



PAL series

Pneumatically driven rotary actuators



Double acting	Spring-closed	Spring-opening	ISO 5211 Flange	Square type [mm]	Distance of mounting holes on the top [mm]	Air connection (thread)	Air connection (NAMUR)	Size
PALD-001-03-09*			F 03	9	50 x 25	G 1/8"	G 1/4"	1
PALD-002-04-11	PALC-002-04-11	PALO-002-04-11	F 04	11	50 x 25	G 1/8"	G 1/4"	2
PALD-002-03-09	PALC-002-03-09	PALO-002-03-09	F 03	9	50 x 25	G 1/8"	G 1/4"	2
PALD-002-04-09	PALC-002-04-09	PALO-002-04-09	F 04	9	50 x 25	G 1/8"	G 1/4"	2
PALD-006-05-14	PALC-006-05-14	PALO-006-05-14	F 05	14	80 x 30	G 1/8"	G 1/4"	6
PALD-006-04-09	PALC-006-04-09	PALO-006-04-09	F 04	9	80 x 30	G 1/8"	G 1/4"	6
PALD-006-04-11	PALC-006-04-11	PALO-006-04-11	F 04	11	80 x 30	G 1/8"	G 1/4"	6
PALD-006-05-09	PALC-006-05-09	PALO-006-05-09	F 05	9	80 x 30	G 1/8"	G 1/4"	6
PALD-006-05-11	PALC-006-05-11	PALO-006-05-11	F 05	11	80 x 30	G 1/8"	G 1/4"	6
PALD-012-05-14	PALC-012-05-14	PALO-012-05-14*	F 05	14	80 x 30	G 1/4"	G 1/4"	12
PALD-012-05-11	PALC-012-05-11	PALO-012-05-11	F 05	11	80 x 30	G 1/4"	G 1/4"	12
PALD-012-07-11	PALC-012-07-11	PALO-012-07-11	F 07	11	80 x 30	G 1/4"	G 1/4"	12
PALD-012-07-14	PALC-012-07-14	PALO-012-07-14	F 07	14	80 x 30	G 1/4"	G 1/4"	12
PALD-012-07-17	PALC-012-07-17	PALO-012-07-17	F 07	17	80 x 30	G 1/4"	G 1/4"	12
PALD-025-05-14	PALC-025-05-14	PALO-025-05-14	F 05	14	80 x 30	G 1/4"	G 1/4"	25
PALD-025-05-11	PALC-025-05-11	PALO-025-05-11	F 05	11	80 x 30	G 1/4"	G 1/4"	25
PALD-025-07-11	PALC-025-07-11	PALO-025-07-11	F 07	11	80 x 30	G 1/4"	G 1/4"	25
PALD-025-07-14	PALC-025-07-14	PALO-025-07-14	F 07	14	80 x 30	G 1/4"	G 1/4"	25
PALD-025-07-17	PALC-025-07-17	PALO-025-07-17	F 07	17	80 x 30	G 1/4"	G 1/4"	25
PALD-050-07-17	PALC-050-07-17	PALO-050-07-17	F 07	17	80 x 30	G 1/4"	G 1/4"	50
PALD-050-07-22	PALC-050-07-22	PALO-050-07-22	F 07	22	80 x 30	G 1/4"	G 1/4"	50
PALD-050-10-22	PALC-050-10-22	PALO-050-10-22	F 10	22	80 x 30	G 1/4"	G 1/4"	50
PALD-090-10-22	PALC-090-10-22	PALO-090-10-22	F 10	22	80/130 x 30	G 1/4"	G 1/4"	90
PALD-090-10-27	PALC-090-10-27	PALO-090-10-27	F 10	27	80/130 x 30	G 1/4"	G 1/4"	90
PALD-090-12-22	PALC-090-12-22	PALO-090-12-22	F 12	22	80/130 x 30	G 1/4"	G 1/4"	90
PALD-090-12-27	PALC-090-12-27	PALO-090-12-27	F 12	27	80/130 x 30	G 1/4"	G 1/4"	90
PALD-130-10-22	PALC-130-10-22	PALO-130-10-22	F 10	22	80/130 x 30	G 1/4"	G 1/4"	130
PALD-130-12-22	PALC-130-12-22	PALO-130-12-22	F 12	22	80/130 x 30	G 1/4"	G 1/4"	130
PALD-130-12-27	PALC-130-12-27	PALO-130-12-27	F 12	27	80/130 x 30	G 1/4"	G 1/4"	130

* PALD-001-03-09-F and PALO-012-05-14-F – with FKM seal

ENGLISH

Materials:

Housing: Anodized aluminium, gear rack and piston: Aluminium, cover: Acetal resin (from size 12: aluminium), seals: NBR, optional: FKM

Temperature range:

-20°C to max. +80°C, FKM seals (-20°C to max. +120°C, as of size 12 to 130: to max. +150°C) -F

Control pressure:

6 - 10 bar (lower pressures upon request)

Properties:

- mounting flange according to ISO 5211,
- actuator connection with polygon

NEDERLANDS

Materialen

Behuizing: Geanodiseerd aluminium, rek en zuiger: Aluminium, deksel: Acetaalharz (vanaf grootte 12: Aluminium), afdichtingen: NBR, optioneel FKM

Temperatuurbereik:

-20 °C tot max. +80 °C, FKM-afdichtingen (-20°C tot max. +120°C, vanaf grootte 12 tot 130: tot max. +150°C) -F

Besturingsdruk:

6 - 10 bar (lagere drukken op aanvraag)

Eigenschappen:

- aansluitflens conform ISO 5211,
- aandrijfverbinding met veelkant

DEUTSCH

Werkstoffe:

Gehäuse: Aluminium eloxiert, Zahnstange und Kolben: Aluminium, Deckel: Acetalharz (ab Baugröße 12: Aluminium), dichtungen: NBR, optional FKM

Temperaturbereich:

-20°C bis max. +80°C, FKM-Dichtung (-20°C bis max. +120°C, ab Baugröße 12 bis 130: bis max. +150°C) -F

Steuerdruck:

6 - 10 bar (geringere Drücke auf Anfrage)

Eigenschaften:

- anbauflansch gemäß ISO 5211,
- antriebsanschluss mit Vielkant gem.

FRANÇAIS

Matériaux:

Boîtier: aluminium anodisé, crémaillère et piston: aluminium, couvercle: résine acétale (à partir de la taille 12: aluminium), joints: NBR, en option FKM

Plage de température:

-20°C à +80°C max., Joints en FKM (-20°C à max. +120°C, dimensions 12 à 130 : jusqu'à +150°C) -F

Pression de commande:

6 - 10 bar (pressions plus faibles sur demande)

Caractéristiques:

- bride de montage conforme à ISO 5211
- connexion d'entraînement avec un

according to DIN 3337,
 •connection for solenoid valve according to VDI/VDE 3845 (NAMUR) or using a thread,
 •connection for position controller or limit switch box according to VDI/VDE 3847 (NAMUR),
 •visual display according to NAMUR,
 •construction ATEX-compliant Ex II 2GD c

Commodity Code: 8412390090

conform DIN 3337,
 •aansluiting voor magneetklep conform VDI/VDE 3845 (NAMUR) of via schroefdraad,
 •aansluiting voor positieregelaar of eindschakelaarkast conform VDI/VDE 3847 (NAMUR),
 •visuele weergave conform NAMUR,
 •vorm ATEX-compatibel Ex II 2GD c

HS Code: 8412390090

DIN 3337,
 •anschluss für Magnetventil nach VDI/VDE 3845 (NAMUR) oder über Gewinde,
 •anschluss für Stellungsregler oder Endschalterbox nach VDI/VDE 3847 (NAMUR),
 •sichtanzeige nach NAMUR,
 •bauweise ATEX-konform Ex II 2GD c 85°C (Antriebe ab Größe 12: Ex II 2GD c 110°C)

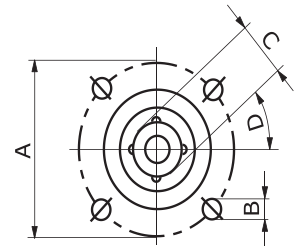
Zollwarennummer: 8412390090

carré conf. à DIN 3337
 •raccord pour électrovanne selon VDI/VDE 3845 (NAMUR) ou par filetage
 •raccord pour régulateur de position ou boîtier de fin de course selon VDI/VDE 3847 (NAMUR),
 •écran selon NAMUR
 •construction conforme à ATEX Ex II 2GD c

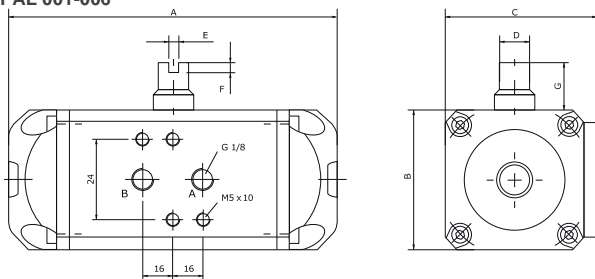
Numéro des marchandises en douane: 8412390090

Standard dimensions ISO 5211

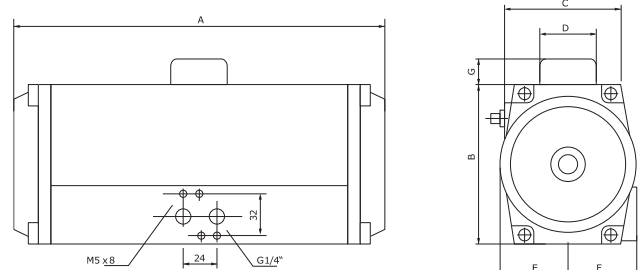
ISO 5211	A	B	C	D
F 03	36	M 5	9	45°
F 04	42	M 5	11	45°
F 05	50	M 6	14	45°
F 07	70	M 8	17	45°
F 10	102	M 10	22	45°
F 12	125	M 12	27	45°



PAL 001-006



PAL 012-180



	A	B	C	D	E	F	G		A	B	C	D	E	F	G
001	88	45	45	11	4	4	20	012	184	100	71.5	17	41.5	53	20
002	132	56	60	12	4	4	20	025	260	120	86.0	17	52.0	55	20
006	175	66	72	22	4	4	20	050	298	155	113.3	22	70.0	71	20
								090	390	172	119.5	27	76.0	77	30
								130	458	197	140.0	27	88.0	88	30
								180	528	230	153.5	36	103.0	101	30

Torques (Nm) for double-acting actuators

Size	Pressure							
	2bar	3bar	4bar	5bar	6bar	7bar	8bar	
001	2.48	3.72	4.96	6.2	7.44	8.68	9.92	
002	5.4	8.1	10.8	13.5	16.2	18.9	21.6	
006	12.4	18.8	24.8	31	37.2	43.4	49.6	
012	24.7	37	49.3	61.6	74	86.3	98.6	
025	47	71	95	119	143	167	190	
050	89	133	177	222	266	310	354	

Torques (Nm) for single-acting actuators

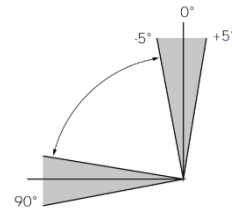
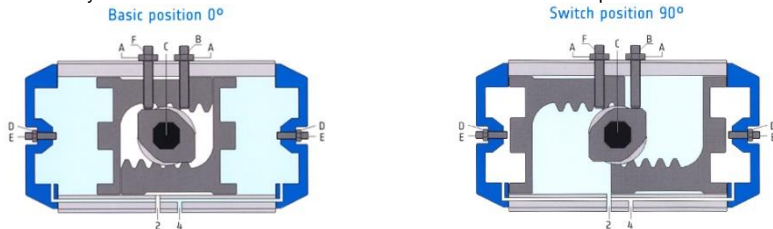
Size	3bar		4bar		5bar		6bar (Standard)		7bar		8bar	
	Nm	Springs	Nm	Springs	Nm	Springs	Nm	Springs	Nm	Springs	Nm	Springs
002	1.8	4	2.7	6	3.6	8	4.5	10	5.4	12	6.3	14
006	4.1	4	6.1	6	8.2	8	10.3	10	12.3	12	14.4	14
012	10	4	12	6	16	8	20	10	24	12	28	14
025	21	4	24	6	31	8	39	10	47	12	55	14
050	37	4	44	6	59	8	74	10	88	12	103	14

End position adjustment (only type 012-180)



Disconnect the rotary actuator from the air supply before setting the end positions.
Never adjust the adjusting screws against the effect of pressure.

The pivoting angle can be adjusted in both end positions with the adjustment screws "F" (Basic position 0°) and "B" (Switch position 90°) in a pressure free condition by between +5° and -5°. The lock-nuts "A" ensure that the new position is secured.



Stroke limiting (Only type 012-180)



Disconnect the rotary actuator from the air supply before adjusting the stroke limiter.
Never adjust the adjusting screws against the effect of pressure.

The rated pivoting angle can be set in the switch position with the setting screws "E" in a pressure-free condition by between +5° and -30°. The lock-nuts "D" ensures that the new position is secured.

