Hall Effect Position Sensors

1 General description

	962 640 070	962 640 120	962 630 YY XXX
Supply	5 V, 6 mA max		5 V, 6 mA max per signal
Output signal	Analogue voltage		Analogue voltage
Sealing grade	IP 67 / IP 69 with mounted wire harness		IP 67 / IP 69 with mounted wire harness
Temperature range	- 40°C to + 120°C (1h at 130°C)		- 40°C to + 120°C (1h at 130°C)
Angle range (degrees)	70	120	30 or 60 or 90 or 120
Connector	AMP / MQS 6 Pins		AMP / MQS 6 Pins

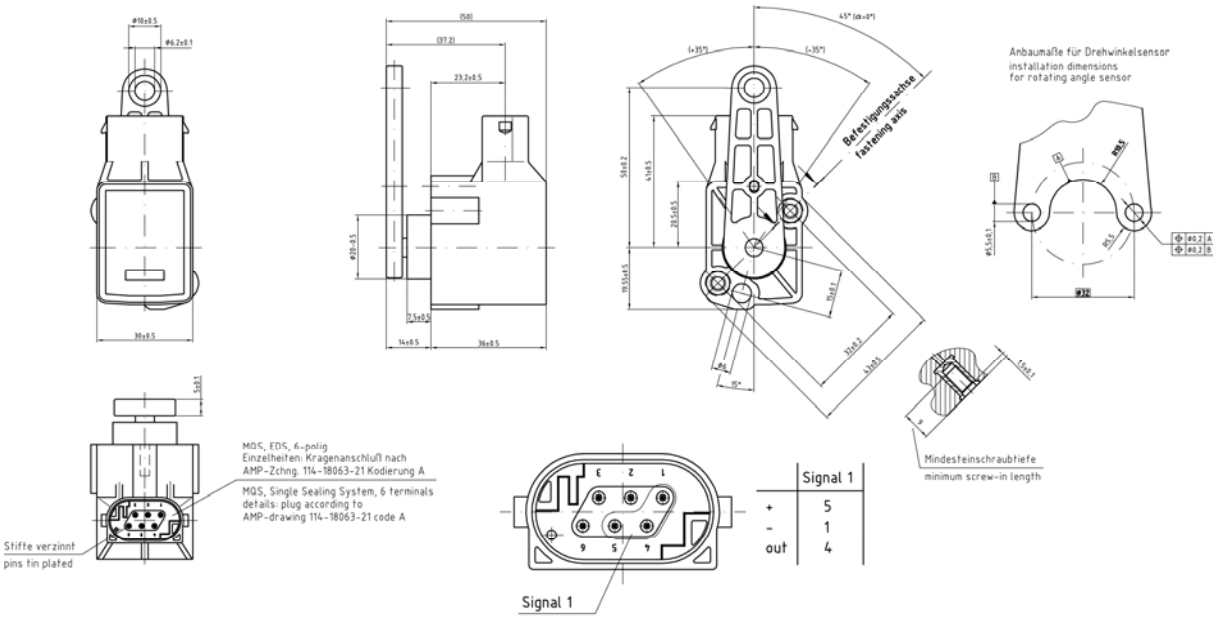
962 640 01 070 (1 signal, angle range 70°)	**962 630 01 XXX (1 signal)**
962 640 01 120 (1 signal, angle range 120°)	**962 630 02 XXX (2 signals identical)**
	962 630 03 XXX (2 signals increasing S1 =2 x S2)

2 Data sheet Hall Effect position sensor

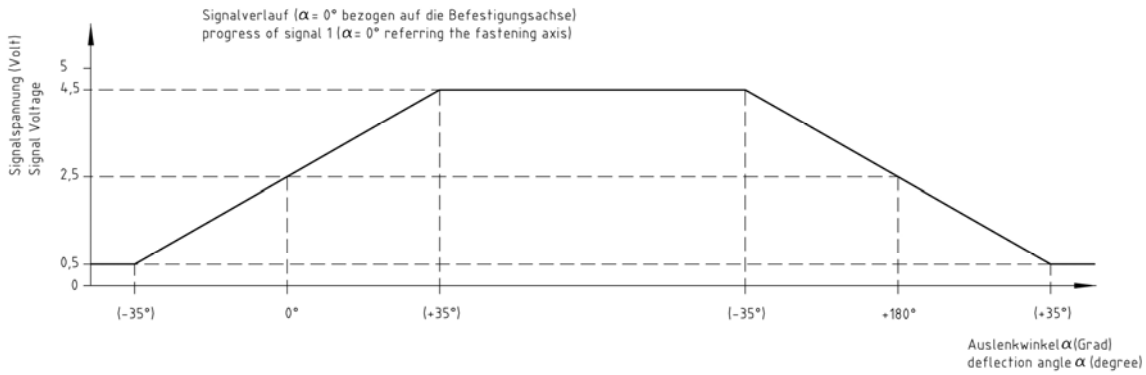
2.1 962 640 01 070 series

This sensor based on Hall Effect technology delivers one single signal 0.5 – 4.5V.
The angle range is 70°.
The Hall Effect sensors can be connected directly to the electronic control module of the vehicle.

2.1.1 Dimensions and specification



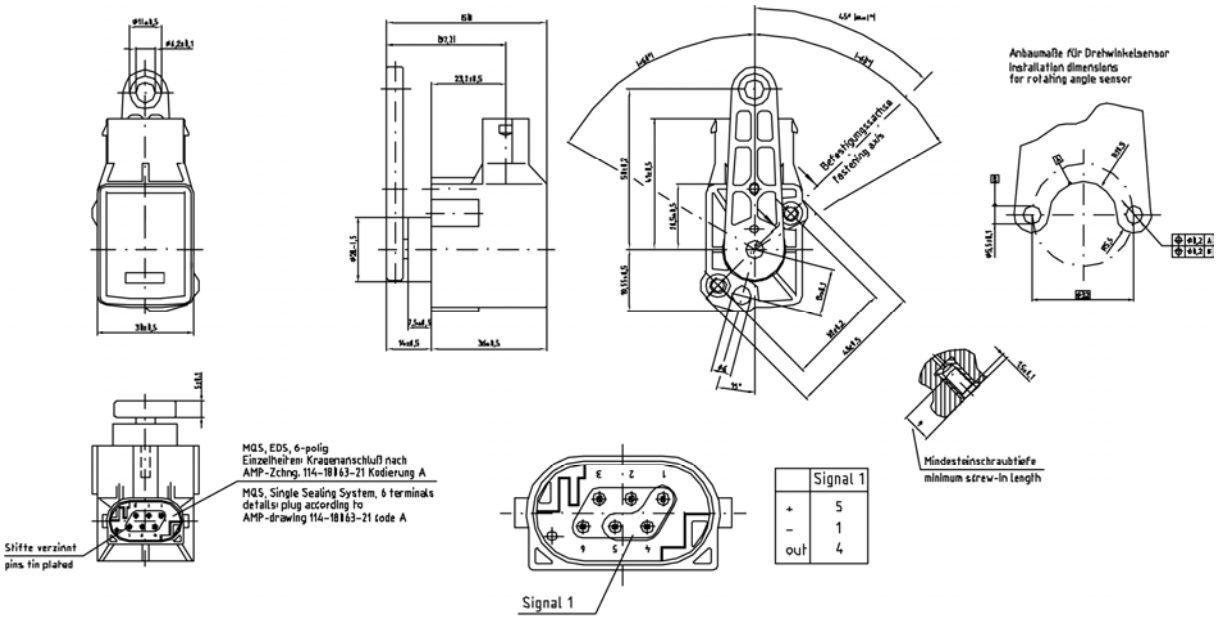
2.1.2 Signals



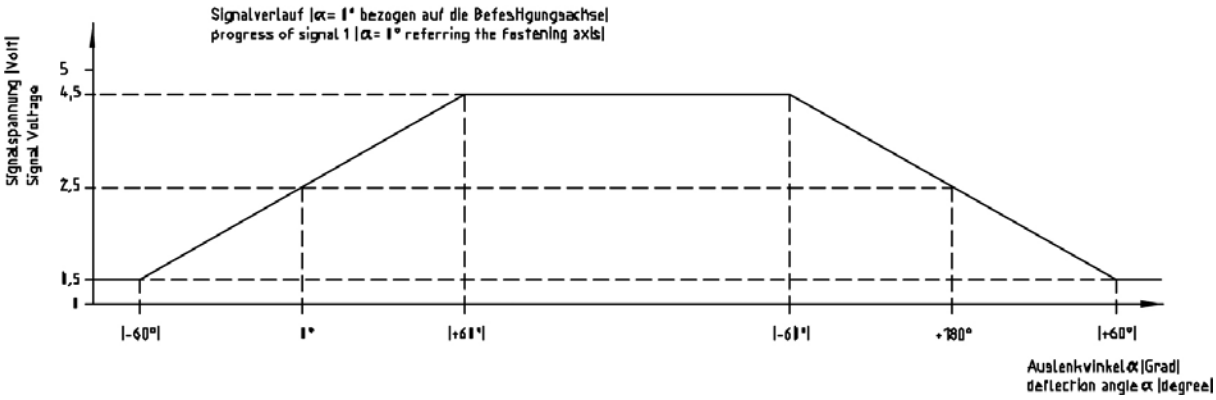
2.2 962 640 01 120 series

This sensor based on Hall Effect technology delivers one single signal 0.5 – 4.5V.
The angle range is 120°.
The Hall Effect sensors can be connected directly to the electronic control module of the vehicle.

2.2.1 Dimensions and specification



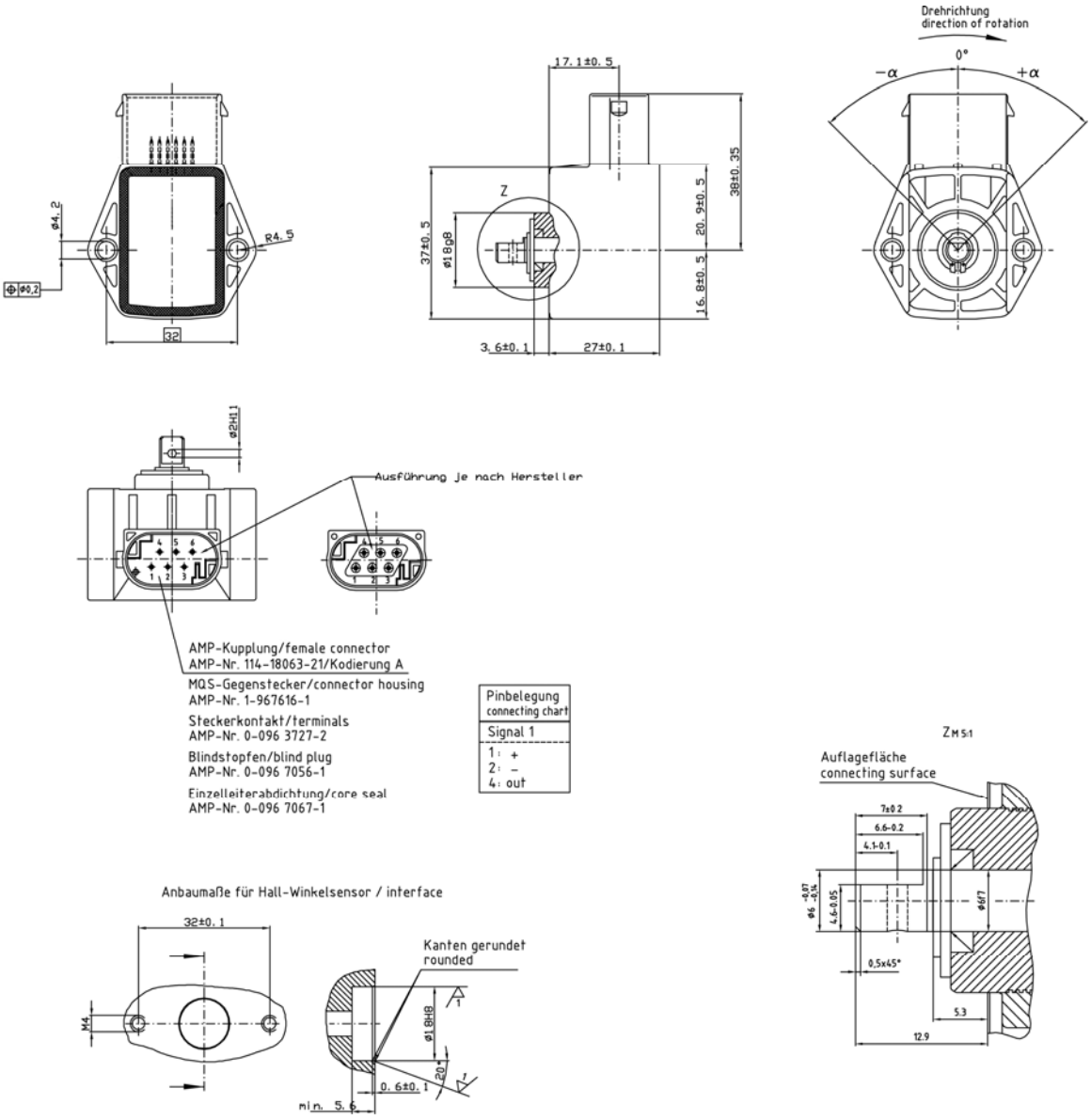
2.2.2 Signals



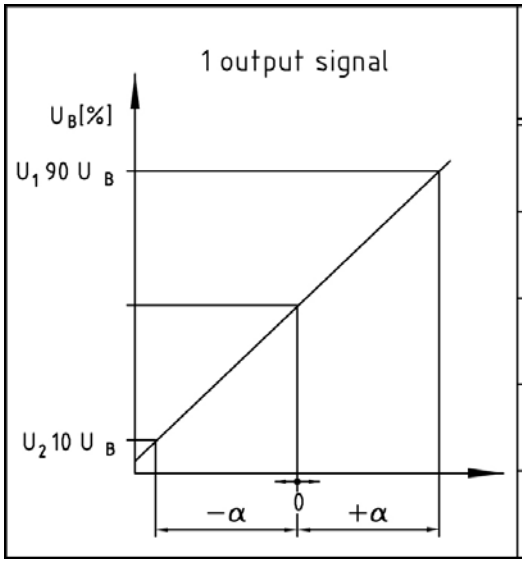
2.3 962 630 01 XXX Series

These sensors based on Hall Effect technology deliver one single signal 0.5 – 4.5V.
There are different angle range available : 30°, 60°, 90° and 120°.
The Hall Effect sensors can be connected directly to the electronic control module of the vehicle.

2.3.1 Dimensions and specification



2.3.2 Signal



electrical angle range α	part-no.:
± 15	962 630 01 030
± 30	962 630 01 060
± 45	962 630 01 090
± 60	962 630 01 120

2.3.3 Technical specification

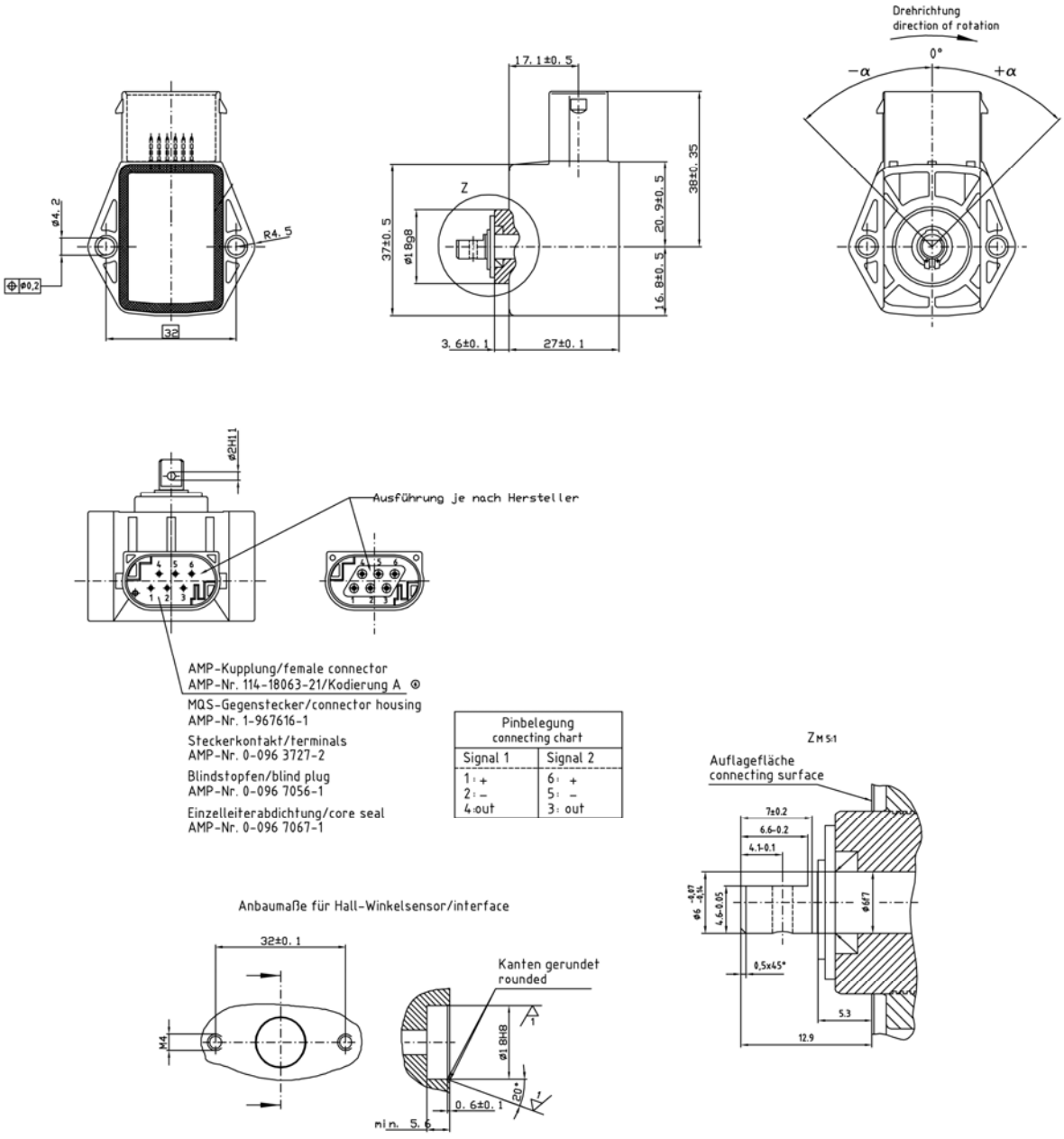
Technische Daten specification

962 630 01 030	962 630 01 060	962 630 01 090	962 630 01 120		Symbol	Englisch Parameter Deutsch		Conditions	MIN.	Typ.	MAX.	Unit
X	X	X	X		T_o T_s	Temp: Operating Storage	Temp: Betrieb Lagerung		-40 -40		+120 +150	°C °C
X	X	X	X		I_o	Output Current	Ausgangsstrom			0,5	1	mA
X	X	X	X		I_{osc}	Short-Circuit Output Current	Ausgangskurz-schlußstrom	t_K<60s	7	10	11	mA
X	X	X	X		R_s	Resolution	Auflösung			<0,01		deg
X	X	X	X		R_P	Reproducibility	Reproduzierbarkeit			0,01		deg
X	X	X	X		R_{Hy}	Hysteresis	Hysterese			±0,05		%
X	X	X	X		F_L	Relative Linearity	Relative Linearität	±45°		±0,5	±1	%
X	X	X	X		U_{off}	Offset Voltage	Offsetspannung	α = 0 deg			±50	mV
X	X	X	X		$U_{off,D}$	Offset Voltage Drift	Offsetsp. Drift				±64	ppm/K
X	X	X	X		U_B	Supply Voltage	Nennversorgungs-spannung		4,75	5	5,25	V
X	X	X	X		I_B	Quiescent Supply Current	Ruhestrom-aufnahme	α = 0 deg U_B = 5V	3,5	4,5	5,5	mA
X	X	X	X		CL	Load Capacity	Lastkapazität				22	nF
X	X	X	X		U_{REV}	Reverse Polarity	Verpolung	t=10s t=∞			18 10	V
X	X	X	X		U_{max}	Over Voltage	Maximalspannung	t=∞			36	V
X	X	X	X		U_1	Tolerance Start Position	Toleranz Startstellung			±50		mV
X	X	X	X		U	Tolerance Final Position	Toleranz Endstellung			±50		mV

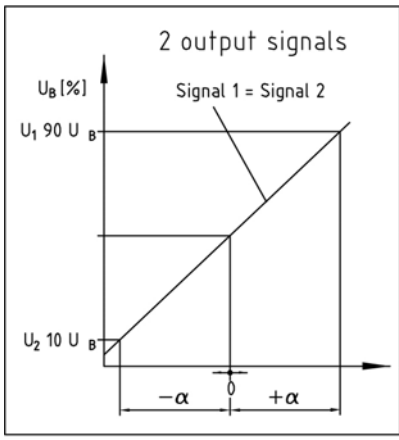
2.4 962 630 02 XXX and 962 630 03 XXX Series

These sensors based on Hall Effect technology deliver two signals. These two signals can be identical (962 630 02 XXX) or one signal equal to the double of the second (962 630 03 XXX) Signal(1) = 2 * Signal(2). There are different angle range available : 30°, 60°, 90° and 120°.
The Hall Effect sensors can be connected directly to the electronic control module of the vehicle.

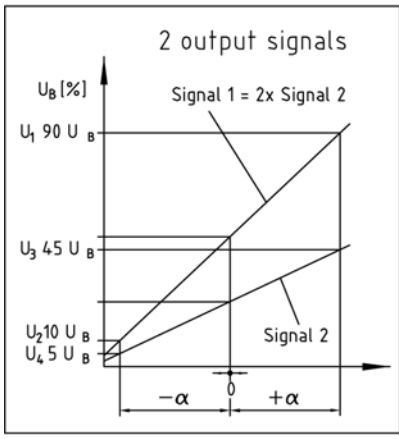
2.4.1 Dimensions and specification



2.4.2 Signals



electrical angle range α	part-no.:
± 15	962 630 02 030
± 30	962 630 02 060
± 45	962 630 02 090
± 60	962 630 02 120



electrical angle range α	part-no:
± 15	962 630 03 030
± 30	962 630 03 060
± 45	962 630 03 090
± 60	962 630 03 120

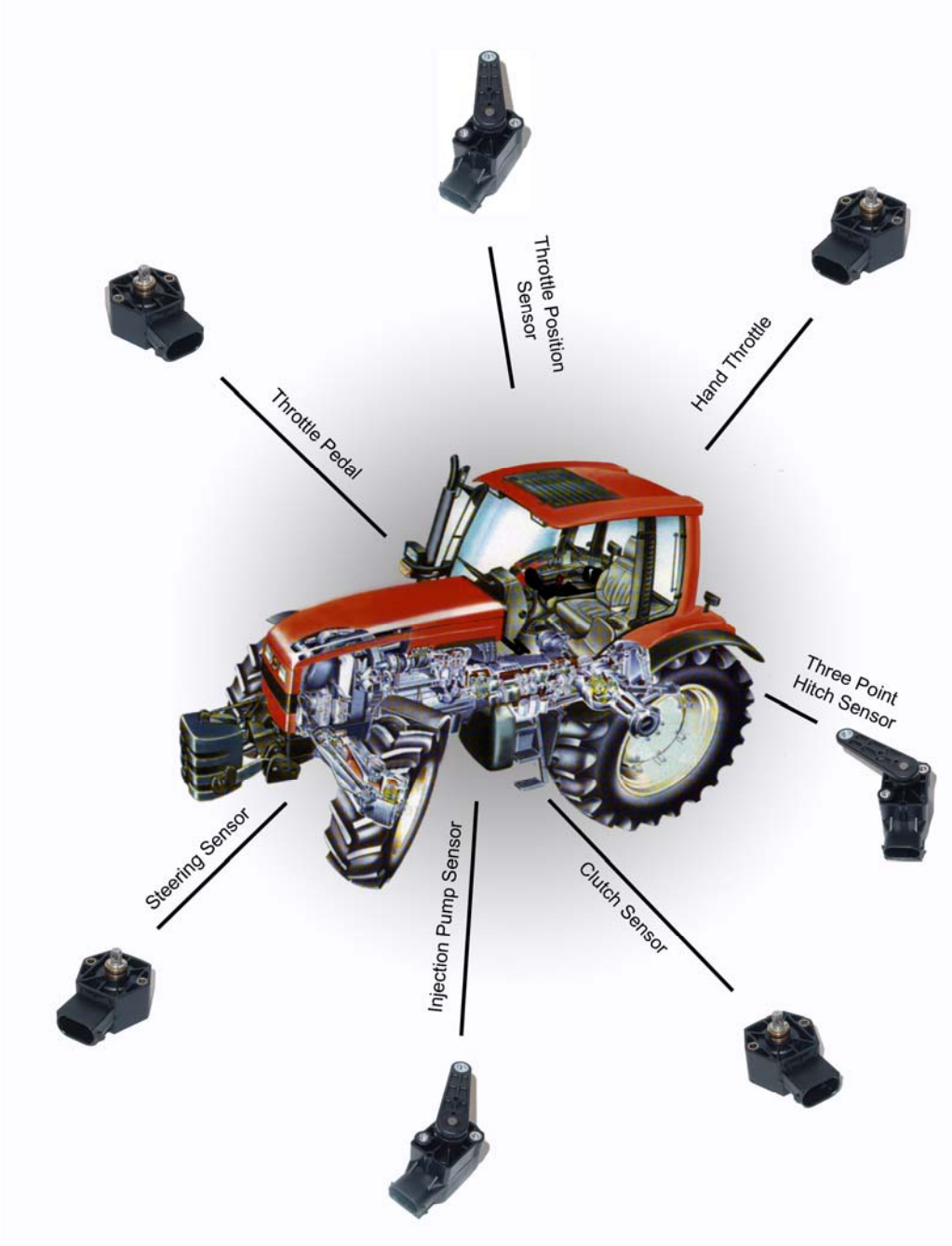
2.4.3 Technical specification

Technische Daten specification

962 630 02 030	962 630 02 060	962 630 02 090	962 630 02 120	962 630 03 030	962 630 03 060	962 630 03 090	962 630 03 120	Symbol	Englisch Parameter Deutsch		Conditions	MIN.	Typ.	MAX.	Unit
X	X	X	X	X	X	X	X	T_o T_s	Temp: Operating Storage	Temp: Betrieb Lagerung		-40 -40		+120 +150	°C °C
X	X	X	X	X	X	X	X	I_o	Output Current	Ausgangsstrom			0,5	1	mA
X	X	X	X	X	X	X	X	I_{OSC}	Short-Circuit Output Current ✳	Ausgangskurz-schlußstrom ✳	t≤60s	7	10	11	mA
X	X	X	X	X	X	X	X	R_S	Resolution	Auflösung			<0,01		deg
X	X	X	X	X	X	X	X	R_P	Reproducibility	Reproduzierbarkeit			0,01		deg
X	X	X	X	X	X	X	X	R_{Hy}	Hysteresis	Hysterese			±0,05		%
X	X	X	X	X	X	X	X	F_L	Relative Linearity	Relative Linearität	±45°		±0,5	±1	%
X	X	X	X	X	X	X	X	U_{Off}	Offset Voltage	Offsetspannung	α = 0 deg			±50	mV
X	X	X	X	X	X	X	X	$U_{Off,D}$	Offset Voltage Drift	Offsetsp. Drift				±64	ppm/K
X	X	X	X	X	X	X	X	U_B	Supply Voltage	Nennversorgungs-spannung		4,75	5	5,25	V
X	X	X	X	X	X	X	X	I_B	Quiescent Supply Current ✳	Ruhestrom-aufnahme ✳	α = 0 deg U_B = 5V	3,5	4,5	5,5	mA
X	X	X	X	X	X	X	X	CL	Load Capacity	Lastkapazität				22	nF
X	X	X	X	X	X	X	X	U_{REV}	Reverse Polarity	Verpolung	t=10s t=∞			18 10	V
X	X	X	X	X	X	X	X	U_{max}	Over Voltage	Maximalspannung	t=∞			36	V
X	X	X	X	X	X	X	X	U_1	Tolerance Start Position	Toleranz Startstellung			±50		mV
X	X	X	X	X	X	X	X	U	Tolerance Final Position	Toleranz Endstellung			±50		mV

✳ per channel / pro Kanal

3 Typical Applications:



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