

FGP HARNESS-CONNECTOR ACCORDING TO
1/02001/87 TAB. 91337/46 BLACK COLOR CODE V
FGP Kabelbaum-Anschluss nach
1/02001/87 Tab. 91337/46 Schwarz Kodierung V

HARNESS-CONNECTOR ACCORDING RB-DRAWINGS:
A 928 000 158
A 928 000 398
A 928 000 452
A 928 000 351
TERMINALS IN EACH CASE TIN PLATED
Kabelbaum-Anschluss nach RB-Zeichnungen:
A 928 000 158
A 928 000 398
A 928 000 452
A 928 000 351
Kontakte jeweils verzinkt

CONNECTOR ACCORDING TO DRAWING D 928 002 93A, CODE V
Steckanschluss nach Zeichnung D 928 002 93A, Kodierung V
DEVIATION WILL BE DOCUMENTED WITH INITIAL
SAMPLE INSPECTION REPORT (ISIR)
Abweichung wird bei Erstbemusterung (EMPB)
dokumentiert

BOSCH-SYMBOL
LASER LABELING
BOSCH-Bildmarke
mit Laser erstellt

COUNTRY OF ORIGIN
LASER LABELING
Herkunftsland
mit Laser erstellt

DIRECTION OF AIR FLOW
Durchflussrichtung

DATE AND TIME OF MANUFACTURING
LASER LABELING
Fertigungsdatum und -uhrzeit
mit Laser erstellt

IDENT-NUMBER
LASER LABELING
Identnummer
mit Laser erstellt

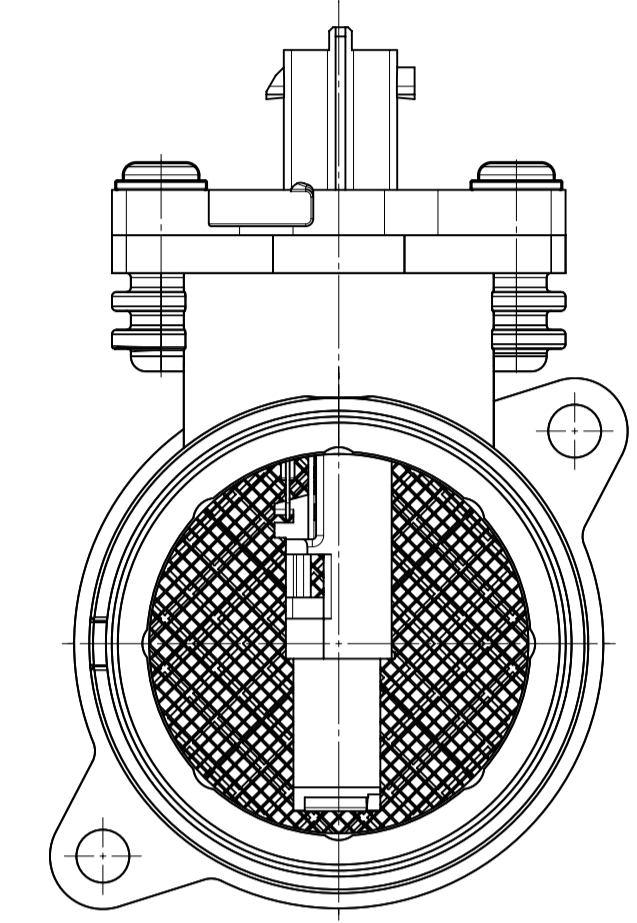
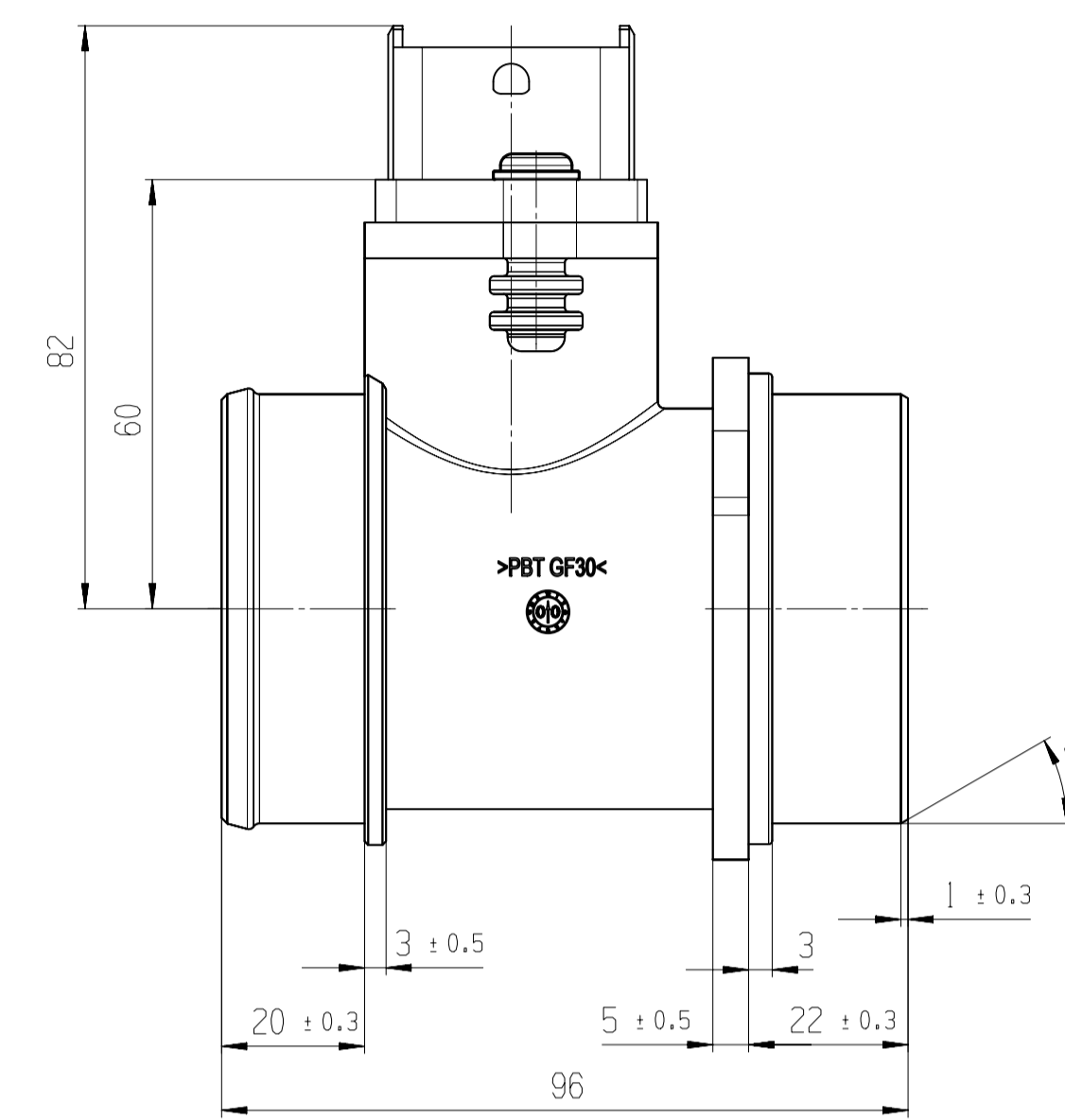
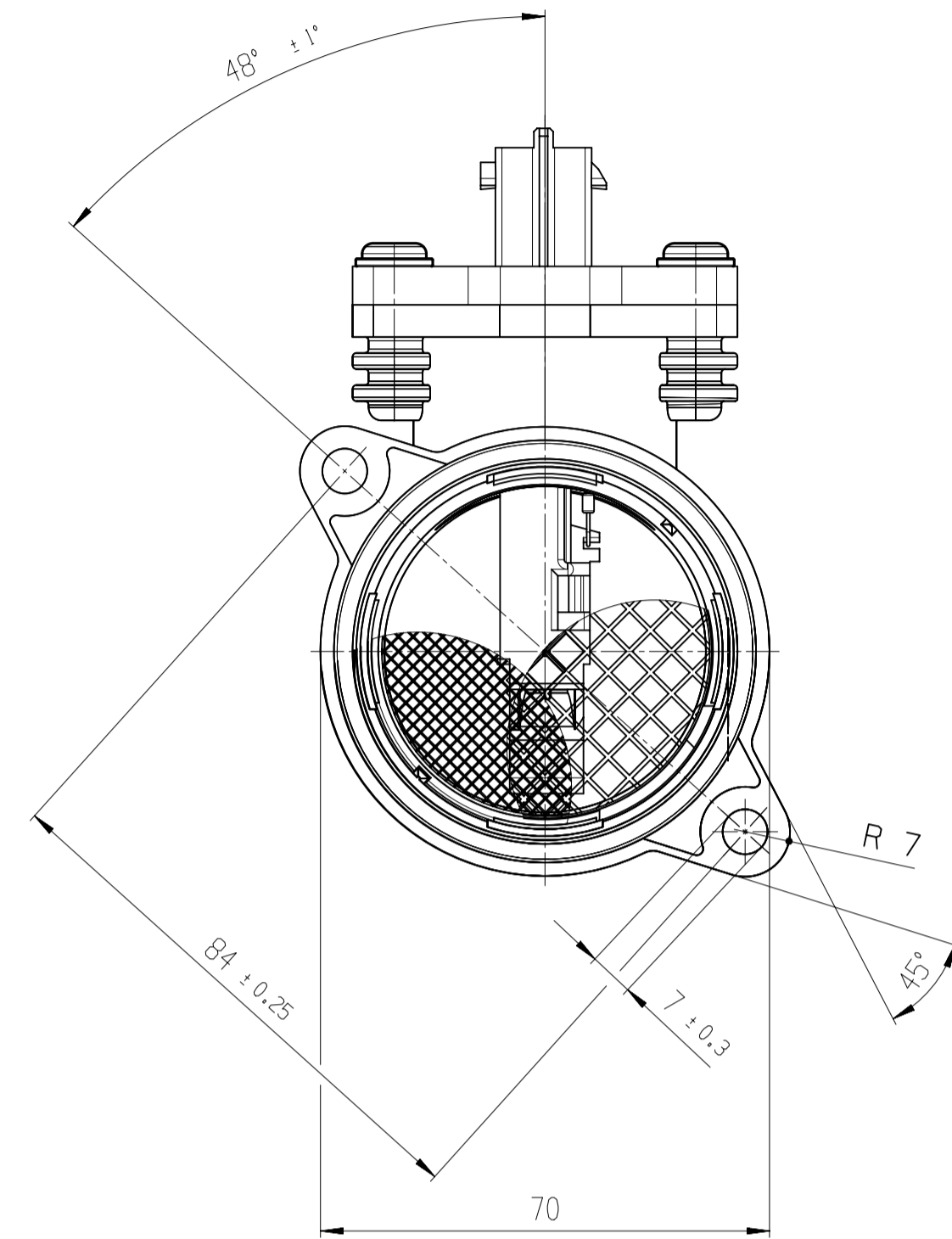
PRODUCTION LINE
LASER LABELING
Fertigungseinrichtung
mit Laser erstellt

AS-DELIVERED CONDITION:
COVERED WITH PROTECTIVE CAP
Lieferzustand:
mit Schutzkappe abgedeckt

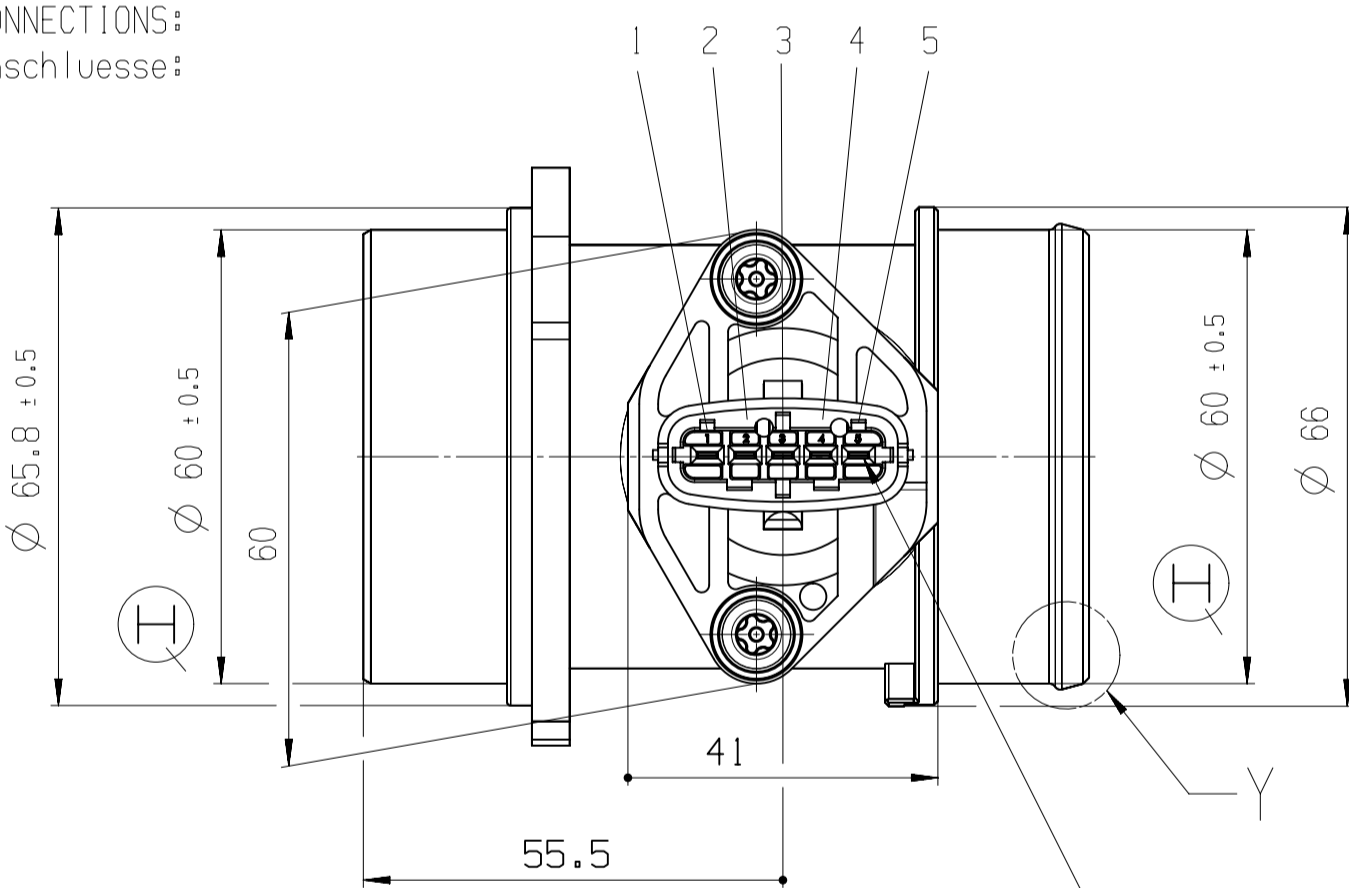
BOSCH PART NUMBER
LASER LABELING
Bosch Sachnummer
mit Laser erstellt

MANUFACTURING LOCATION CODE
LASER LABELING
Werkzeugzahl
mit Laser erstellt

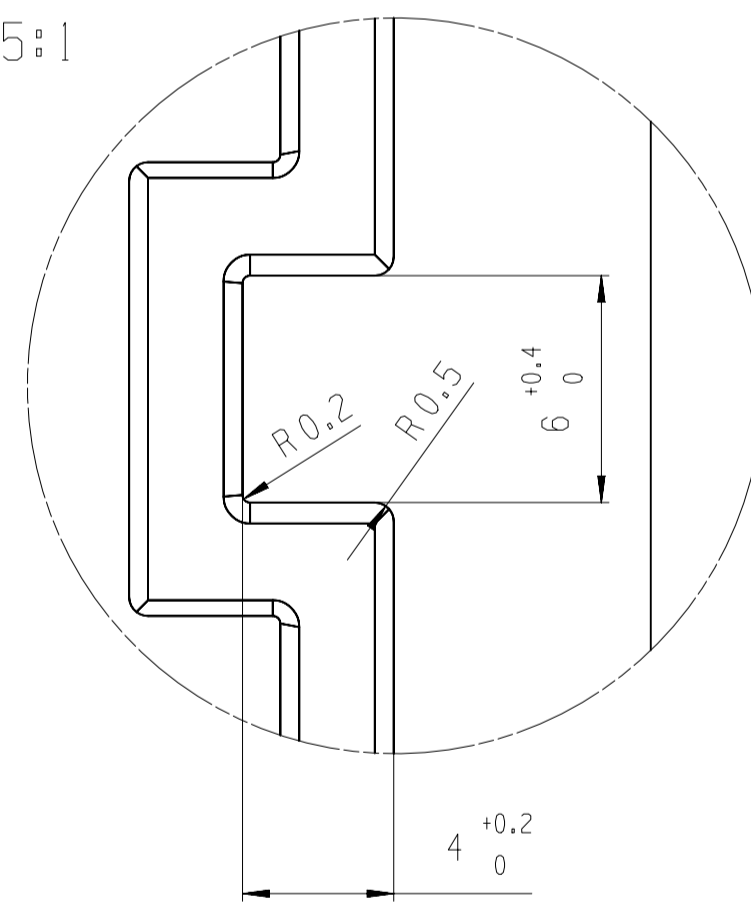
INDICATION MARK (O2)
OF CONFORMITY
LASER LABELING
Kenzeichnung
Konformitätszeichen
mit Laser erstellt



CONNECTIONS:
Anschlüsse:

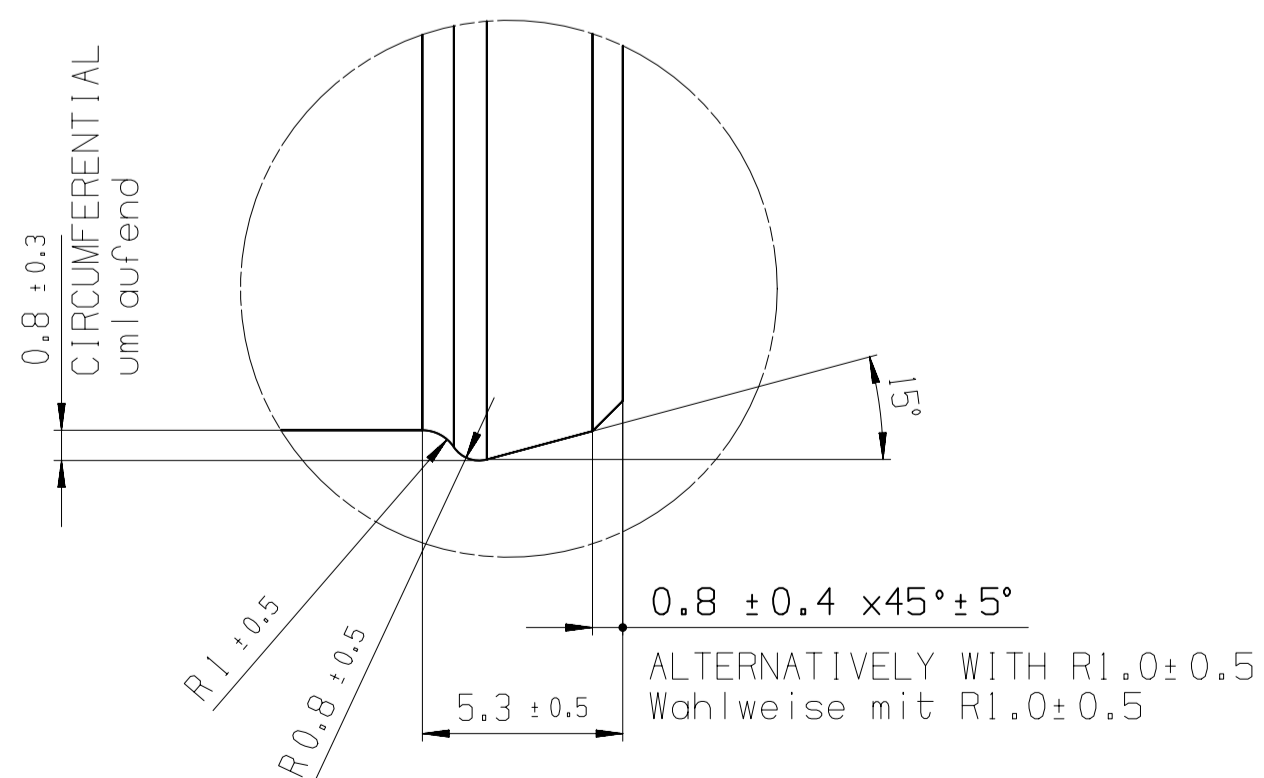


DETAIL W
Einzelheit W
SCALE: 5:1
M 5:1



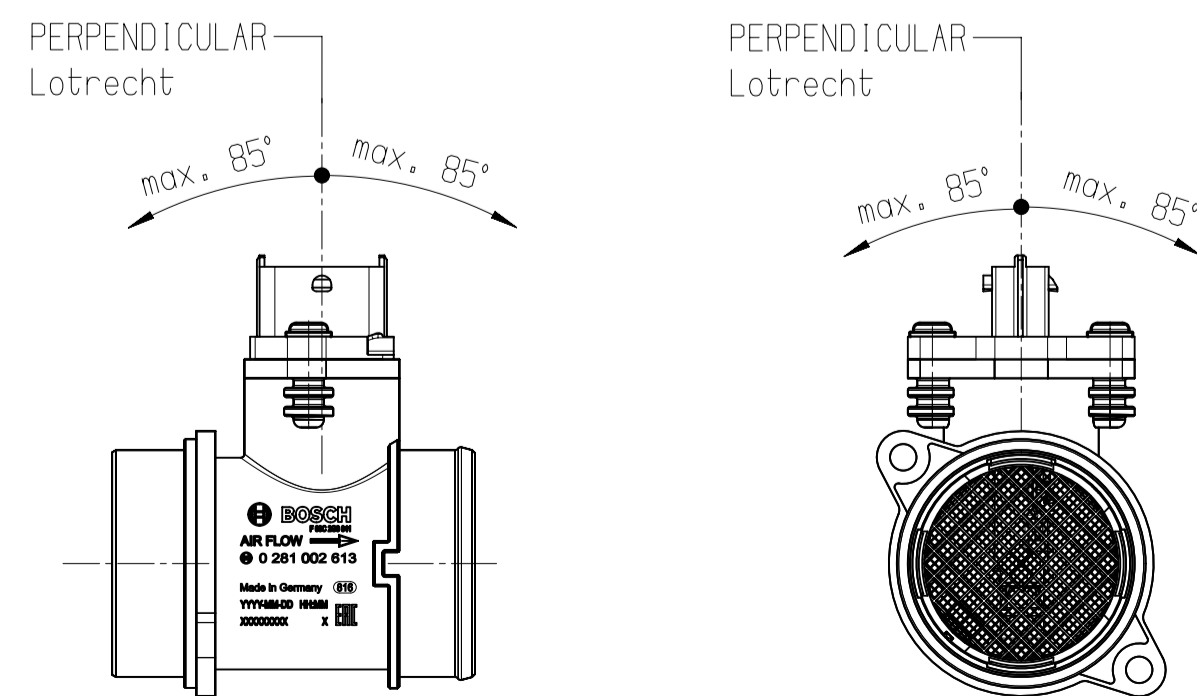
TERMINALS: TIN PLATED
BASIC MATERIAL: CuSn6
Steckkontaktflaechen verzinkt
Grundmaterial: CuSn6

Y 5:1

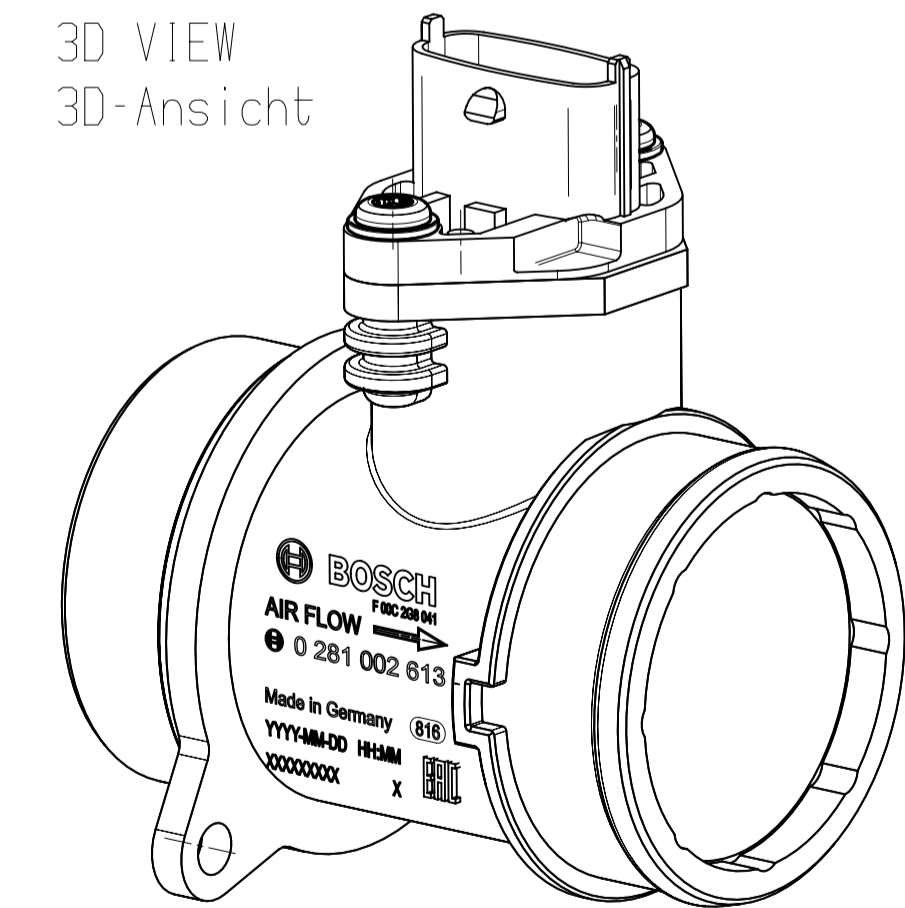


SCALE 1:2
M 1:2

PERMISSIBLE INSTALLATION
Zulaessige Einbaulage



3D VIEW
3D-Ansicht

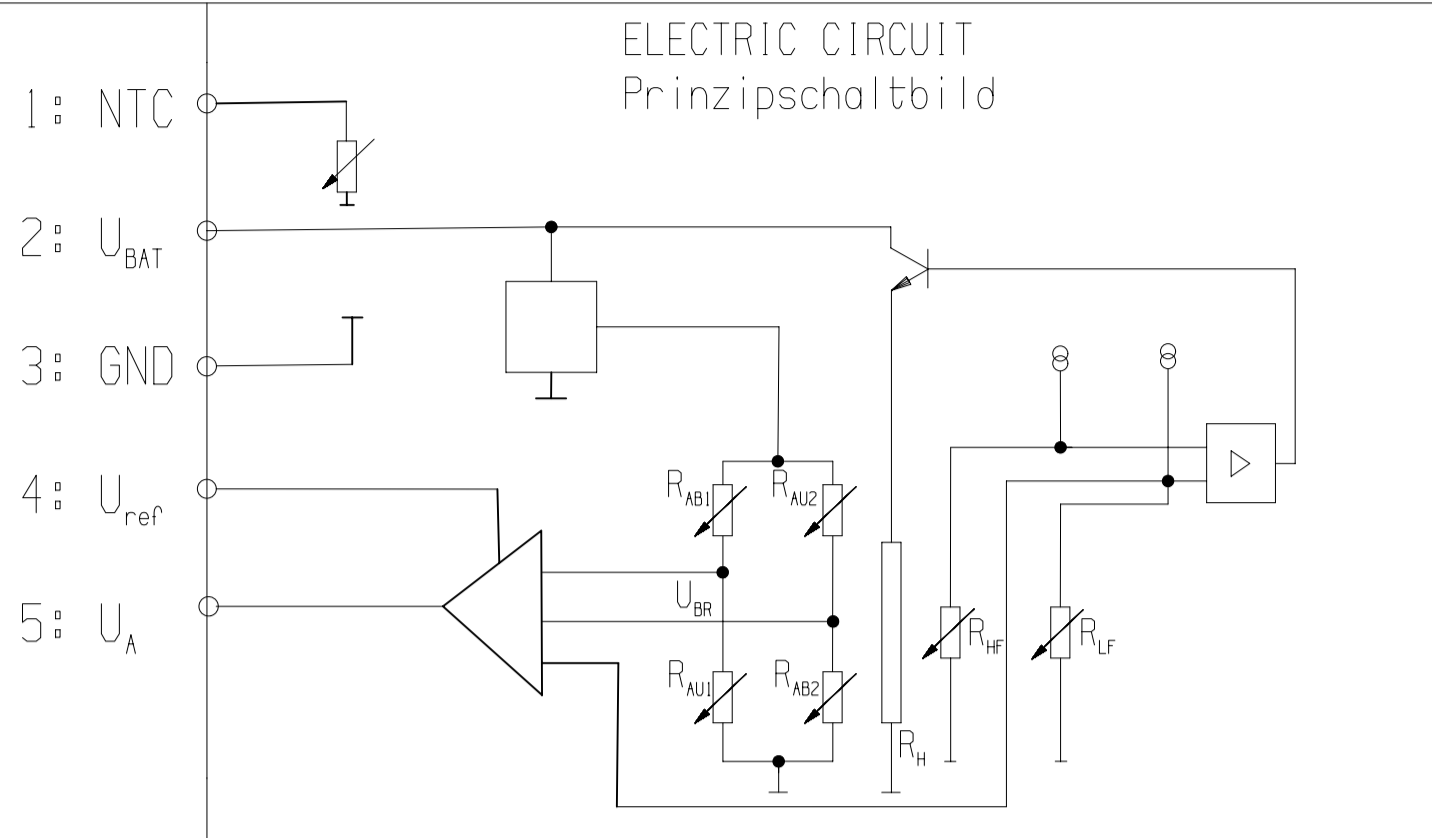


General tolerances for all dimensions in mm unless otherwise specified

Doc. No.	Rev.	Part No.	Part Name	Plant	Proj. No.	Proj. Name	Scale	Drawn	Checked	Released	Responsible	Info.
02	F029026994	20191023	vtg2fe	epp2fe	jun2sh	209	P5-SD/GP					
01	F028277075	20150330	BuW	tfps2fe	kou2fe	2130	G5-S1/ENS					
Ind.	Change/Mod.	YYYYMMDD	Drawn/Gez.	Checked/Gepr.	Released/Freige.	BWN	Resp. dept./Verantw. Abt.	Abb. info./Zus. Info.				
Lang./Spr.	Syst.	Night./Gew.	UG	AIR-MASS METER LUF-TMAMSENMESSER								
ent/de				Scale/Anst. ab								
				1:1								
				BOSCH								
				OFFER DRAWING ANGEBOTSZEICHN.								
				Doc. type								
				AgZ								
				0 280 A04 744-009								
				Repl. for								
				Repl. by								
				001								
				02								
				A1								

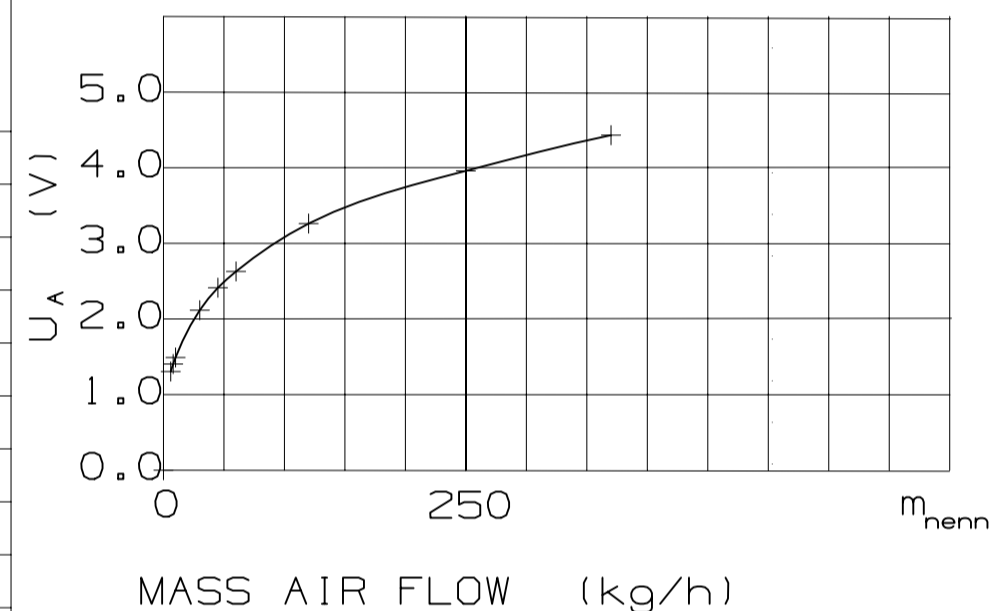
- CONNECTIONS:
- 1: NTC
 - 2: POWER SUPPLY
 - 3: POWER GROUND
 - 4: REFERENCE VOLTAGE
 - 5: MASS AIR-OUTPUT

- Anschlüsse:
- 1: NTC
 - 2: Versorgungsspannung
 - 3: Masse
 - 4: Referenz-Spannung
 - 5: Luftmassen-Signal



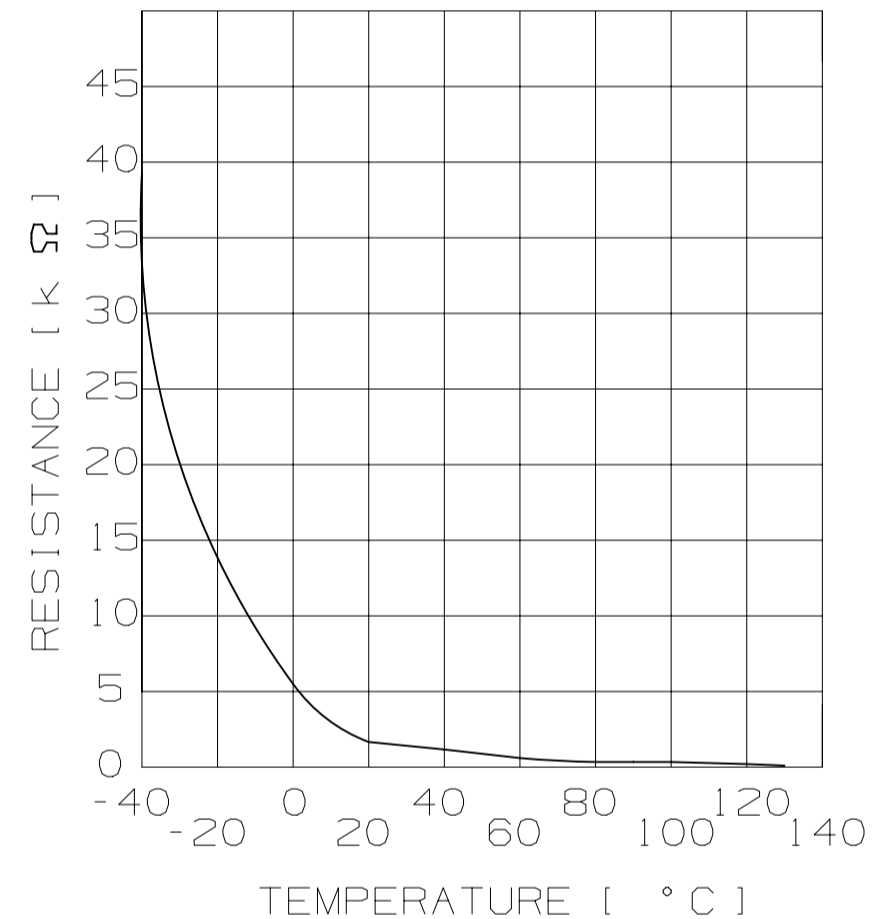
CHARACTERISTIC HFM7-R5
MASS AIR FLOW CHARACTERISTIC

MASS AIR FLOW POINTS \dot{m} [kg/h]	U [V]	[±%]	U ein[V]	U aus[V]
6	1.3047	4	1.2919	1.3173
8	1.4044	4	1.3895	1.4189
10	1.4904	2.5	1.4801	1.5006
30	2.1159	2.5	2.0984	2.1329
45	2.4131	2	2.3976	2.4285
60	2.6449	2	2.6283	2.6612
120	3.2616	2	3.2421	3.2807
250	4.0015	4	3.9584	4.0431
370	4.4304	4	4.3845	4.4748



CHARACTERISTIC NTC
NOMINAL RESISTANCE AT 25°C = 2.00k Ω ±5%

TEMPERATURE [°C]	RESISTANCE [k Ω]	
	min	max
- 40	35.140	43.76
- 30	20.770	25.310
- 20	12.660	15.120
- 10	7.943	9.307
0	5.119	5.892
+ 10	3.384	3.829
+ 20	2.290	2.551
+ 30	1.573	1.752
+ 40	1.096	1.238
+ 50	0.779	0.892
+ 60	0.565	0.654
+ 70	0.416	0.488
+ 80	0.312	0.370
+ 90	0.238	0.285
+ 100	0.184	0.222
+ 110	0.144	0.176
+ 120	0.114	0.141
+ 130	0.091	0.114



KEY CHARACTERISTICS

DESCRIPTION	TEST DESCRIPTION/FREQUENCY	IDENTIFICATION
LABEL EXISTENCE	INITIAL SAMPLE REPORT INCOMING INSPECTION	H
CONNECTOR VERSION	CHECK OF CONNECTOR PINS (100%) POKA YOKE	H
CHARACTERISTIC CURVE OF HFM7-R5 AT 3 POINTS	MEASUREMENT AT AIR MASS FLOW TEST BENCH (100%)	H
CHARACTERISTIC OF NTC	PLAUSIBILITY CHECK OF NTC SIGNAL (100%) CERTIFICATE OF SUPPLIER	H
INLET AND OUTLET DIAMETER OF CYLINDER HOUSING	INITIAL SAMPLE REPORT INCOMING INSPECTION AT THE TEST BENCHES THE CYLINDER HOUSING CAN ONLY BE USED WITH A SPECIAL TUBE. IF THE CYLINDER HOUSING HAS THE WRONG SIZE IT WON'T FIT TO THE TUBES.	H

REMARKS

VALID BOSCH - DOCUMENTS
 TECHNICAL CUSTOMER INFORMATION 0 280 K02 581
 APPLICATION NOTE HFM5 0 281 YEO 063
 RECOMMENDATIONS FOR HANDLING 0 280 K02 203
 RB WARRANTY WILL COVER THE FUNCTION OF THE CONNECTOR SYSTEM ONLY IN CASE OF COMBINATION WITH HARNESS CONNECTOR SYSTEM PARTS ACC. TO RB-DRAWINGS MENTIONED IN THIS OFFER DRAWING.
 FOR HARNESS CONNECTOR NOT BOSCH ORIGINAL FUNCTION AND RELIABILITY IS WITHIN CUSTOMERS RESPONSIBILITY.

OPERATING VOLTAGE:

U batt 8V TO 17V
 NOMINAL VOLTAGE 14V

MAXIMUM CURRENT INPUT
 I max < 0.1A AT U batt 8-17V

TEMPERATURE RANGE DURING OPERATION

T ambient = -40°C TO 120°C PERMANENT OPERATION
 T ambient = +120°C TO 130°C SHORT-TERM OPERATION
 SHORT TERM OPERATION NOT MORE THAN 3 MIN AND IN TOTAL NOT MORE THAN 2% OF SERVICE LIFE

MEASUREMENT OF HFM7-R5 CHARACTERISTIC

STANDARD CONDITIONS:

POWER SUPPLY-VOLTAGE: 14V±0.1V
 REFERENCE VOLTAGE : 5V±2mV
 INTAKE TEMPERATURE : T intake = 20°C±1°C
 AIR PRESSURE : 990 mbar±50 mbar

general tolerances for Allgemeintoleranzen fuer			
lin. dim./L-masse	radii/Radien	angles/Winkel	
±.mm	±.mm	±.°	

02	F029026994	20191023	vtg2fe	epp2fe	jun2sh	209	P5-SD/GP	
01	F028277075	20150330	BuW	tfs2fe	kou2fe	2130	G5-S1/ENS	
Ind.	Change/Änd.	YYYYMMDD	Drawn/Gez.	Checked/Gepr.	Released./Freige.	BWN	Resp. dept./Verantw. Abt.	Ass. info./Zus. Info.
Lang./Spr.	Syst.	Night./Gew.	UG	AIR-MASS METER		LUF TMASSENMESSER		Sheet/Bl.
ent/de				Scale/Au.stab		1:1		2 / 2
Scale/Au.stab			1:1			BOSCH		
Doc. type			AGZ			0 280 A04 744-009		DP/ID
Repl. for						001		02
Repl. by								

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