

Data sheet

# DF RTS



Technical data

Type	-	DF1 RTS	DF2 RTS	DF3 RTS	DF4 RTS	DF5 RTS
Accuracy class	%	≤±0.03				
Rated torque (Md <sub>n</sub> )	Nm	200 500	500 1,000	1,000 2,000 3,000	4,000 5,000	5,000 10,000
Torque measuring system						
Technology	-	Stationary				
Rated torque (Md <sub>n</sub> ) #1	Nm	200 500	500 1,000	1,000 2,000 3,000	4,000 5,000	5,000 10,000
Outputs	-	Not amplified				
Mechanical dimensions #2						
Outer diameter of rotor #3	mm	107	128	158	187	230
Lengths (Rotor, without centering)	mm	45	48	49	50	60
Pitch circle diameter #4	mm	84.0	101.5	130.0	155.5	196.0
Linearity						
Non-linearity incl. Hysteresis, stationary	%	≤±0.03				
Rel. Standard deviation of the reproducibility						
related to Md <sub>n</sub>	%	≤±0.03				
Temperature influence per 10K in the nominal temperature range						
on nominal value	%	≤±0.03				
on zero signal	%	≤±0.03				
Nominal output signal						
Nominal value	mV/V	0.80 1.00	1.00	1.00	1.00	1.00
Measuring system						
Excitation voltage	DC/AC V	<20.0				
Bridge resistance nominal	Ohm	1,480				
Group delay times (of all compatible TCUs)						
Frequency output	µs	900 / 200				
Voltage output	µs	900 / 200				
CAN bus	µs	N/A				

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Temperature ranges						
Nominal temperature range <i>(Rotor)</i>	°C	0...80				
Operating temperature range <i>(Rotor)</i> #5	°C	-20...85				
Storage temperature range <i>(Rotor)</i>	°C	-30...85				
Load limits #6						
Limit torque, related to Md <sub>n</sub>	%	275 175	300	300	300	300
Breaking torque approx., related to Md <sub>n</sub>	%	550 350	600	600	600	600
Axial limit force	kN	5.40 7.40	19.00 26.00	35.00 46.00 57.00	83.00 89.00	82.00 104.00
Lateral limit force	N	1,890.00 2,880.00	4,000.00 7,000.00	7,000.00 11,000.0 0 15,000.0 0	20,000.0 0 23,000.0 0	20,000.0 0 32,000.0 0
Bending limit torque	Nm	42.00 65.00	152.00 245.00	221.00 348.00 487.00	841.00 986.00	1,057.00 1,689.00
Mechanical values						
Torsional stiffness	kNm/rad	156 269	376 647	865 1,461 1,988	3,317 3,894	5,047 8,296
Inertia of rotor	kgm²	0.0017	0.0033 0.0034	0.0084 0.0085 0.0085	0.0188 0.0189	0.0486 0.0492
Weight approx.						
Rotor #7	kg	1.2	1.6 1.7	2.8 2.9 2.9	4.4 4.5	7.5 7.8

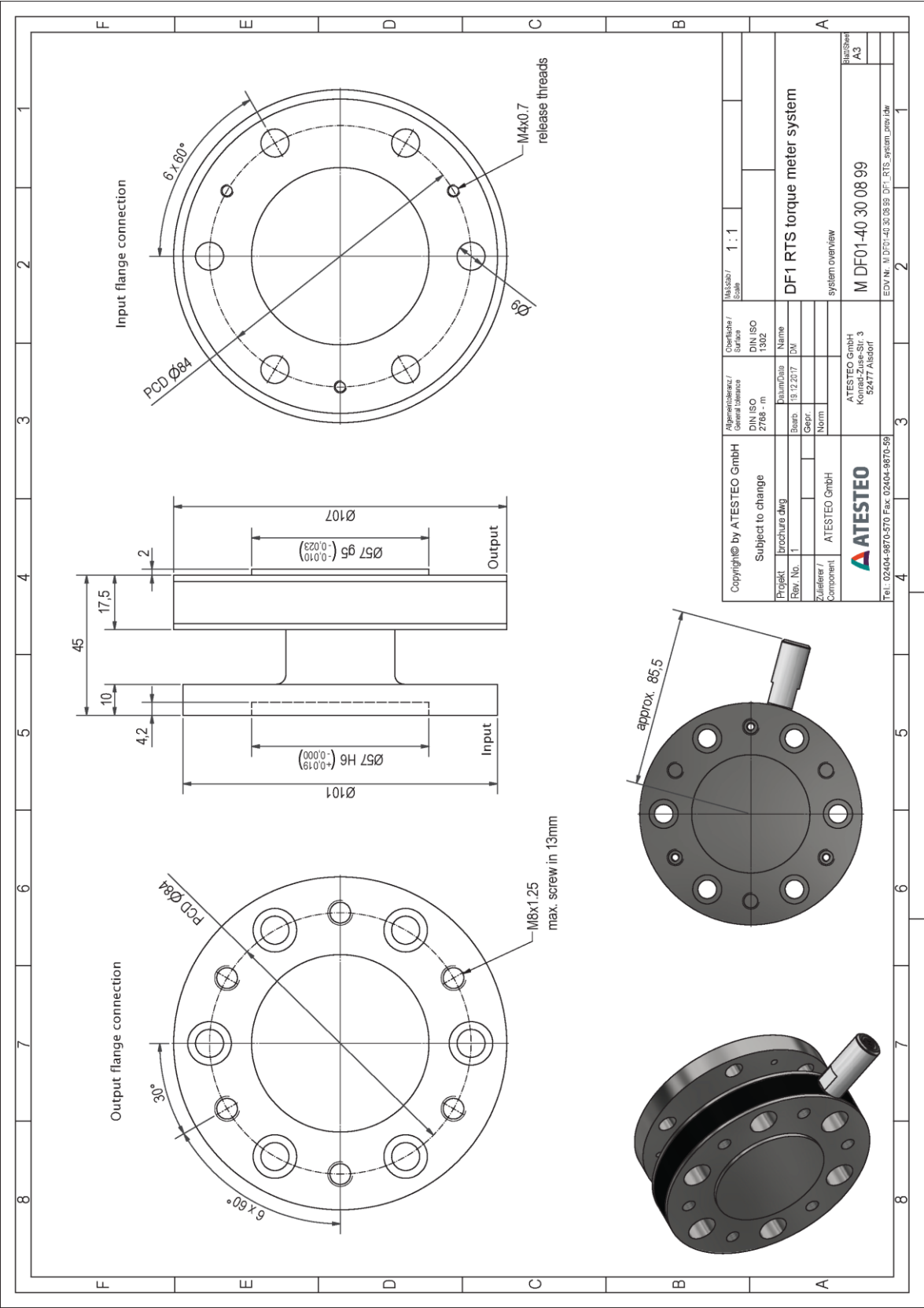
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Miscellaneous						
Pitch circle screw information	-	6 * M8 (12.9)	8 * M10 (12.9)	8 * M12 (12.9)	8 * M14 (12.9)	8 * M16 (12.9)
Measuring range (related to Md <sub>n</sub> )	%	110				
Compatible evaluation units (TCU)	-	SAFO2.3D / SAFO2.3				
Sales information						
Article number	-	1000291 5	1000291 7	1000312 9	1000408 8	1000408 7

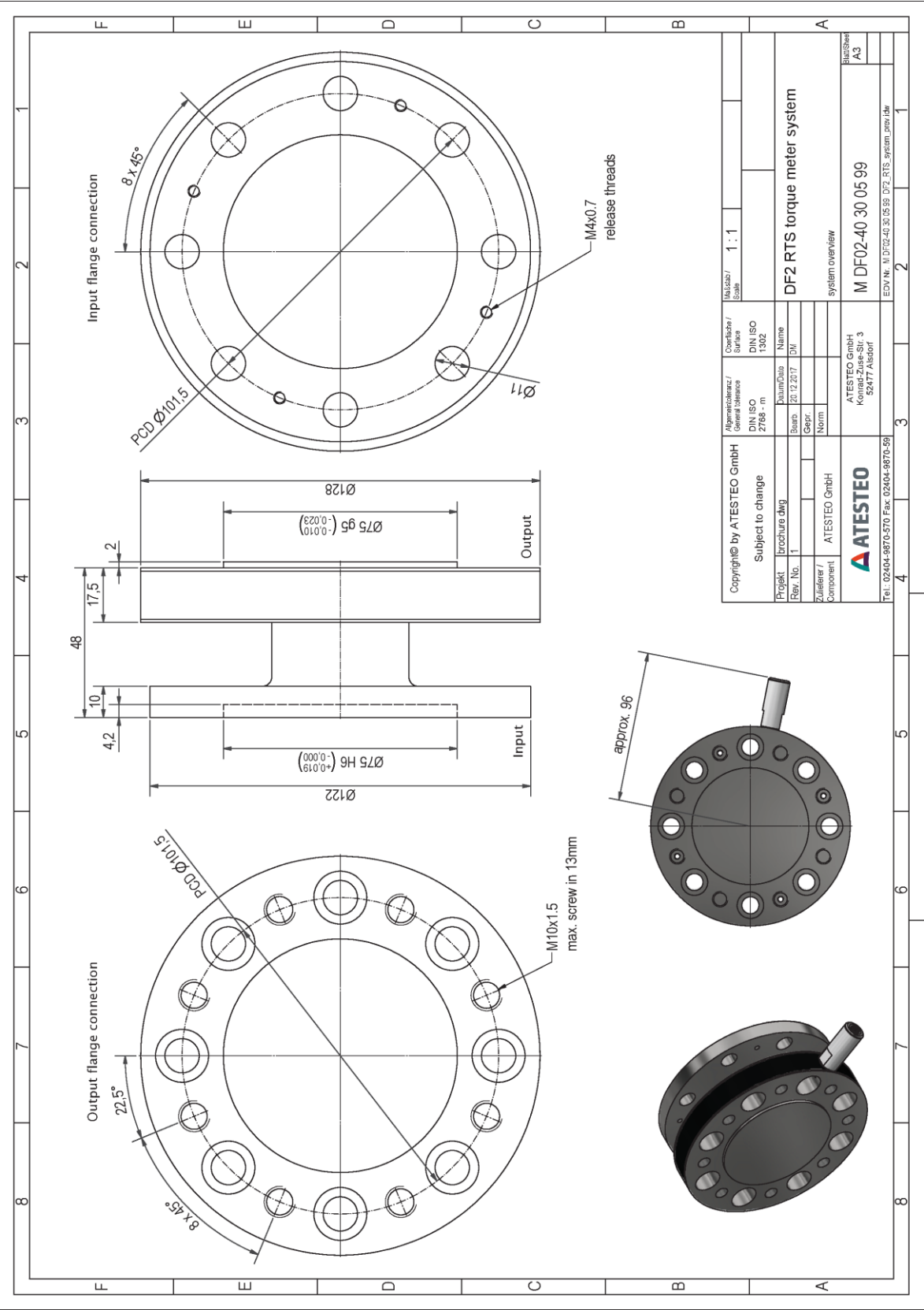
Remarks and information

Link no.	Topic	Remark
#1	Nominal torque	Based on customer requests, the measurement systems can optionally be optimized for not listed nominal torque values (intermediate ranges possible).
#2	Dimensions	Mechanical dimensions are without engagement. Use the drawings and step files as master for your constructions.
#3	Details in the drawings	Value can vary by optional components. Please find details to this attribute in the integrated drawings.
#4	Pitch circle diameter	The pitch circle diameter is identically at input and output side for most systems. More information is given in the drawings of a product.
#5	Temperature range (rotor)	No condensation allowed.
#6	Load limits	The given values are only valid if no other load occurs at the same time. If the loads in sum are 100%, the max. error will be 0.3% of the nominal torque. Limit and break torque are lower if other loads are applied (such as lateral forces).
#7	Weights	Weights are related to components without options like speed detection system. Please contact us for exact weight information of options.

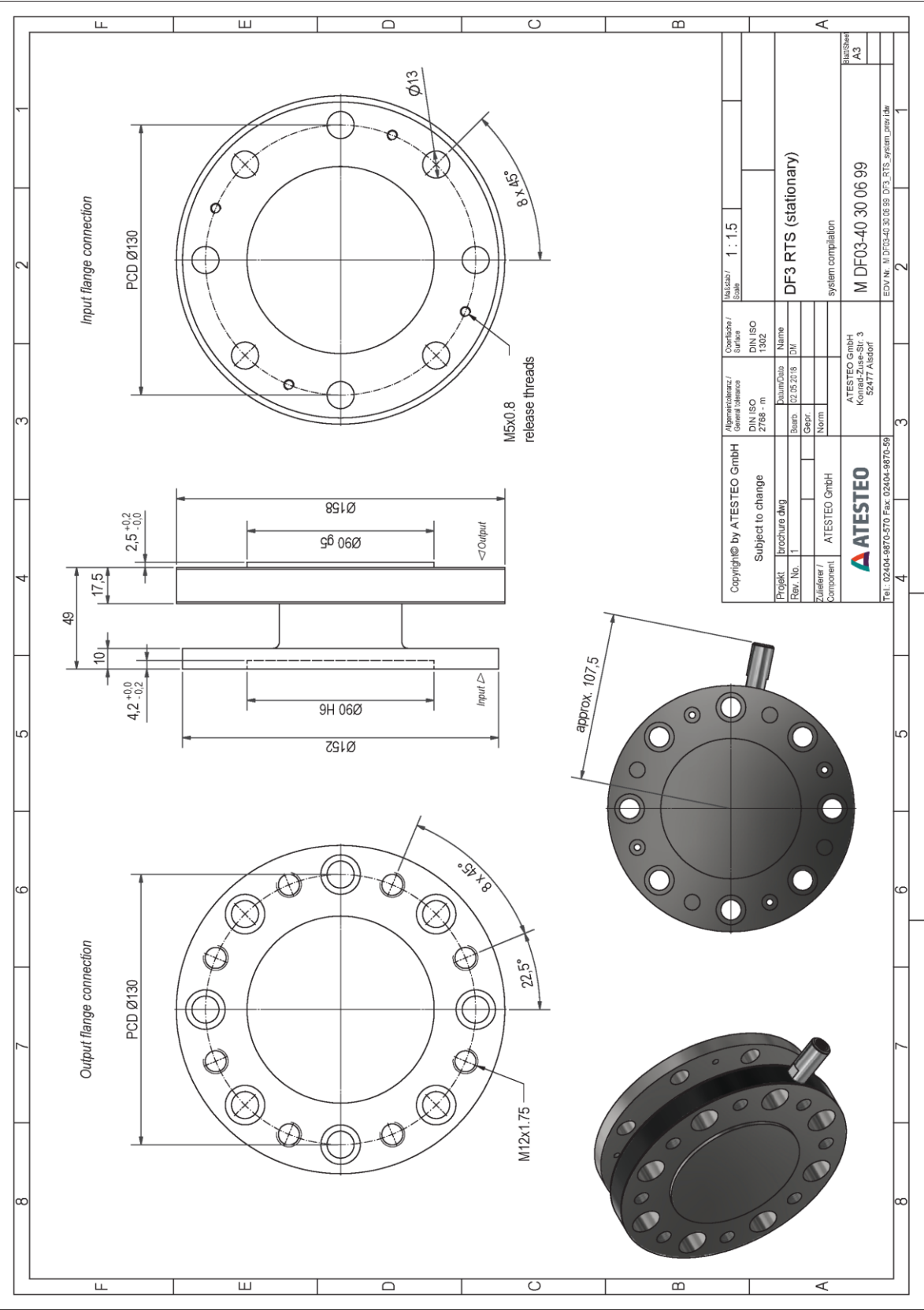
Drawing



Drawing

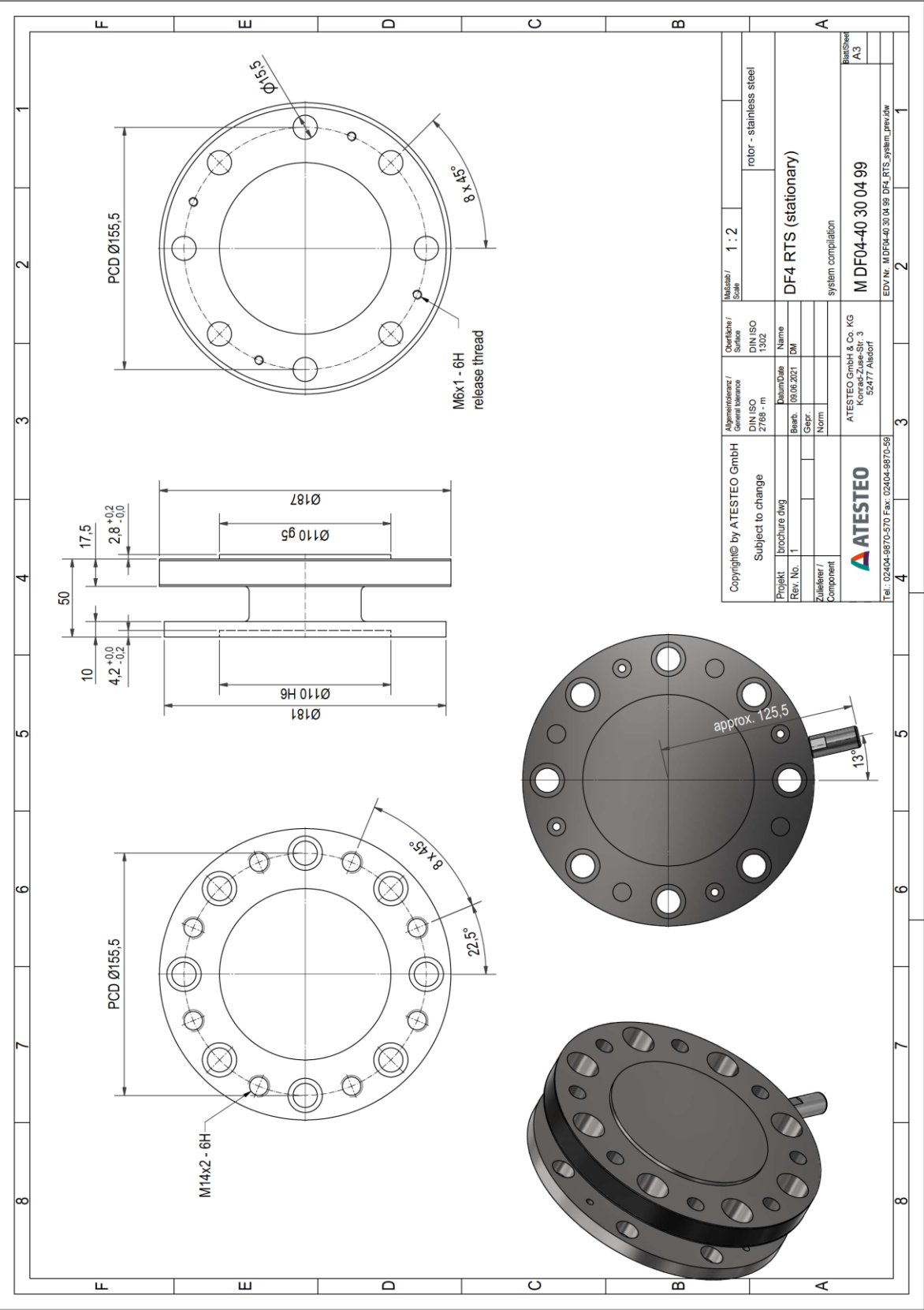


Drawing

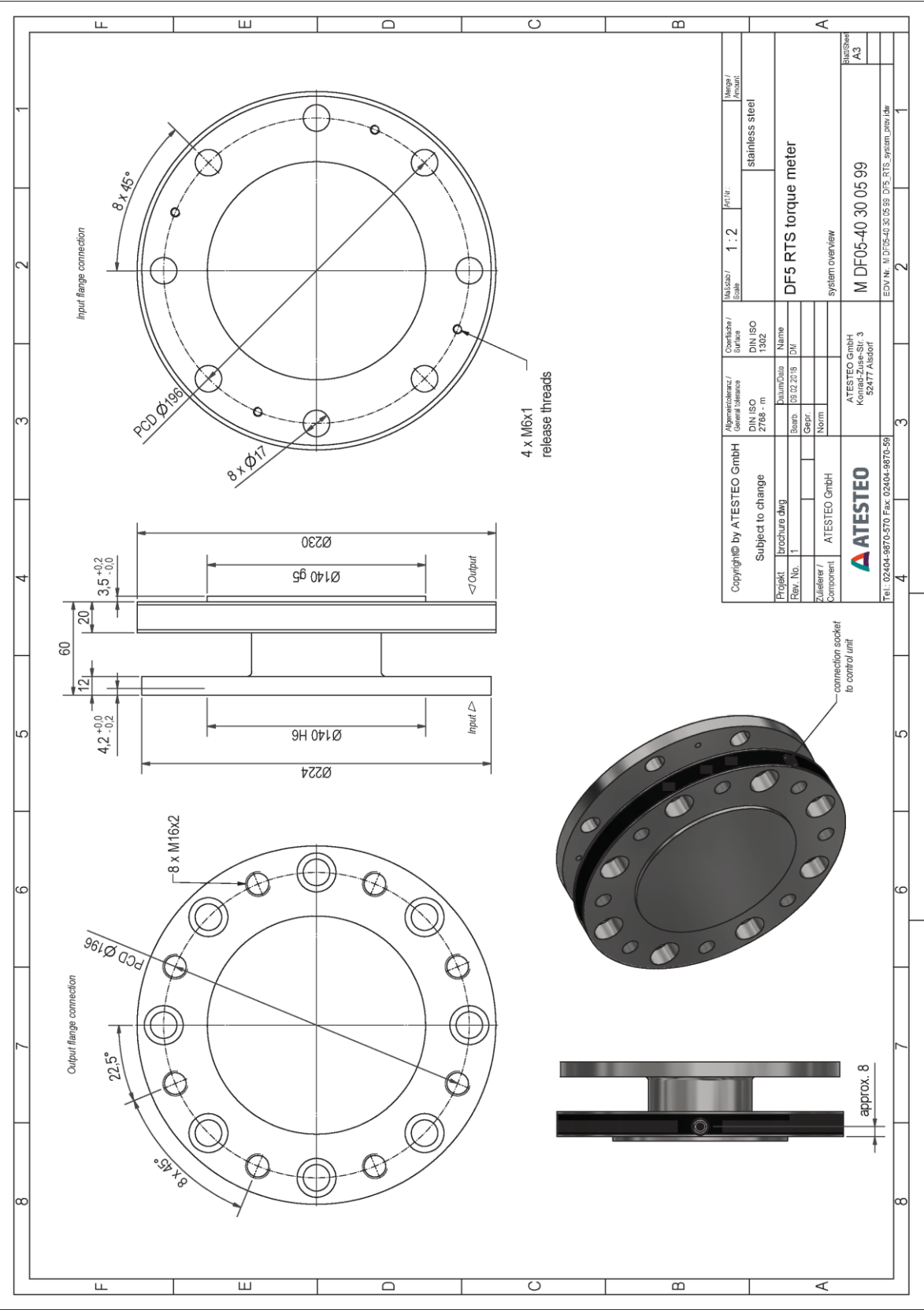




Drawing



Drawing



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ATESTEO GmbH & Co. KG  
Konrad-Zuse-Straße 3  
52477 Alsdorf  
Germany

Phone	+49 (0) 2404 9870 - 0
Email	<a href="mailto:info@atesteo.com">info@atesteo.com</a>

<https://www.atesteo.com/en/>