

Actuator

FieldQ

AT 3820, 3821, 3822, 3823,
3824, 3825

Range of Application

Actuator for on-off manoeuvrings of valves where 90° rotation is demanded. Optimal choice that gives a compact and flexible solution, "plug-and play".

Quality Assurance

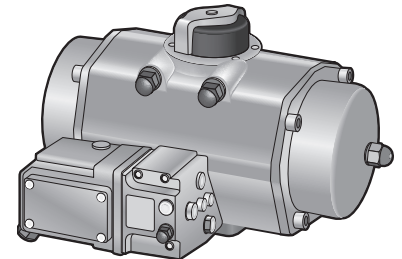
Mounting flange and stem square acc. to ISO 5211

CE-marking

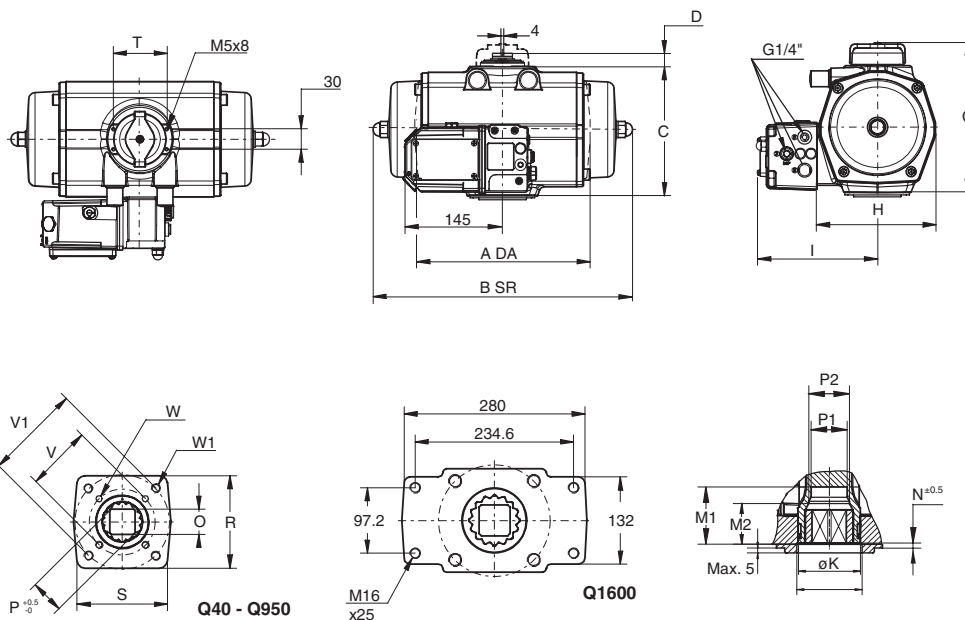
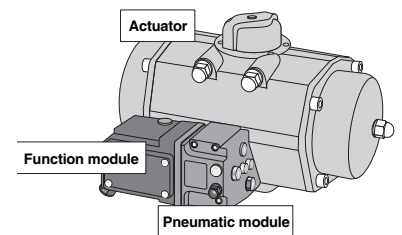
Fulfil PED 97/23/EC.

Material Specification

Detail	Material	Surface treatment
Actuator		
Body	Aluminium	epoxy coated
Drive shaft	Aluminium	
Spring set	Steel	
Pneumatic module		
Body	Aluminium	polyurethane
Seat	NBR	
Function module		
Body	Aluminium	polyurethan



AT 3820



Dimension and Weight

AT 3820, 3821							
Size	Q40	Q100	Q200	Q350	Q600	Q950	Q1600
A DA	180	221	283	305	387	424	516
B SR	202	254	358	390	419	460	568
C	104	141	160	191	245	276	337
C'	137	175	194	225	289	319	380
D	20	20	20	20	30	30	30
H	90	115	135	177	209	234	268
I	128	141	149	171	187	200	217
K	33	38	55	55	68	75	95
M1	34,5	34,5	50	50	50	65	81
M2	-	27	37	37	-	-	-
N	1	1,5	1,5	1,5	1,5	1,5	1,5
O max	14,11	19,13	22,13	27,13	27,13	36,16	46,16
O min	14,00	19,00	22,00	27,00	27,00	36,00	46,00
P	18,1	22,2	28,2	36,2	36,2	48,2	60,2
P1	18,1	23,1	32,2	36,5	36,8	48,3	60,5
P2	-	25,2	36,2	-	-	-	-
R	65	70	90	114	124	130	154
S	65	70	90	114	124	142	280
T	80	80	80	80	130	130	130
V	50	50	70	70	102	102	165
V1	70	70	102	102	125	140	-
W	M6x10	M6x10	M8x13	M8x13	M10x16	M10x16	M20x30
W1	M8x13	M8x13	M10x16	M10x16	M12x20	M16x25	-

Measurements in mm.

Function and Design

The control concept consists of three parts, which interact and have different functions.

Actuator

Actuator with linear torque characteristic.

Adjustable screws for stroke-limit $\pm 5^\circ$ and visual position indicator are placed on the top of the actuator. Mounting to valve is acc. to standard ISO 5211.

The single-acting actuators are provided with compact spring set for safe dismantling and maintenance. The actuator is supplied as standard with spring closing function. If spring opening function should be required, this has to be specified upon order.

Pneumatic module

The actuator is always delivered with this module. The module makes the tasks of a solenoid valve and controls the air to and from the actuator. It is a patented solution and air into the actuator driven by a membrane. This design provides as much air capacity to fit all actuator sizes. Pneumatic modules for double or single acting actuators are of course available for different control voltage.

Function module

This module is available in different performance:

The conventional module acts as a terminal box for the voltage and position transmitter with proximity or mechanical switches.

The smart module has an automatic adjustment of limit positions via a key-pad.

Profibus (DP and PA)

Fieldbus Foundation

ASI interface

Atex execution

For detailed technical information of the modules, see separate manual "FieldQ"

Technical information actuator

	AT3820	AT3821
Operating pressure	2-8 bar (g)	6-8 bar (g) with max spring set 3-8 bar (g) with reduced spring set
Temperature	-20 to +80° C	-20 to +80° C
Manoeuvre medium	Air or inert gases Filtered to 50 micron	Air or inert gases Filtered to 50 micron

Technical information function modules

	AT3823 Conventional				AT3824 Smart				AT3825 Fieldbus		
	QC11	QC13	QC14	QC21	QC23	QC01	QC02	QC03	QC04	QC30	QC34
Function	24VDC	230VAC	Intrinsically safe	24VDC	230VAC	24VDC	230VAC	Intrinsically safe	Intrinsically safe	ASi	FF*
Option				ATEX	ATEX				Namur		
Limit switch	250VAC/DC	250VAC/DC	30VDC	250VAC/DC	250VAC/DC	30VDC	250VAC	30VDC	IEC60947-5-6	Digital	Digital

* Foundation™ Fieldbus

Torque (Nm) AT 3820

Fig. no.	Supply pressure bar (e)					
	2	4	5	6	7	8
AT 3820QD40	17	34	42	51	59	68
AT 3820QD100	38	76	95	115	134	153
AT 3820QD200	82	167	209	251	293	335
AT 3820QD350	143	290	363	436	510	583
AT 3820QD600	243	492	617	741	866	991
AT 3820QD950	363	735	921	1107	1293	1479
AT 3820QD1600	600	1214	1522	1829	2137	2444

Torque (Nm) AT 3821

Fig. no.	Supply pressure bar (e)							
	5,5		6,0		7,0		Spring torque	
	Start	End	Start	End	Start	End	Start	End
AT 3821QS40	21	4	25	8	34	17	40	25
AT 3821QS100	48	11	59	21	79	41	88	55
AT 3821QS200	103	18	125	41	170	85	196	123
AT 3821QS350	167	24	206	63	283	141	347	223
AT 3821QS600	298	48	364	114	496	246	584	347
AT 3821QS950	455	75	554	174	751	371	869	538
AT 3821QS1600	744	142	907	305	1233	630	1421	897

Actuator

FieldQ

AT 3820, 3821, 3822, 3823,
3824, 3825

Dimensioning AT 3820 (double acting)

Actuator size		Q40	Q100	Q200	Q350	Q600	Q950	Q1600
Ball valve 3-pcs AT 3502-3552 reduced bore	DN	8-50	65	80-100	125-150	-	-	
Ball valve Ajtec AT 3533-3534 full bore	DN	10-40	50-65	80-100				
Ball valve flanged AT 3580-3587 full bore	DN	15-40	50	65-80	100-125	150-200		
Butterfly valve AT 2282 vid Δp 10 bar	DN	-	80	100-125	150-200	250	300	
Butterfly valve Eurovalve AT 2310-2344 at Δp 10 bar	DN	50-100	125-150	200	250	300-350	400-450	500

Dimensioning AT 3821 (single acting)

Actuator size		Q40	Q100	Q200	Q350	Q600	Q950	Q1600
Ball valve 3 pcs AT 3502-3552 reduced bore	DN	8-32	40-50	65-80	100	125-150	200	-
Ball valve Ajtec AT 3533-3534 full bore	DN	10-25	32-40	50-65	80-100	-	-	-
Ball valve flanged AT 3580-3587 full bore	DN	15-25	32-40	50-65	80-100	125-150	200	-
Butterfly valve AT 2282 vid Δp 10 bar	DN	-	-	80	100-125	150	200	250
Butterfly valve Eurovalve AT 2310-2344 at Δp 10 bar	DN	50-80	100	125-150	200	250	300-350	400-450

The rating in chart is based on the available working pressure 6 bar. The chart does not respect variations in operating conditions that can change the torque. Dimensioning for deviant operating conditions on request and is also valid for AT 3820.

Accessories and Options

Lockable override
Speed control
Namur-plate for solenoid valve mounting

Other options that are linked to the function module are listed below.

Options	AT3823 Conventional					AT3824 Smart				AT3825 Fieldbus	
	QC11	QC13	QC14	QC21	QC23	QC01	QC02	QC03	QC04	QC30	QC34
Quick contact										M12	M12
Gold plated switch	Yes	Yes	Yes	Yes	Yes						
Embedded switch	Yes	Yes	Yes								
Inductive switch PNP, 3-wire	Yes	Yes									
Inductive switch NPN, 3-wire	Yes	Yes									
Inductive switch 2-wire, NAMUR	Yes	Yes	Yes	Yes	Yes						
Inductive switches 2-wire	Yes	Yes									

The above options specified when ordering.

Installation

In- and outdoors.
Optional mounting position.
See separate manual "Field Q".

Maintenance and spare parts

Acc. to PED with all necessary technical informations.

Marking

Acc. to PED with all necessary technical information.

How to order actuator incl. associated pneumatic module

Fig. no.	Description	Size
3820QD	Double-acting actuator	40-1600
3821QS	Single-acting actuator	40-1600

How to order function module

Fig no.	Function
AT3823	QC11, QC13, QC14, QC21 or QC23
AT3824	QC01, QC02, QC03 or QC04
AT3825	QC30 or QC34

How to order accessories

Fig no.	Accessories
AT3826	MO = Manual override SC = Speed control NAMUR = Namur-plate