Anschluss T: 200 bar | |
| Nenndurchfluss (bei Δp = 5 bar)* | 18 | 32 l/min (pro Steuerkante) |
| | Q _A bei 8 V | 14 ±3% 25 ±3% |
| Einsatzgrenze | siehe Diagramm | |
| Lecköl/Steuerkante (Δp = 100 bar) |  | A → T = 80 cm ³ /min B → T = 80 cm ³ /min |
| Leckölentlastung (Δp = 5 bar) |  | A → T = 0,8 ... 1,6 l/min B → T = 0,8 ... 1,6 l/min |
| Statisch/Dynamisch | | |
| Hysterese | < 0,3% | |
| Umkehrspanne | < 0,2% | |
| Exemplarstreuung | ≤ ±3% | |
| Stellzeit 100% Signalsprung | 20 ms | |
| 10% Signalsprung | 5 ms | |
| Temperaturdrift | < 1% bei ΔT = 40 °C | |
| Elektrische Kenngrößen | siehe Seite 223 (OBE) | |

6

*** Nenndurchfluss**

Dieser bezieht sich immer auf eine Druckdifferenz an der Drosselstelle von Δp = 5 bar. Der Durchfluss bei anderen Differenzdrücken berechnet sich nach:

$$Q_x = Q_{nom.} \cdot \sqrt{\frac{\Delta p_x}{5}}$$

Hierbei sind jedoch die **Einsatzgrenzen** zu beachten. Bei Überschreitung der Einsatzgrenzen treten Strömungskräfte auf, die zu unkontrollierbaren Schieberbewegungen führen. Durch die Verwendung von **Druckwaagen** wird Δp sicher begrenzt.

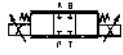
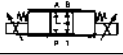


Characteristics

General

| | |
|--------------------------------------|---|
| Construction | Spool type valve, without steel sleeve |
| Actuation | Proportional solenoid with position control and with on-board electronics |
| Connection type | Subplate, mounting hole configuration NG 6 (ISO 4401) |
| Mounting position | optional |
| Ambient temperature range | -20 ... +50 °C |
| Vibration resistance, test condition | max. 25 g, shaken in 3 dimensions (24 h) |

Hydraulic

| | | |
|---|--|--|
| Pressure medium | Hydraulic oil as per DIN 51 524 ... 535, other fluids after prior consultation | |
| Viscosity, recommended | 20 ... 100 mm ² /s | |
| max. permitted | 10 ... 800 mm ² /s | |
| Pressure medium temperature | -20 ... +70 °C | |
| Filtration | Permissible contamination class of pressure medium as per NAS 1638 | Achieved using filter β _x = 75 |
| In line with operational reliability and service life | 7 | X = 5 |
| | 8 | 10 |
| | 9 | 15 |
| Flow direction | cf. symbol | |
| Max. working pressure (static) | Ports P, A, B: 315 bar Port T: 200 bar | |
| Nominal flow (at Δp = 5 bar)* | 18 | 32 l/min (per metering edge) |
| | Q _A at 8 V | 14 ±3% 25 ±3% |
| Operating limits | see diagram | |
| Leakage/Metering edge (Δp = 100 bar) |  | A → T = 80 cm ³ /min B → T = 80 cm ³ /min |
| Leakage drain (Δp = 5 bar) |  | A → T = 0.8 ... 1.6 l/min B → T = 0.8 ... 1.6 l/min |
| Static/Dynamic | | |
| Hysteresis | < 0.3% | |
| Range of inversion | < 0.2% | |
| Manufacturing tolerance | ≅ ±3% | |
| Response time 100% signal change | 20 ms | |
| 10% signal change | 5 ms | |
| Thermal drift | < 1% at ΔT = 40 °C | |
| Electrical characteristics | see page 223 (OBE) | |

* Nominal flow

This is always based on a pressure differential of Δp = 5 bar at the throttle point.

Where other pressure differentials are involved, flow is calculated according to the following formula:

$$Q_x = Q_{\text{nom.}} \cdot \sqrt{\frac{\Delta p_x}{5}}$$

However, the **operating limits** must be borne in mind here.

When the operating limits are exceeded, the ensuing flow forces lead to uncontrollable spool movements.

To achieve effective limitation of Δp, use is made of **pressure compensators**.



Caractéristiques

Générales

| | |
|-------------------------------|--|
| Construction | Distributeur à tiroir, sans fourreau en acier |
| Commande | Aimant à action proportionnelle avec régulation de position avec amplificateur intégré |
| Raccordement | Embase selon plan de pose NG 6 (ISO 4401) |
| Position de montage | indifférente |
| Température ambiante | -20 ... +50 °C |
| Vibrations, condition du test | max. 25 g, 3 dimensions (24 h) |

Hydrauliques

| | | |
|--|---|---------------------------------------|
| Fluide | Fluide hydraulique selon norme DIN 51 524 ... 535, autre fluide sur demande | |
| Viscosité, conseillée max. admissible | 20 ... 100 mm ² /s | |
| | 10 ... 800 mm ² /s | |
| Température du fluide | -20 ... +70 °C | |
| Filtration | Classe de pollution admissible du fluide selon NAS 1638 | Avec un filtre β _x = 75 |
| Selon sécurité de fonctionnement et durée de vie | 7 | X = 5 |
| | 8 | 10 |
| | 9 | 15 |
| Sens d'écoulement | voir symbole | |
| Pression de service max. (statique) | Orifice P, A, B: 315 bar Orifice T: 200 bar | |
| Débit nominal (pour Δp = 5 bar)* Q _A à 8 V | 18 | 32 l/min (par arête de distribution) |
| | 14 ±3% | 25 ±3% |

Limites d'utilisation

| | | |
|---|--|--|
| Fuites internes/Arête de distribution (Δp = 100 bar) | | A → T = 80 cm ³ /min B → T = 80 cm ³ /min |
| Drainage de fuites internes (Δp = 5 bar) | | A → T = 0,8 ... 1,6 l/min B → T = 0,8 ... 1,6 l/min |

Statiques/Dynamiques

| | |
|---|----------------------|
| Hystérésis | < 0,3% |
| Seuil d'inversion | < 0,2% |
| Dispersion | ≅ ±3% |
| Temps de réponse pour une course de 100% | 20 ms |
| | 5 ms |
| Dérive en température | < 1% pour ΔT = 40 °C |
| Caractéristiques électriques | voir page 223 (OBE) |

*** Débit nominal**

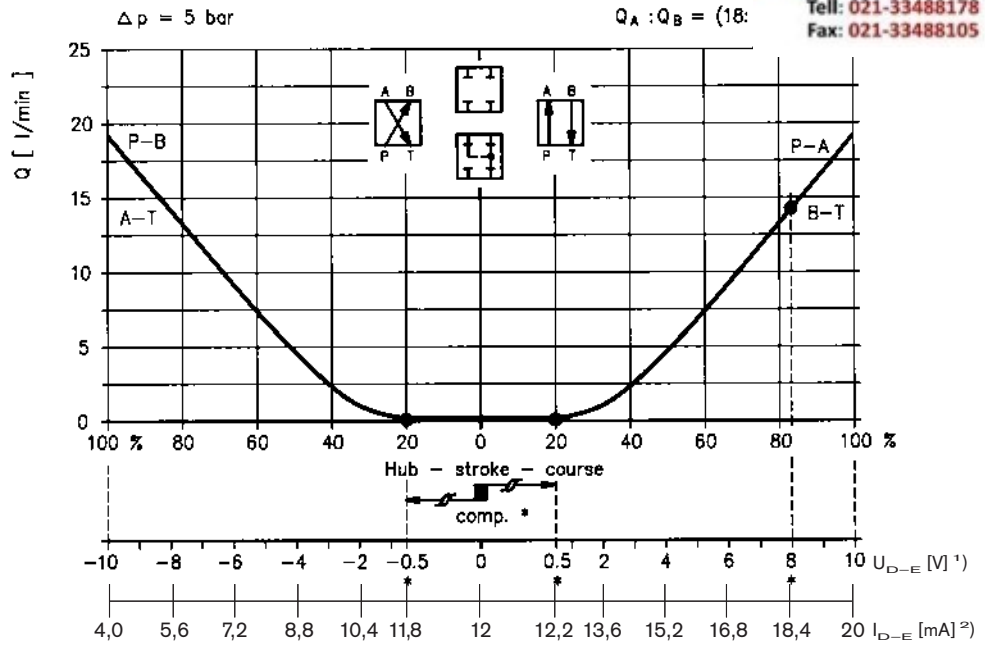
Toujours par rapport à une différence de pression à l'étranglement de Δp = 5 bar.
 Le débit pour d'autres différences de pression se calcule comme suit:

$$Q_x = Q_{nom.} \cdot \sqrt{\frac{\Delta p_x}{5}}$$

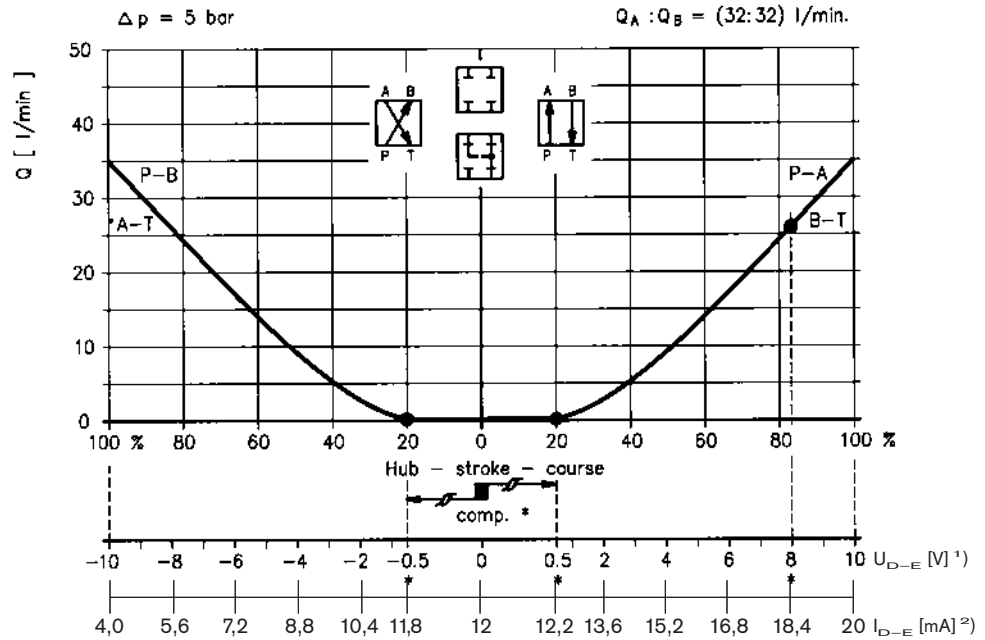
Il faut néanmoins tenir compte des **limites d'utilisation**.
 En cas de dépassement de ces plages d'utilisation, une pression trop élevée entraîne des déplacements de tiroir non contrôlés. L'utilisation de **balances de pression** permet de limiter en toute sécurité le Δp.

Kennlinien
Performance curves
Courbes caractéristiques
 $v = 35 \text{ mm}^2/\text{s}$

$Q_{\text{nom.}} = 18 \text{ l/min}$



$Q_{\text{nom.}} = 32 \text{ l/min}$



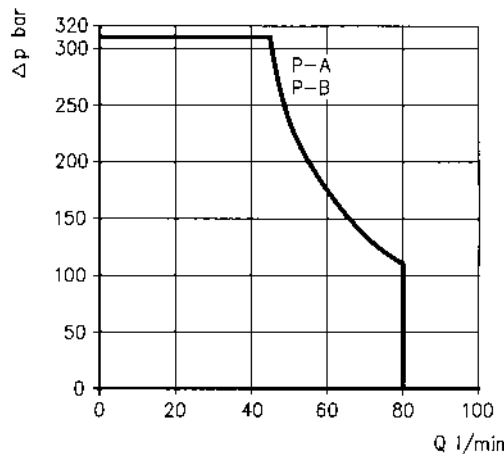
6

► * WerkEinstellung $\leq \pm 3\%$
 1) Version: $U_E = 0 \dots +10 \text{ V}$
 2) Version: $I_E = 4 \dots 20 \text{ mA}$

►► * Factory setting $\leq \pm 3\%$
 1) Version: $U_E = 0 \dots +10 \text{ V}$
 2) Version: $I_E = 4 \dots 20 \text{ mA}$

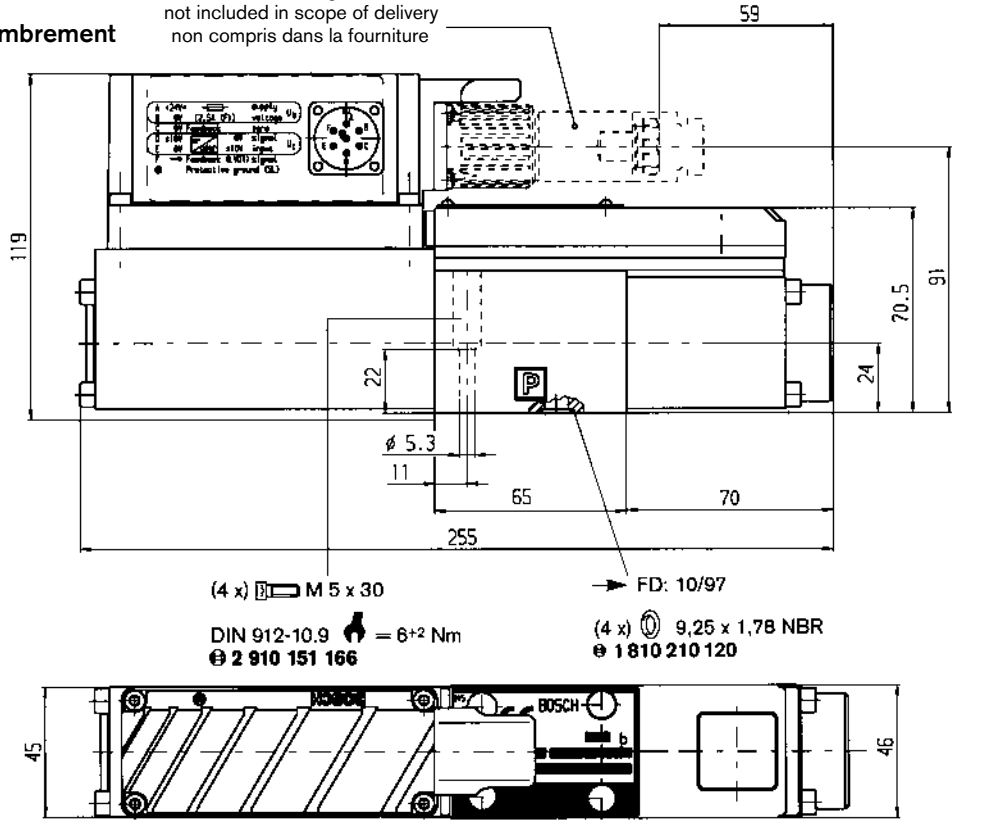
►►► * Réglage par l'usine $\leq \pm 3\%$
 1) Version: $U_E = 0 \dots +10 \text{ V}$
 2) Version: $I_E = 4 \dots 20 \text{ mA}$

Einsatzgrenzen
Operating limits
Limites d'utilisation



**Abmessungen
 Dimensions
 Cotes d'encombrement**

nicht im Lieferumfang enthalten
 not included in scope of delivery
 non compris dans la fourniture



6

Abmessungen des Anschlusslochbildes NG 6 ISO 4401 siehe Seite 212

Dimensions of mounting hole configuration NG 6 ISO 4401 see page 212

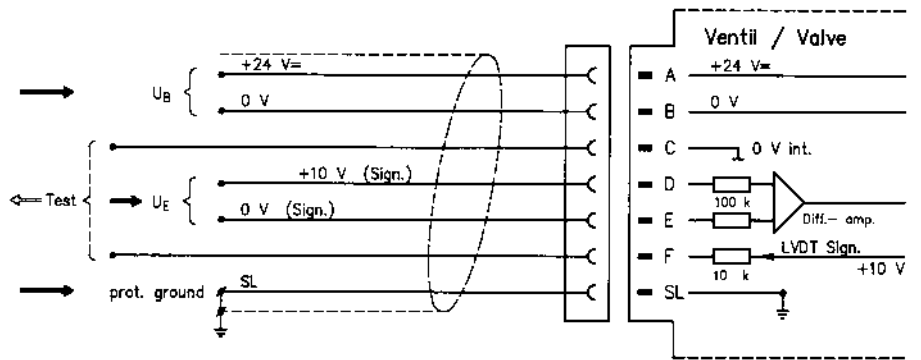
Cotes du plan de pose NG 6 ISO 4401 voir page 212

Steckerbelegung mit Lageregulung

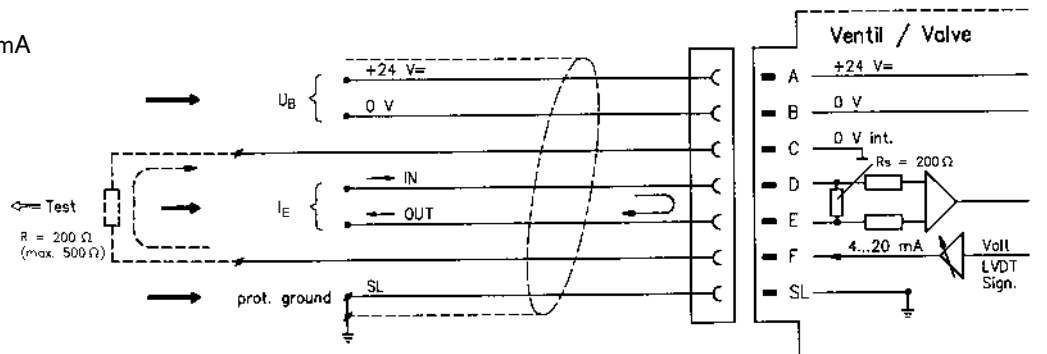
Pin assignment with position control

Affectation du connecteur avec régulation de position

Version: $U_E = 0 \dots +10\text{ V}$
 $R_i = 100\text{ k}\Omega$



Version: $I_E = 4 \dots 12 \dots 20\text{ mA}$

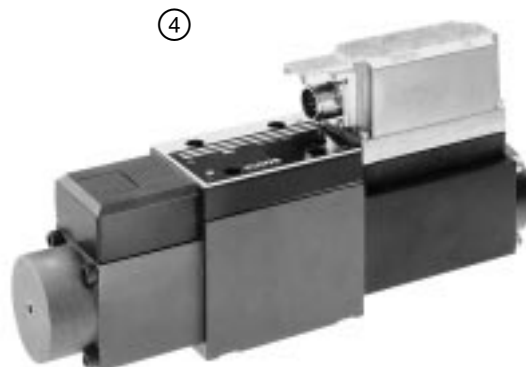
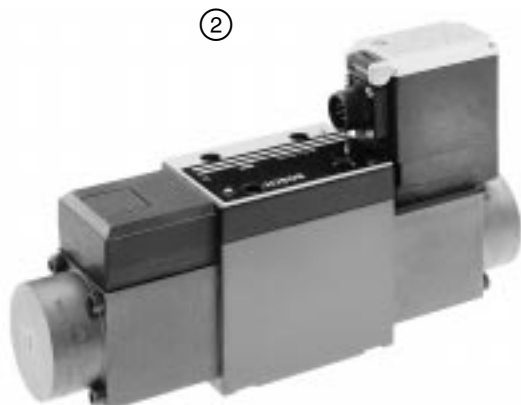
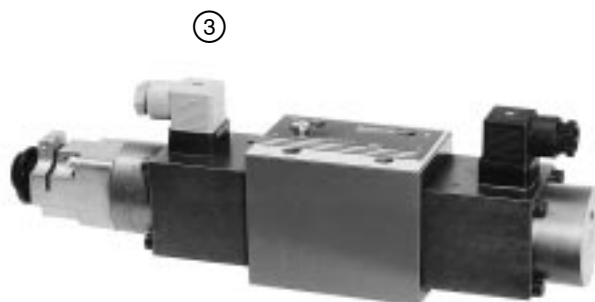
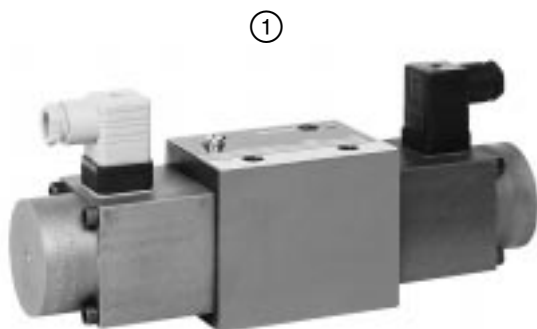


NG 10

Proportional-Wegeventile

Proportional directional control valves

Distributeurs proportionnels



7

▶
 ① **ohne** Lageregelung
 Version: Standard 2,5 A

② **ohne** Lageregelung und
 eingebauter Elektronik – OBE

③ **mit** Lageregelung
 Version: LVDT – AC

④ **mit** Lageregelung und
 eingebauter Elektronik – OBE

▶▶
 ① **without** position control
 Version: Standard 2.5 A

② **without** position control and
 on-board electronics – OBE

③ **with** position control
 Version: LVDT – AC

④ **with** position control and
 on-board electronics – OBE

▶▶▶
 ① **sans** régulation de position
 Version: Standard 2,5 A

② **sans** régulation de position et
 amplificateur intégré – OBE

③ **avec** régulation de position
 Version: LVDT – AC

④ **avec** régulation de position et
 amplificateur intégré – OBE

Bauart: Schieberventil

Construction: Spool type valve

Construction: Distributeur à tiroir