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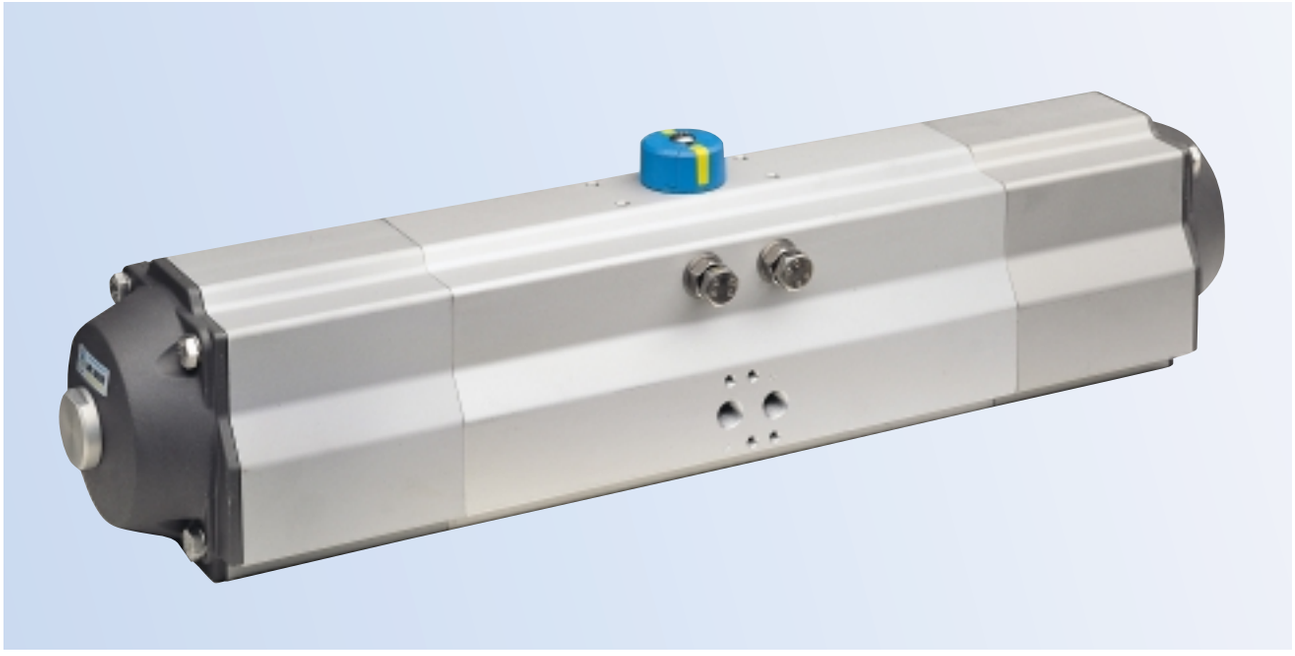
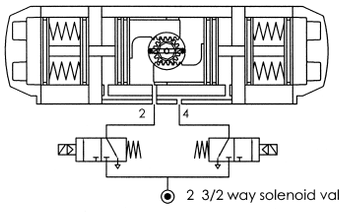
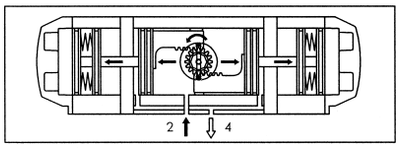
180° SPRING RETURN ACTUATOR 4thG WITH 90° FAIL SAFETY POSITION

The 180° spring return actuator 4thGeneration with 90° fail safety position is used for 0°-90°-180° operations where in case of air failure the actuator has to return to the 90° position. At both ends of the actuator a spring set is mounted and the compression on both sides of the springs is caused by the rotation from the 90° position. The fail-safe operation is achieved by the extension of the compressed springs that bring the actuator from 0° or 180° position to 90° position.
The external travel stop is available as a standard in fully open position (180°) and in fully close position (0°), and it is easily and precisely adjustable of +/- 4° in both directions.

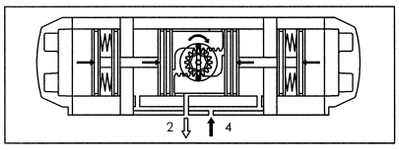




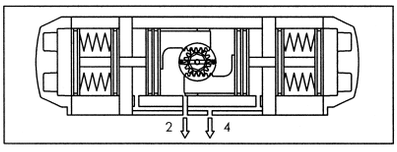
In order to control the operation of AIR TORQUE 180° with 90° Fail Safety Position a system of solenoid valves controlling a sequence of air supplies to the actuator is required as described besides: The actuator may be controlled by two 3/2 way solenoid valve or by one 5/3 way solenoid valve.



From 90° to 180°
When compressed air is supplied at the Port 2, air forces the pistons apart and compresses the springs from their inside ends to the end side. A counterclockwise rotation is obtained.



From 90° to 0°
When compressed air is supplied at the Port 4, air forces the pistons together and compresses the springs from their outside ends to the center. A clockwise rotation is obtained.



Air fail operations
From 180° position: on loss of air pressure (air or electric failure) at Port 2 allows the springs to force the pistons together (untill 90° position) with the exhaust air exiting at Port 2, a clockwise rotation is achieved.

From 0° position: on loss of air pressure (air or electric failure) at Port 4 allows the springs to force the pistons toward the actuator (until 90° position) with the exhaust air exiting at Port 4, a counterclockwise rotation is achieved.

When ordering 180° Spring Return Actuator with 90° Fail Safety Position, add **"FM"**
(Ex. **FM** AT 308 S11 A F07 17) to the standard 180° rotation Spring Return actuator code.

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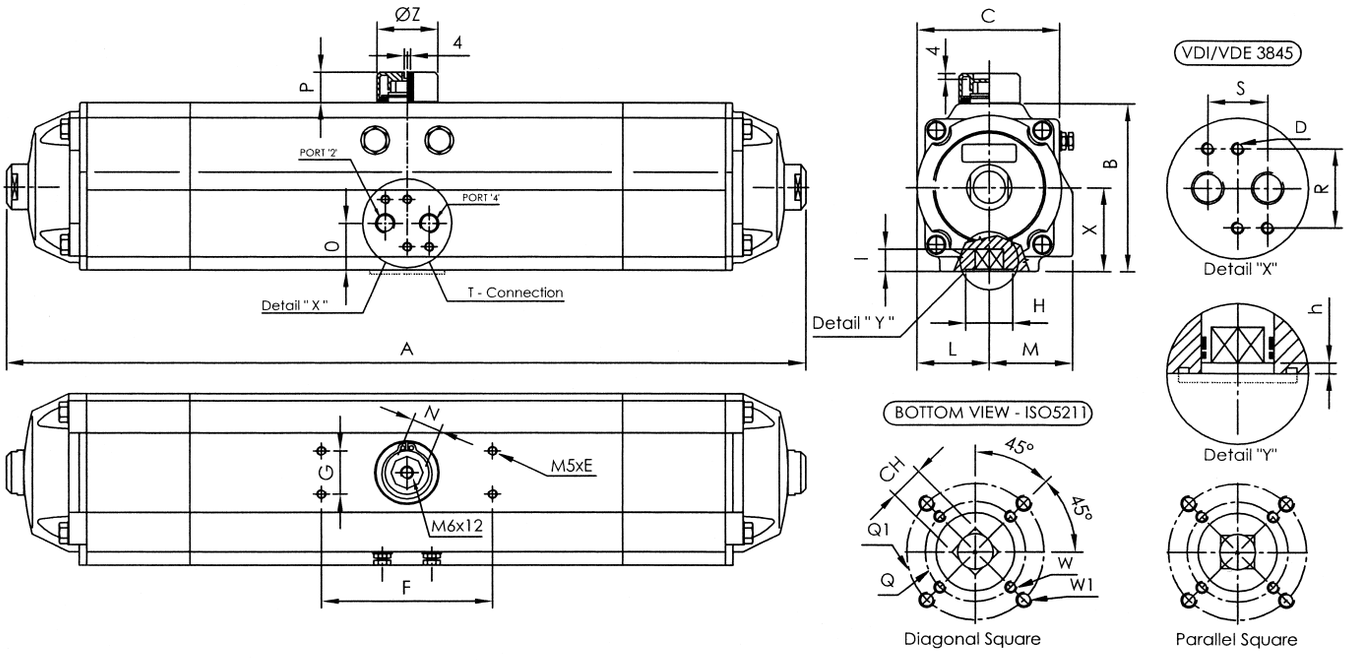

DIMENSIONS IN mm

ACTUATOR MODEL	A	B	C	D	E	F	G	H	I min.	L	M	N	O	P	Q	Q1	R	S	W	W1	T - ISO 228	ISO Flange*	CH*	h min.	X	Z	Approx. Weight (Kg)
FM AT050 S																											
FM AT100 S																											
FM AT200 S																											
FM AT300 S	605	127	111	M5x8	8	80	30	55	19	56	67	19	37,5	20	70	-	32	24	M8	-	1/4"	F07	17	1,5	63,5	40	14,4
FM AT400 S	780	157	136	M5x8	8	80	30	70	24	69,5	82	27	45	30	102	-	32	24	M10	-	1/4"	F10	22	1,5	78,5	56/65	27,5
FM AT500 S	993	196	169	M5x8	8	80	30	85	29	88	99	27	52	30	125	-	32	24	M12	-	1/4"	F12	27	1,5	98	65	50
FM AT600 S																											

*Notes: Other connections available.

METRIC TORQUE RATINGS

SPRING RETURN TORQUE RATINGS IN Nm																										Spring stroke	
Supply Pressure:		2,5 Bar		3 Bar		3,5 Bar		4 Bar		4,2 Bar		4,5 Bar		5 Bar		5,5 Bar		6 Bar		7 Bar		8 Bar			
Actuator Model	Spring Set*	90°	0° and 180°	90°	0° and 180°	90°	0° and 180°	90°	0° and 180°	90°	0° and 180°	90°	0° and 180°	90°	0° and 180°	90°	0° and 180°	90°	0° and 180°	90°	0° and 180°	90°	0° and 180°	0° and 180°	90°
FM AT050	S 06																								
	S 08																								
	S 10																								
	S 12																								
FM AT100	S 06																								
	S 08																								
	S 10																								
	S 12																								
FM AT200	S 06																								
	S 08																								
	S 10																								
	S 12																								
FM AT300	S 06	36,1	19,2	**49,4**	**32,5**	62,7	45,8	76	59,1	81,3	64,4	89,3	72,4	103	85,7	116	99							**47,3**	**30,4**
	S 08					52,5	30	**65,8**	**43,3**	**71,1**	**48,7**	79,1	56,6	92,4	69,9	106	83,2	119	96,5	146	123			**63**	**40,5**
	S 10											69	40,9	**82,3**	**54,2**	95,6	67,5	109	80,8	135	107	162	134	**78,8**	**50,7**
	S 12															85,4	51,7	**98,7**	**65**	125	92	152	118	**94,5**	**60,8**
FM AT 400	S 06	75,5	39,6	**103,2**	**67,3**	131	95	159	123	170	134	186	150	214	178	242	206							**99**	**63**
	S 08					110	62	**137,6**	**89,7**	**149**	**101**	165	117	193	145	221	173	248	201	304	256			**132**	**84**
	S 10											144	84,5	**172**	**112**	200	140	227	168	283	223	338	278	**165**	**105**
	S 12															179	107	**206**	**135**	262	190	317	245	**198**	**126**
FM AT 500	S 06	149,0	84,3	**205,7**	**141,1**	262	198	319	255	342	277	376	311	433	368	489	425							**199**	**135**
	S 08					218	131	**274,3**	**188,1**	**297**	**211**	331	245	388	302	444	358	501	415	615	528			**266**	**180**
	S 10											286	178,4	**343**	**235**	400	292	456	349	570	462	683	575	**332**	**224**
	S 12															355	225	**411**	**282**	525	396	638	509	**399**	**269**
FM AT 600	S 06																								
	S 08																								
	S 10																								
	S 12																								
N° of Springs		The above value are the out-put torque that remain available to operate the valve when the port "2" is pressurized.																Out-put torque available when air supply fails							

*Notes: It is possible to obtain different torque values by interpolation of spring number (ex. S07)