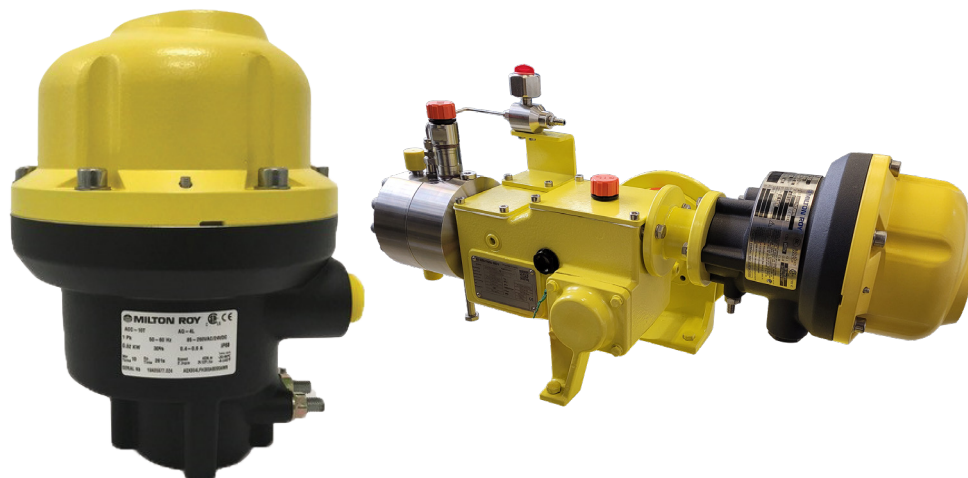


Actuator Capacity Controller (ACC)

The Actuator Capacity Controller (ACC) is a compact, robustly designed controller that optimizes flow, precision, reliability and integration with Milton Roy® pumps.

By utilizing a 4-20mA command signal or fieldbus HART communication, in a closed loop control system, the ACC provides immediate and accurate control of the pump flow under varying process conditions.



Technical Specifications


ACC Capacity Controller			
		ACC - 3/4 Turn	ACC - 10 Turns
General	Description	ACC actuators include a multi-voltage board to supply a 24VDC motor Compact gear case, emergency manual command and standard output with a square of 22mm	
	Torque range	70N.m	40N.m
	Output speed	45 sec	5 min
	Duty classification	Inching/Positioning: Class B actuators complying with EN15714-2	
Enclosure - Protection	Casing	<ul style="list-style-type: none"> Aluminum gravity casting enclosure Cover fastened by captive and stainless-steel screws 	
	Weather proof	<ul style="list-style-type: none"> IP68 (comply with EN 60529, FM 3616, CSA 213, CSA 25) NEMA 4X (comply with NEMA 250) 	
	Explosion proof (Cf. ACC marking)	<ul style="list-style-type: none"> IEC Ex db IIB T6 Complying with ISO 60079-0, ISO 60079-1, ISO 80079-36, ISO 80079-37 ATEX II 2 G Ex db IIB T6 Gb complying with EN 60079-0, EN 60079-1, EN 80079-36, EN 80079-37 CSA Gas : Class 1, Division 1 Group C & D T6 CSA Dust : Class II, Division 1 Group E, F, G T80°C CCC Ex-proof Ex db IIB T6 Gb 	
	External coating	In standard, C4 coating according to ISO 12944 (C5 coating optional)	
	Paint color	Cover yellow color RAL 1018 ; Body black color	
Ambient Temperature range	40° to +60° C (-40° to +140° F)		

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MOTOR	Motor technology	24VDC motors with 2-wire connection to the control boards	
	Motor duty rating	Inching/Positioning (complying with EN15714-2 Class B): S4-30% motor duty rating. Up to 360 starts per hour at peak of operation (Voltage +/- 10%, frequency +/- 2%) AC: Is= 2 A (starting current) DC: Is= 6 A (starting current) Rated power all 50% load: 20W (ACC-3/4 turn), 13.5W (ACC-10 turn)	
MECHANICAL SPECIFICATIONS	Gear design	The Actuator is mechanically self-locking and lubricated for product lifetime	
	Manual emergency operation	Manual emergency operation via a 10mm hexagonal manual shaft	
	Output flange	The Actuator flanges comply with ISO 5211 F05-F07	
	Lubrication	The actuators are lubricated for the product lifetime and do not require any special service	
ELECTRICAL SPECIFICATIONS	Power supply	The actuators can operate on a wide variety of single phase power supply from 85VAC to 260VAC 50/60Hz and 24VDC (12VDC single power supply available on request)	
	Terminal compartment	Push-in type terminals for controls and power supply Internal and external earth grounding post Cable cross section for power supply: from 24 to 14 AWG / 0,25 à 2,5mm ² Cable cross section for command signal: from 24 to 16 AWG / 0,25 à 1,5mm ²	
	Conduit entries	2 x 3/4 NPT as standard (cable glands are not supplied)	
POSITION SENSORS	Inching/Positioning Control	<ul style="list-style-type: none"> • Command isolated from the feedback signals • 4-20mA analog input command given through 2 wires + HART (option) • 4-20mA analog output feedback received through 2 wires 	
	Travel Limit systems	<ul style="list-style-type: none"> • Limit switches actuated by adjustable cam-block 	Operated by the analog positioner only
		<ul style="list-style-type: none"> • 2 SPDT switches as standard (Open and Close) + 2 auxiliary switches (customer feedback) 250VAC-5N 48VDC-2.5A (resistive load) 	

Actuator Capacity Controller (ACC)

ACC Marking

Marking	ATEX	IECEX	CCC Explosion proof	CSA C&US Enclosure
	Enclosure "d" protection			"C1, D1" protection
Manufacturer	Milton Roy, LLC 201 Ivyland Road, Ivyland, PA 18974, USA			
Model	ACC			
Exproof Certificate	INERIS 19ATEX0019X	IECEX INE 19.0016X	CCC-2020312307000144	CSA 159110
Special Marking	WARNING – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT CABLE ENTRIES: SEE INSTRUCTIONS			
N° notified body	CE 0891			
Gas marking	II 2 G Ex db IIB T6 Gb	Ex db IIB T6 Gb	Ex db IIB T6 Gb	Class I, Div 1 Group C, D T6
Dust marking	Not available	Not available	Not available	Class II, Div 1 Group E, F, G T80°C
Ambient temperature	-40°C to +60°C	-40°C to +60°C	-40°C to +60°C	-40°C to +60°C (-40°F to +140°F)

Pump models using ACC

- G series with ACC 10 turns
- MacRoy® series with ACC 10 turns
- MAXROY® with ACC 3/4 turn
- mRoy® with ACC 10 turns
- MILROYAL® with ACC 10 turns
- PRIMEROY® with ACC 10 turns
- PRIMEROYAL® with ACC 10 turns

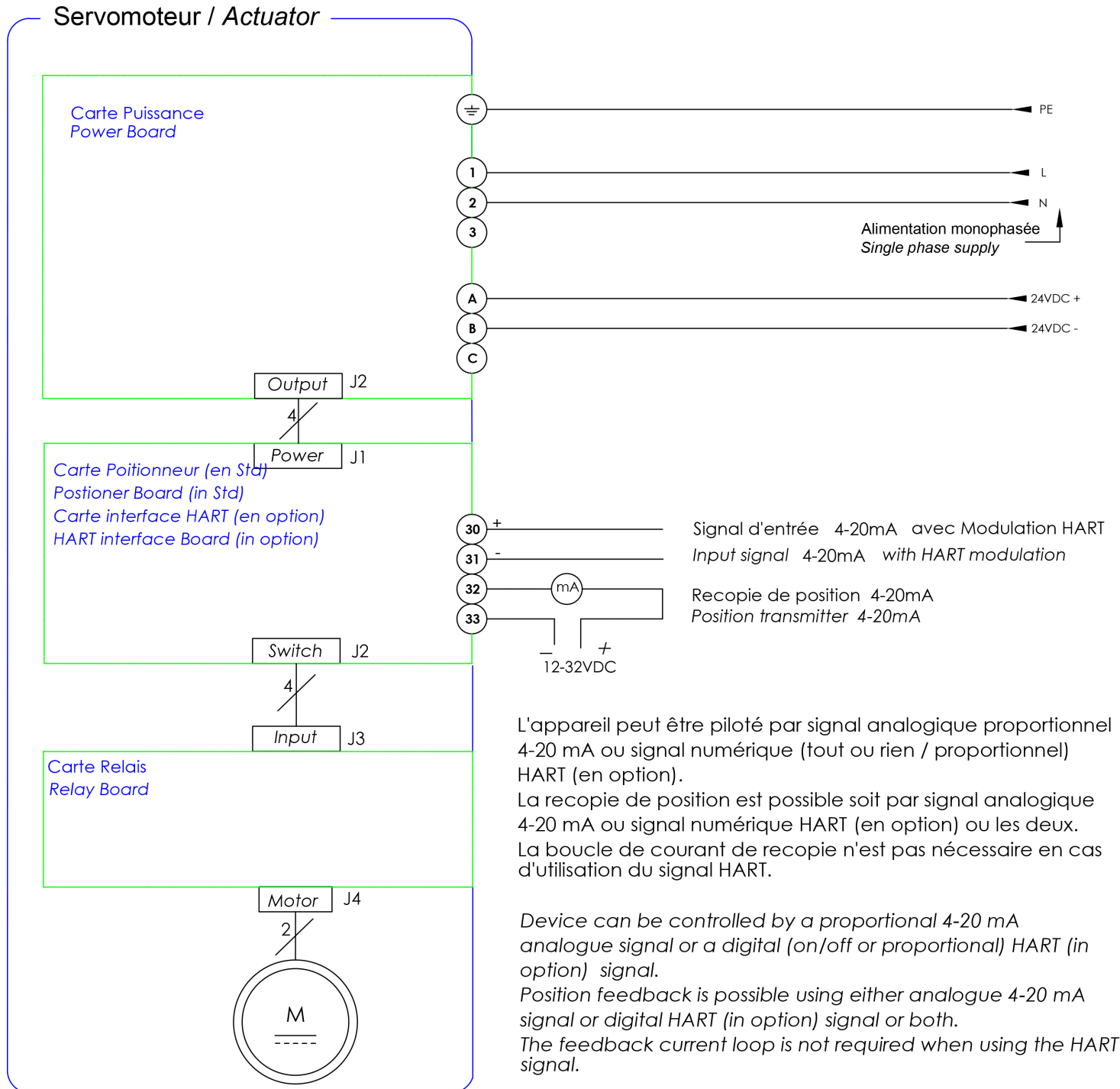
Actuator Capacity Controller (ACC)

Technical specifications		ACC - 3/4 turn	ACC - 10 turns
EC DIRECTIVES AND STANDARDS	Compliance with Directives and Standard	<ul style="list-style-type: none"> Directive 2004/108/EC Electromagnetic compatibility Directive 2006/95/EC Low voltage The following harmonized standards: <ul style="list-style-type: none"> EN 61000-6-4: Generic emissions standard for industrial environments EN 61000-6-2: Generic immunity standard for industrial environments EN 60034-1: Rotating (electrical machines) Directive ATEX2014/34/UE 	

Technical specifications		ACC - 3/4 turn	ACC - 10 turns
FIELDBUS	HART option	<ul style="list-style-type: none"> Protocol version: HART 7.0 Compatible with previous HART 5.0 and 6.0 revision <p>Communication rate</p> <ul style="list-style-type: none"> Transfer speed: 1.2 kbit/s 4-20mA current, based on modulation Frequency Shift Keying (FSK) 1200 Hz (bit 1) and 2200 Hz (bit 0) <p>Signal type</p> <ul style="list-style-type: none"> Input signal: HART digital signal and 4-20 mA analogic signal Output signal: Analogic feedback signal 4-20mA Extended power required: 12-32 VDC <p>Network architecture</p> <ul style="list-style-type: none"> Point to Point\monitoring the information from a single ACC Multidrop control and monitoring simultaneously the information from many ACC Maximum distance for communication 1,5 km Minimum loop impedance of 230 ohms ACC configuration: Available through DD file interface Compatible with SDC625 Compatible with Emerson 375 & 475 Field Communicator Internal power supply (directly from the ACC) 	

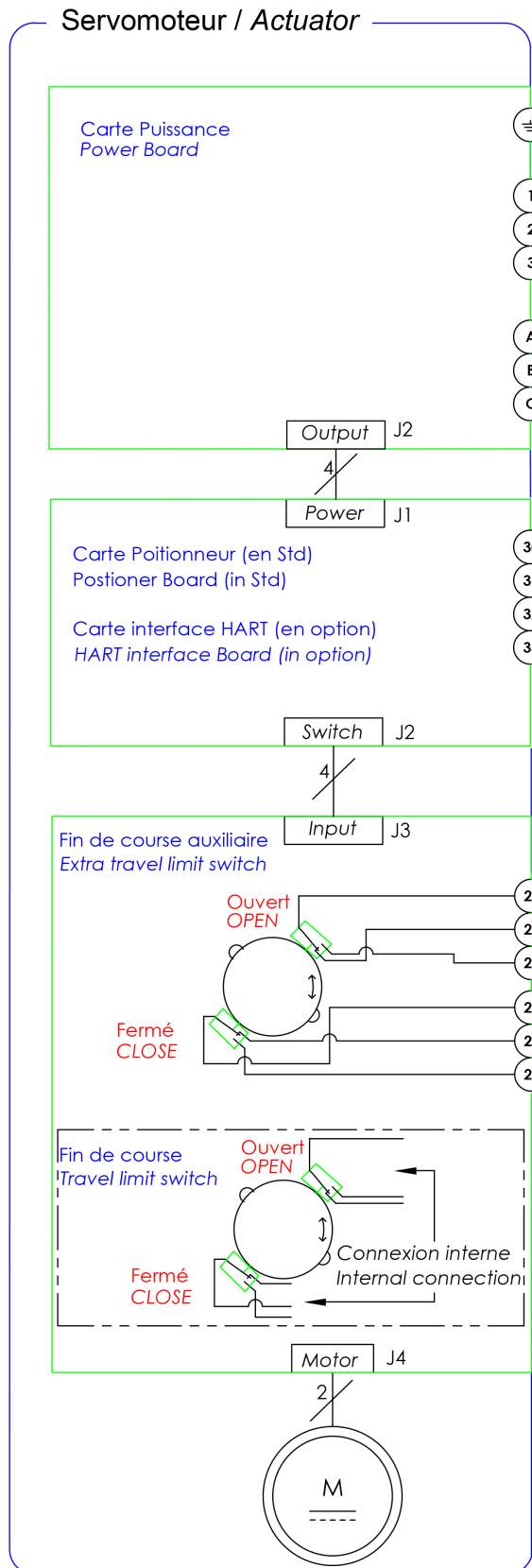
Actuator Capacity Controller (ACC)

ACC - 10 turns - Wiring Diagram

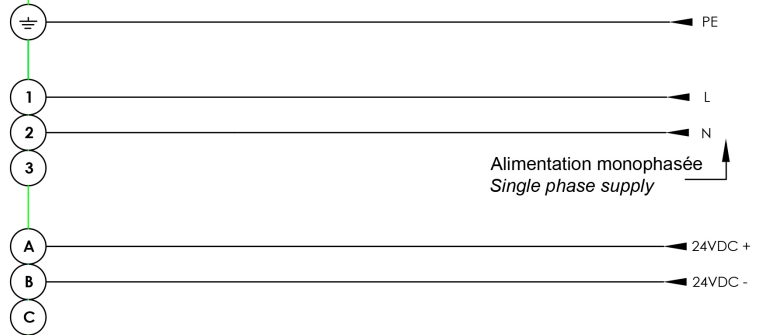


Actuator Capacity Controller (ACC)

ACC - 3/4 turn - Wiring diagram



Câblage Client Recommandé / Recommended Customer wiring



L'appareil peut être piloté par signal analogique proportionnel 4-20 mA ou signal numérique (tout ou rien / proportionnel) HART (en option). La recopie de position est possible soit par signal analogique 4-20 mA ou signal numérique HART (en option) ou les deux. La boucle de courant de recopie n'est pas nécessaire en cas d'utilisation du signal HART.

Device can be controlled by a proportional 4-20 mA analogue signal or a digital (on/off or proportional) HART signal (in option). Position feedback is possible using either analogue 4-20 mA signal or digital HART signal (in option) or both. The feedback current loop is not required when using the HART signal.

Configuration standard des minirupteurs pour une fermeture du servomoteur en sens horaire. La configuration des minirupteurs est inversée si l'appareil est réglé pour une fermeture en sens anti-horaire.

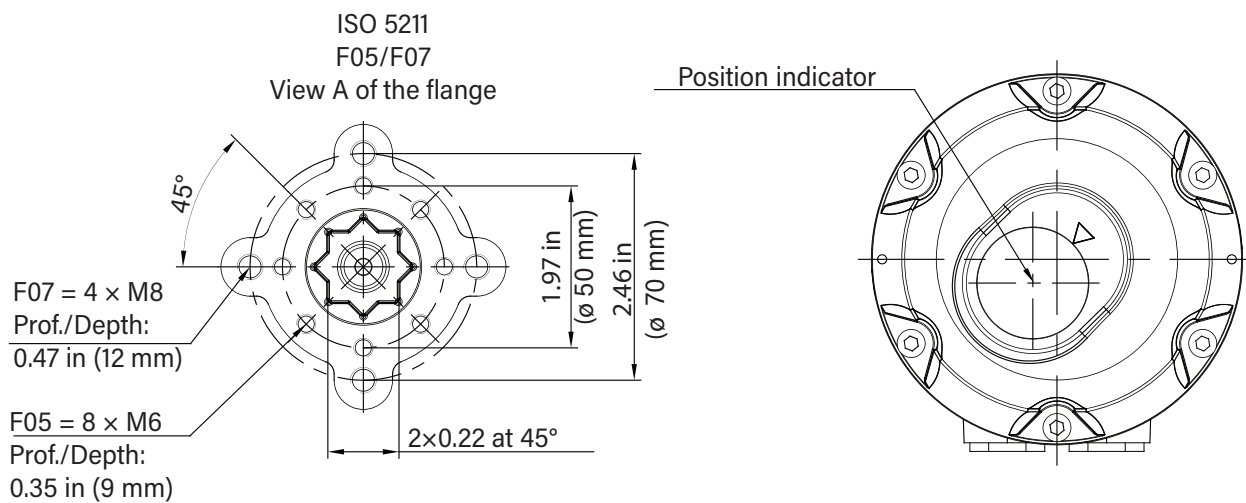
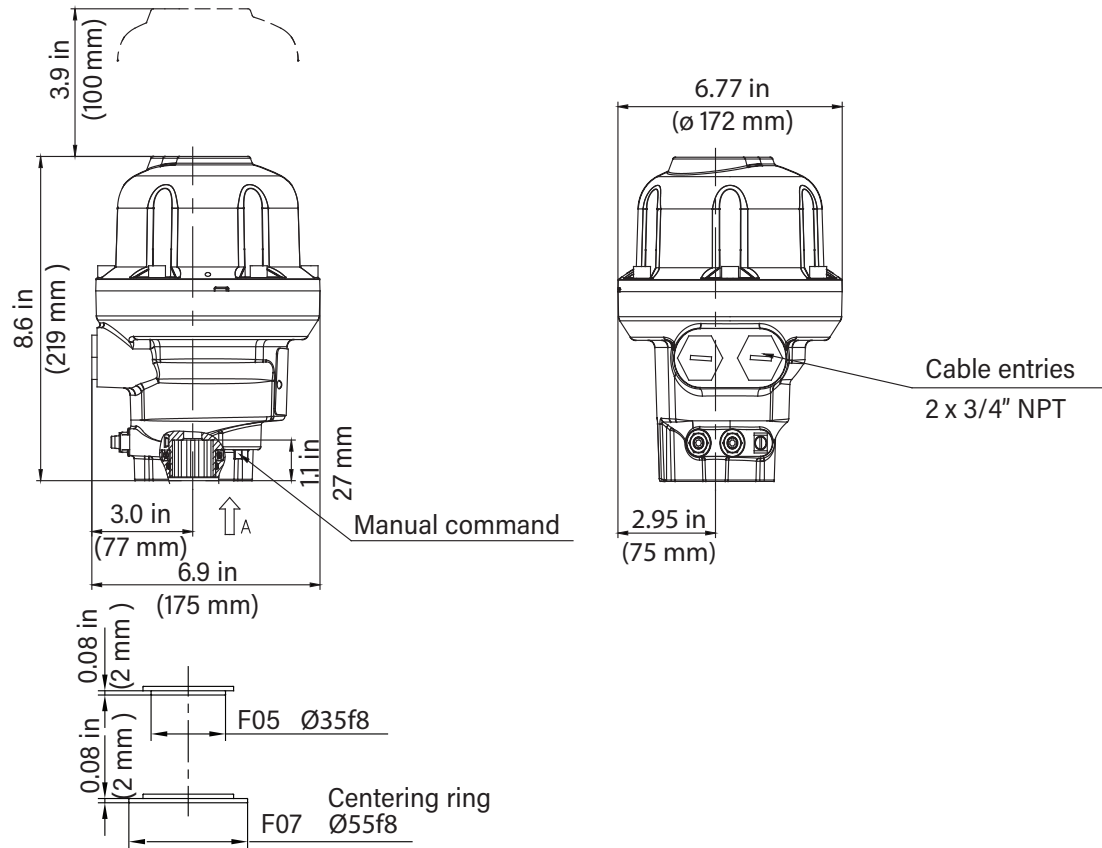
Standard switch configuration for an actuator closing in clockwise direction. Switch configuration is reversed if closing direction is set to counter-clockwise.

Alimentation 85 - 260VAC, 50/60Hz ou 24VDC
NE PAS ALIMENTER EN MONOPHASE et COURANT CONTINU EN MEME TEMPS.

Power supply 85 - 260VAC, 50/60Hz or 24VDC
DO NOT SUPPLY AC AND DC IN THE SAME TIME.

Actuator Capacity Controller (ACC)

Dimensions



The general dimensions are given for information only.

Actuator Capacity Controller (ACC)

ACC Part Numbers

Pump model	ACC description	ACC with 4-20mA input/ output analog signal (in standard)	ACC with HART communication (in option)
G & MacRoy series mRoy series Milroyal series Primeroy series Primeroyal series	ACC 10 turns - Weather-proof	0280088010N	0280088011N
	ACC 10 turns - Explosion-proof	0280087010N	0280087011N
MaxRoy series	ACC 3/4 turn - Weather-proof	0280088110N	0280088111N
	ACC 3/4 turn - Explosion-proof	0280087110N	0280087111N

ACC Spare Parts List

Designation	Kit Number
Seal kit	3051570001F
Cover kit	3051570003F
Indicator Disc kit 10T	3051570004F
Indicator Disc kit 3/4T	3051570005F
Power Board kit	3051570100F
Switch Board kit 10T	3051570300F
Switch Board kit 3/4T	3051570303F
Positioner Board kit	3051570201F
Positioner Board kit HART	3051570211F

ACC Assembly Kit Codes with its own Mounting Kit

The ACC is mounted on the pump with a dedicated mounting kit.

The ACC mounting kit is a robust and watertight mechanical coupling.

Each pump model has its own mounting kit.

Please, refer to the item code number of the complete ACC assembly kit with its own mounting kit, here under.

Pump Model	Plunger Size	Version	ACC kit Item # with its mounting kit	Description
mRoy MRA	C/D/E	Weatherproof	ACC10-93848-MRA	ACC KIT WEATHER PROOF MRA C/D/E
		Explosion proof	ACC10-93860-MRA	ACC KIT EXP. PROOF MRA C/D/E
mRoy MRA	F	Weatherproof	ACC10-93846-MRAF	ACC KIT WEATHER PROOF MRA F
		Explosion proof	ACC10-93859-MRAF	ACC KIT EXP. PROOF MRA F
mRoy MRB	K	Weatherproof	ACC10-93849-MRB	ACC KIT WEATHER PROOF MRB K
		Explosion proof	ACC10-93861-MRB	ACC KIT EXP. PROOF MRB K
mRoy MRB	L/R	Weatherproof	ACC10-93850-MRB	ACC KIT WEATHER PROOF MRB L/R
		Explosion proof	ACC10-93862-MRB	ACC KIT EXP. PROOF MRB L & R
mRoy XT	All	Weatherproof	ACC10-93852-XT	ACC KIT WEATHER PROOF XT
		Explosion proof	ACC10-93863-XT	ACC KIT EXP. PROOF XT
mRoy XW	All	Weatherproof	ACC10-92491-XW	ACC KIT WEATHER PROOF XW
		Explosion proof	ACC10-92489-XW	ACC KIT EXP. PROOF XW
MacRoy D	All	Weatherproof	ACC10-93854-MACROYD	ACC KIT WEATHER PROOF MAC D
		Explosion proof	ACC10-93866-MACROYD	ACC KIT EXP. PROOF MAC D
MacRoy G	All	Weatherproof	ACC10-93855-MACROYG	ACC KIT WEATHER PROOF MAC G
		Explosion proof	ACC10-93867-MACROYG	ACC KIT EXP. PROOF MAC G
Milroyal B	All	Weatherproof	ACC10-93856-MILROYALB	ACC KIT WEATHER PROOF MIL B
		Explosion proof	ACC10-93868-MILROYALB	ACC KIT EXP. PROOF MIL B
Milroyal C	All	Weatherproof	ACC10-93857-MILROYALC	ACC KIT WEATHER PROOF MIL C
		Explosion proof	ACC10-93869-MILROYALC	ACC KIT EXP. PROOF MIL C
Milroyal D	All	Weatherproof	ACC10-92482-MILROYALD	ACC KIT WEATHER PROOF MIL D
		Explosion proof	ACC10-92483-MILROYALD	ACC KIT EXP. PROOF MIL D