Connection

CE

- 1-channel
- 24 V DC supply voltage
- Lead breakage (LB) monitoring and short-circuit (SC) monitoring
- 4 limit values
- Transfer of HART signals
- Power Rail bus
- EMC acc. to NAMUR NE 21

Function

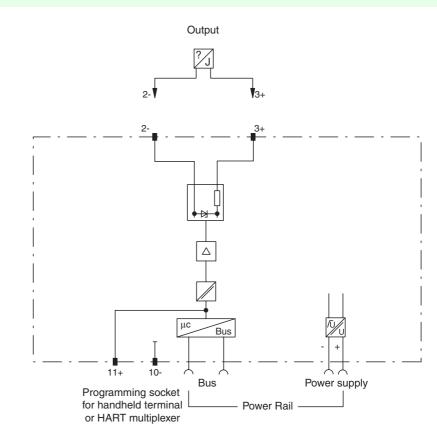
Der KSD2-CO-S transmits a 0/4 mA ... 20 mA current signal. Loads between 30 Ω ... 750 Ω can be connected. The output is galvanically isolated from the bus and power supply.

The output field circuit is monitored for lead breakage and short circuit conditions. The device allows for monitoring and programming of positioners, which support the HART protocol.

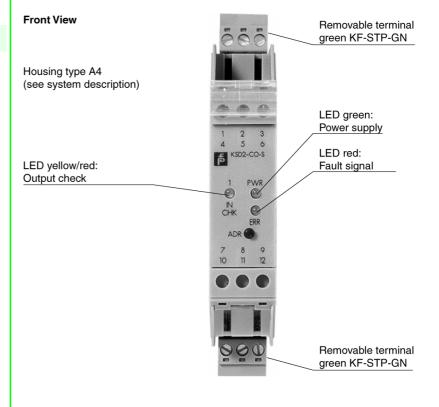
The KSD2-CO-S is delivered standard with the KF-STP-GN device connectors. The 2.3 mm jacks are integrated in this connector for use with HART communicators. The KFD2-HMM-16 or KFD0-HMS-16 HART multiplexers can be connected to terminals 11+ and 10-.

Application

The control of solenoid drivers and positioners. The interface allows a bidirectional communication between the position controller and a handheld terminal or a HART multiplexer. The bus transfers the digital control signal exclusively.



Composition



Subject to reasonable modifications due to technical advances

Copyright Pepperl+Fuchs, Printed in Germany

Connection Power Rail Rated voltage 2090 V DC Ripple 40 % Connection 1.3W Imput E Connection Power Rail Connection Connection Output E Connection Iterinals 2, 3 Connection 0420 mA Connection 0420 mA Cad 30750 Ω Residual ripple <025 % Lead Sossible for Incominal ≥ 1 mA Possible for Incominal ≥ 1 mA Sossible for Incominal ≥ 1 mA Influence famibient temperature 0.1% of output signal range at 20 °C (293;K) Influence famibient temperature 0.1% of output signal range at 20 °C (293;K) Influence famibient temperature 0.1% of output signal range at 20 °C (293;K) Influence famibient temperature 0.1% of output signal range at 20 °C (293;K) Influence famibient temperature 0.1% of output signal range at 20 °C (293;K) Influence famibient temperature E Influence famibient temperature E Influence famibient temperature E <	Supply	
Ripple< 10 %Power consumption1.3WPower ConsumptionPower RailConnectionPower RailConnectionCAN protocol via Power Rail busOutputEConnectionterminals 2, 3Current0/420 mALoad0750 QResidual ripple<0.25 %	Connection	Power Rail
Power consumption 1.3 W Input Input Power consumption I.3 W Input Input Connection Power Rail Connection CAN protocol via Power Rail bus Output Input S 2, 3 Current 04 20 mA Load 30 750 Ω Residual ripple <0.25 % Lead monitoring Solible for Inputsial 21 mA breakage I < 3.6 mA, short-circuit, load < 30 Ω Dreakage I < 3.6 mA, short-circuit, load < 30 Ω Solible for Inputsial 20 °C (293;K) Influence of ambient temperature 0.01 % / K of output signal range at 20 °C (293;K) Output/yower supply, internal bus basic insulation acc. to EN 50178, rated insulation voltage 300 Vett Output/yower supply, internal bus basic insulation acc. to EN 50178, rated insulation voltage 300 Vett Output/yower supply, internal bus basic insulation acc. to EN 50178, rated insulation voltage 300 Vett Directive supply and temperature El 4 Directive supply internal bus El 4 Electronagnetic compatibility NE 21 Insulation coordination El 50178 Electronagnetic compatibility </td <td>Rated voltage</td> <td>20 30 V DC</td>	Rated voltage	20 30 V DC
InputPower RallConnectionPower Rall busInterfaceCAN protocol via Power Rall busConnectionterminals 2, 3Courrent0420 mALoad03750, Q.Residual ripple<0.25 %	Ripple	< 10 %
Connection Power Rail Interface CAN protocol via Power Rail bus Output Connection Connection terminals 2, 3 Current 0/4 20 mA Load 30 750 Ω Residual ripple ≤0.25 % Lead monitoring possible for l _{nominal} ≥ 1 mA breakape I < 3.6 mA, short-circuit, load < 30 Ω	Power consumption	1.3 W
InterfaceCAN protocol via Power Rail busOutputCAN protocol via Power Rail busOutputConnectionReminals 2, 3ConnectionUtminals 2, 3ConnectionLoad0420 mAConnectionLoad30750 Ω Residual ripple ≤ 0.25 %Lead monitoring ≤ 0.25 % \geq Deviation0.1% of output signal range at 20 °C (233,K)Influence of ambient temperature0.1% of output signal range at 20 °C (233,K)Influence of ambient temperature0.01% /K of output signal range at 20 °C (233,K)Influence of ambient temperature0.01% /K of output signal rangeDurited was subjective conformitybasic insulation acc. to EN 50178, rated insulation voltage 300 VerffInfluenceDirective as/330/ECEN 61326EN 61326Standard conformityEN 61326EN 61326Insulation coordinationEN 50178En 61326Connaction digreeEC 60529En 61326Connaction digreeIEC 60529En 61326Insulation coordinationIEC 60529En 61326Ambient conditionsIEC 60529En 61326Ambient temperature-2060 °C (25333 K)Angung 38Damaging gascac. to ISA-57.04-1985, severity Ievel G3Mechanical specificationsProtection degreeIP20Ornection degreeIP20Internacionaction 52.5 mm²Ornection degreeIP20Internacionaction 52.5 mm²Massapprox.100 g20 × 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Input	
Output Internation of terminals 2, 3 Current 0/4 20 mA Current 0/4 20 mA Load 30 750 Ω Residual ripple < 0.25 %	Connection	Power Rail
Connectionterminals 2, 3Current0/420 mALoad30750 ΩResidual ripple50.25 %Lead monitoringpossible for I _{nominal} ≥ 1 mA breakage 1 < 3.6 mA, short-circuit, load < 30 Ω	Interface	CAN protocol via Power Rail bus
Current0/420 mALoad30750 ΩResidual ripple< 0.25 %	Output	
Load 30750 Ω Residual ripple ≤ 0.25 % Lead monitoring Solible for I _{nominial} ≥ 1 mA breakage I < 36 mA, short-circuit, load < 30 Ω Transfer characteristics Deviation 0.1 % of output signal range at 20 °C (293;K) Influence of ambient temperature 0.0 % /K of output signal range at 20 °C (293;K) 0.0 % /K of output signal range at 20 °C (293;K) Output/power supply, internal bus basic insulation acc. to EN 50178, rated insulation voltage 300 V _{eff} Directive conformity E E Directive soly336/EC EN 61326 E Standard conformity E E Insulation coordination EN 50178 E Electrical isolation EN 50178 E Condition degree EC 60529 E Insulation condination EC 60529 E Condition degree 20	Connection	terminals 2, 3
Residual ripple $\leq 0.25 %$ Lead monitoringpossible for I _{nominal} $\geq 1 mA$ breakage I < 3.6 mA, short-circuit, load < 30 Ω Transfer characteristicsDeviation0.1 % of output signal range at 20 °C (293;K)Influence of ambient temperature0.01 % / K of output signal rangeElectrical isolationOutput/power supply, internal busbasic insulation acc. to EN 50178, rated insulation voltage 300 V _{eff} Directive conformityElectromagnetic compatibilityElectromagnetic compatibilityDirective 89/336/ECEN 61326Standard confornityInsulation coordinationEN 50178Electromagnetic compatibilityNE 21Protection degreeIEC 60529Climatic conditionsEC 60721Ambient temperature-20 60 °C (253 333 K)Damaging gasacc. to ISA-S71.04-1985, severity level G3Protection degreeIP20ConnectionErminal connection $\leq 2.5 mn^2$ Massapprox.100 gDirensions20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Current	0/4 20 mA
Lead monitoring possible for I _{nominal} ≥ 1 mA breakage I < 3.6 mA, short-circuit, load < 30 Ω Transfer characteristics Deviation 0.1 % of output signal range at 20 °C (293;K) Influence of ambient temperature 0.01 % / K of output signal range Electrical isolation Output/power supply, internal bus basic insulation acc. to EN 50178, rated insulation voltage 300 V _{eff} Directive conformity Electrical isolation EN 61326 Standard conformity EN 61326 Electrical isolation EN 50178 Electrical isolation EN 60178 Electrical isolation EN 60178 Electrical isolation EI 60529 Climatic conditions EI 60529 Ambient temperature -2060 °C (253333 K) Amaging gas acc. to ISA-S71.04.1985, severity level G3	Load	30 750 Ω
breakage l ≤ 3.6 mA, short-circuit, load ≤ 30 Ω Transfer characteristics Deviation 0.10 % of output signal range at 20 °C (293; K) Diffuence of ambient temperature 0.10 % K of output signal range Electrical isolation Output/power supply, internal bus basic insulation acc. to EN 50178, rated insulation voltage 300 V _{eff} Directive conformity E Directive 89/336/EC No 61236 Standard conformity E Insulation coordination EN 61236 Electrical isolation EN 61236 Standard conformity E Insulation coordination EN 61236 Electrical isolation E 0.60529 Electrical isolation E 0.60529 Insulation conditions E 0.60529 Orige Conditions E 0.60529 Ambient conditions E 0.60529 Ambient conditions E 0.60529 Insulation conditions E 0.60529 Operation degree E 0.5029 Ambient conditions E 0.5029 Insulation accouncies E 0.6029 Operati	Residual ripple	≤ 0.25 %
Deviation0.1 % of output signal range at 20 °C (293;K)Influence of ambient temperature0.01 % / K of output signal rangeElectrical isolationOutput/power supply, internal busbasic insulation acc. to EN 50178, rated insulation voltage 300 V _{eff} Directive conformityElectrical isolationDirective 89/336/ECEN 61326Standard conformityInsulation coordinationEN 50178Electromagnetic compatibilityEN 50178Flectromagnetic compatibilityNE 21Protection degreeIEC 60529Climatic conditionsEC 60721Ambient temperature-20 60 °C (253 333 K)Damaging gasacc. to ISA-S71.04-1985, severity level G3Mechanical specificationsIP20Connectionterminal connection ≤ 2.5 mm²Massapprox. 100 gDimensions20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Lead monitoring	
Influence of ambient temperature 0.01 % / K of output signal range Electrical isolation basic insulation acc. to EN 50178, rated insulation voltage 300 V _{eff} Directive conformity basic insulation acc. to EN 50178, rated insulation voltage 300 V _{eff} Directive conformity EN 61026 Directive 89/336/EC EN 61326 Standard conformity EN 61326 Insulation coordination EN 61326 Electrical isolation EN 50178 Electronagnetic compatibility EN 50178 Electronagnetic compatibility NE 21 Protection degree IEC 60529 Climatic conditions IEC 60721 Ambient conditions -20 60 °C (253 333 K) Damaging gas -20 60 °C (253 333 K) Damaging gas IP20 Connection degree IP20 Connection degree IP20 Connection terminal connection ≤ 2.5 mm ² Mass approx.100 g Direction S = 0 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Transfer characteristics	
Electrical isolation Interctive conformity Directive conformity - Electromagnetic compatibility - Directive 89/336/EC EN 61326 Standard conformity - Insulation coordination EN 61326 Electromagnetic compatibility - Insulation coordination EN 61326 Electromagnetic compatibility EN 50178 Flectromagnetic compatibility EN 50178 Flectromagnetic compatibility EN 50178 Electromagnetic compatibility NE 21 Protection degree IEC 60529 Climatic conditions IEC 60529 Ambient temperature -20 60 °C (253 333 K) Damaging gas acc. to ISA-S71.04-1985, severity level G3 Mechanical specifications -20 60 °C (253 333 K) Protection degree IP20 Connection terminal connection ≤ 2.5 mm ² Mass approx.100 g Direction Summality approx.100 g	Deviation	0.1 % of output signal range at 20 °C (293;K)
Output/power supply, internal bus basic insulation acc. to EN 50178, rated insulation voltage 300 V _{eff} Directive conformity E Electromagnetic compatibility Insulation coordination EN 61326 Standard conformity Insulation coordination EN 50178 Electromagnetic compatibility Electromagnetic compatibility Insulation coordination EN 50178 Electrical isolation EN 50178 Electromagnetic compatibility NE 21 Protection degree IEC 60529 Electroal S029 Electroal S029 Climatic conditions IEC 60721 S000 °C (253 333 K) S000 °C (253 333 K) Damaging gas acc. to ISA-S71.04-1985, severity level G3 S000 °C (253 333 K) Protection degree IP20 IP20 Connection terminal connection ≤ 2.5 mm ² IP30 Mass approx. 100 g Ip30 °C (253 335 K) Ip30 °C (255 50 °C (255 °C	Influence of ambient temperature	0.01 % / K of output signal range
Directive conformity Instrument Electromagnetic compatibility Electromagnetic compatibility Directive 89/336/EC EN 61326 Standard conformity EN 50178 Insulation coordination EN 50178 Electrical isolation EN 50178 Electromagnetic compatibility NE 21 Protection degree IEC 60529 Climatic conditions IEC 60721 Ambient conditions -20 60 °C (253 333 K) Damaging gas acc. to ISA-S71.04-1985, severity level G3 Mechanical specifications IP20 Connection degree IP20 Connection terminal connection ≤ 2.5 mm ² Mass approx.100 g Dimensions 20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Electrical isolation	
Electromagnetic compatibility Insulation conformity Directive 89/336/EC EN 61326 Standard conformity EN 50178 Insulation coordination EN 50178 Electrical isolation EN 50178 Electromagnetic compatibility NE 21 Protection degree IEC 60529 Climatic conditions IEC 60721 Ambient conditions -20 60 °C (253 333 K) Damaging gas acc. to ISA-S71.04-1985, severity level G3 Protection degree IP20 Connection terminal connection ≤ 2.5 mm ² Mass approx.100 g Dimensions 20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Output/power supply, internal bus	basic insulation acc. to EN 50178, rated insulation voltage 300 V _{eff}
Directive 89/336/ECEN 61326Standard conformityEN 50178Insulation coordinationEN 50178Electrical isolationEN 50178Electromagnetic compatibilityNE 21Protection degreeIEC 60529Climatic conditionsIEC 60721Ambient conditions-20 60 °C (253 333 K)Damaging gasacc. to ISA-S71.04-1985, severity level G3Protection degreeIP20Connectionterminal connection ≤ 2.5 mm²Massapprox. 100 gDimensions20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Directive conformity	
Standard conformityInsulation coordinationInsulation coordinationEN 50178Electrical isolationEN 50178Electromagnetic compatibilityNE 21Protection degreeIEC 60529Climatic conditionsIEC 60721Ambient conditions-20 60 °C (253 333 K)Damaging gasacc. to ISA-S71.04-1985, severity level G3Mechanical specificationsIP20Protection degreeIP20Connectionterminal connection ≤ 2.5 mm²Massapprox. 100 gDimensions20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Electromagnetic compatibility	
Insulation coordinationEN 50178Electrical isolationEN 50178Electromagnetic compatibilityNE 21Protection degreeIEC 60529Climatic conditionsIEC 60721Ambient conditions-Ambient temperature-20 60 °C (253 333 K)Damaging gasacc. to ISA-S71.04-1985, severity level G3Mechanical specificationsIP20Protection degreeIP20Connectionerminal connection ≤ 2.5 mm²Massapprox.100 gDimensions20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Directive 89/336/EC	EN 61326
Electrical isolationEN 50178Electromagnetic compatibilityNE 21Protection degreeIEC 60529Climatic conditionsIEC 60721Ambient conditions-Ambient temperature-2060 °C (253333 K)Damaging gasacc. to ISA-S71.04-1985, severity level G3Mechanical specifications-Protection degreeIP20Connectionterminal connection ≤ 2.5 mm²Massapprox.100 gDimensions20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Standard conformity	
Electromagnetic compatibilityNE 21Protection degreeIEC 60529Climatic conditionsIEC 60721Ambient conditions-Ambient temperature-20 60 °C (253 333 K)Damaging gasacc. to ISA-S71.04-1985, severity level G3Mechanical specifications-Protection degreeIP20Connectionterminal connection ≤ 2.5 mm²Massapprox. 100 gDimensions20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Insulation coordination	EN 50178
Protection degreeIEC 60529Climatic conditionsIEC 60721Ambient conditions-Ambient conditions-20 60 °C (253 333 K)Damaging gasacc. to ISA-S71.04-1985, severity level G3Mechanical specifications-Protection degreeIP20Connectionterminal connection ≤ 2.5 mm²Massapprox. 100 gDimensions20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Electrical isolation	EN 50178
Climatic conditionsIEC 60721Ambient conditions-Ambient temperature-20 60 °C (253 333 K)Damaging gasacc. to ISA-S71.04-1985, severity level G3Mechanical specifications-Protection degreeIP20Connectionterminal connection ≤ 2.5 mm²Massapprox. 100 gDimensions20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Electromagnetic compatibility	NE 21
Ambient conditions-20 60 °C (253 333 K)Ambient temperature-20 60 °C (253 333 K)Damaging gasacc. to ISA-S71.04-1985, severity level G3Mechanical specifications	Protection degree	IEC 60529
Ambient temperature $-20 \dots 60 ^{\circ}C (253 \dots 333 K)$ Damaging gasacc. to ISA-S71.04-1985, severity level G3Mechanical specifications $-20 \dots 60 ^{\circ}C (253 \dots 333 K)$ Protection degreeIP20Connectionterminal connection $\le 2.5 mm^2$ Massapprox. 100 gDimensions $20 \times 107 \times 115 mm (0.8 \times 4.2 \times 4.5 in)$	Climatic conditions	IEC 60721
Damaging gasacc. to ISA-S71.04-1985, severity level G3Mechanical specificationsIP20Protection degreeIP20Connectionterminal connection ≤ 2.5 mm²Massapprox. 100 gDimensions20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Ambient conditions	
Mechanical specifications IP20 Protection degree IP20 Connection terminal connection ≤ 2.5 mm² Mass approx. 100 g Dimensions 20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Ambient temperature	-20 60 °C (253 333 K)
Protection degree IP20 Connection terminal connection ≤ 2.5 mm² Mass approx. 100 g Dimensions 20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Damaging gas	acc. to ISA-S71.04-1985, severity level G3
Connectionterminal connection $\leq 2.5 \text{ mm}^2$ Massapprox. 100 gDimensions $20 \times 107 \times 115 \text{ mm} (0.8 \times 4.2 \times 4.5 \text{ in})$	Mechanical specifications	
Mass approx. 100 g Dimensions 20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Protection degree	IP20
Dimensions 20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)	Connection	terminal connection \leq 2.5 mm ²
	Mass	approx. 100 g
Mounting DIN rail mounting	Dimensions	20 x 107 x 115 mm (0.8 x 4.2 x 4.5 in)
	Mounting	DIN rail mounting

Notes

Software functions

Adjustable by the **PACT***mare*[™] human machine interface:

- TAG numbers, 28 alphanumeric characters, can be programmed into device
- Commentary, may be saved in PC memory •
- Information on devices may be saved in PC memory
- Physical units are adjustable
- list see system description RPI •
- Lead monitoring selectable
- ٠ Separate detection and indication of lead breakage and lead short circuit •
 - Lower scale value and upper scale value of the measurement range
 - for the determination of the overflow and underflow range
 - for the configuration of the analogue monitor of the human machine interface
- · Overrange and underrange alarm
- Malfunction output status
 - user defined
 - min.
 - max.
 - maintenance of the last accepted measurement value
- · Simulation
 - of the input value
 - of the device diagnosis
 - of the process channel diagnosis

Release date 2004-11-05 13:26

Date of issue 2005-11-

Copyright Pepperl+Fuchs, Printed in Germany