



CH Actuator

High Torque electric actuator

The CH valve actuators are used on ball or butterfly valves.

This quarter turn actuators are available from 50 Nm to 400Nm. As standard, this actuator offers an IP67 ABS housing, dome position indicator, end of travel limit switches, manual override and an internal heater.

The new Series offers multi-voltage capability and failsafe functionality utilizing a super-capacitor back-up system.

The CH family provides the following output running torques:

Model	Nominal Torque
CH1	50 Nm (443 lb-in)
CH2	80 Nm (708 lb-in)
CH3	110 Nm (974 lb-in)
CH4	200 Nm (1770 lb-in)
CH5	400 Nm (3540 lb-in)

TECHNICAL FEATURES & BENEFITS:

- **Multiple ISO 5211 mountings.**

The CH Series Actuators are ready for direct attachment on valves providing two size ISO 5211 and an octagonal female drive output.

- **Dome style local visual indicator.**

A clearly visible indicator allows intuitive indication of the valve position.

- **Hand operation.**

by hexagonal wrench, supplied in clip under the actuator, it's possible to do open/close operation when no power is being applied.

- **Fully weatherproof to IP67.**

Enhances the range of application environments.

- **End of travel confirmation switches.**

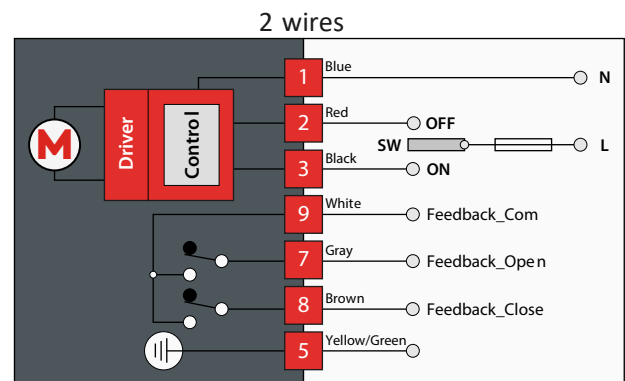
Provides line voltage capable switch up to 1 A Resistive.

- **Special models available.**

The CH family fits the customer needs extending the application coverage on request.



WIRING DIAGRAMS - ON/OFF MODELS





CH1

50 N.m (443 lb-in)

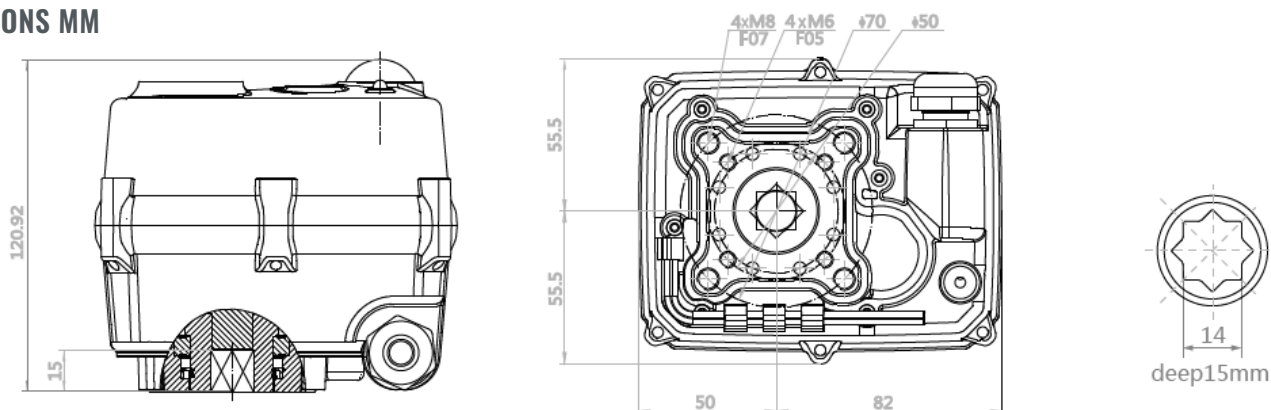
Available versions CH1 model				
Part number	Voltage	Function	Torque (Nm)	Torque (lb-in)
CH1FCM2	24VAC/DC	ON OFF	50 Nm	443 lb-in
CH1GCM2	95-265VAC	ON OFF	50 Nm	443 lb-in
CH1FCM2Fx	24VAC/DC	FAILSAFE	50 Nm	443 lb-in
CH1GCM2Fx	95-265VAC	FAILSAFE	50 Nm	443 lb-in
CH1GGM2	95-265VAC	4-20MA	50 Nm	443 lb-in
CH1FGM2	24VAC/DC	4-20MA	50 Nm	443 lb-in

TECHNICAL SPECIFICATION

	ON-OFF ELECTRIC ACTUATOR		ON-OFF FAILSAFE ELECTRIC ACTUATOR	
Ordering code	CH1GCM2	CH1FCM2	CH1GCM2Fx*	CH1FCM2Fx*
Rated voltage	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)
Voltage range	AC: 95-265V DC: 100-300V	AC: 18-26V DC: 22-28V	AC: 95-265V DC: 100-300V	AC: 18-26V DC: 22-28V
Consumption	25 W	25 W	40 W	40 W
Peak current	6.25 A	6.25 A	6.25 A	6.25 A
Fuse	2 A	4 A	4 A	4 A
Maximum break Torque Nm	60 Nm		60 Nm	
Manual operation	Yes, by hexagonal wrench (supplied in clip) when no power is being applied.			
Run time	≈ 10 sec			
Operating frequency	Not continuous, allow ≥ 1 minute between cycles			
Position confirmation	Mechanically driven dome style visual 2 colour indicator			
Mounting restriction	Do not install underslung/upside down. Can install upright horizontally or vertically.			
End position indication	Micro-switches operated by adjustable internal cams , set slightly ahead of the final motor stop position.			
ISO 5211	F05 & F07			
Working angle	Factory set at 90° ± 2°, maximum angle of rotation 360° unless multi turn series.			
Female drive	14mm x 15mm deep			
Ingress protection	IP67			
Max media temperature	≤ 80° C			
Ambient temperature	-20° C to 60° C			
Non-operating temperature	-40° C to 80° C			
Ambient humidity	5-95% RH non-condensing			
Housing	Plastic (ABS) cover			

*Note: x = O Failsafe Valve Open; C Failsafe Valve Closed

DIMENSIONS MM





CH 2

80 N.m (708 lb-in)

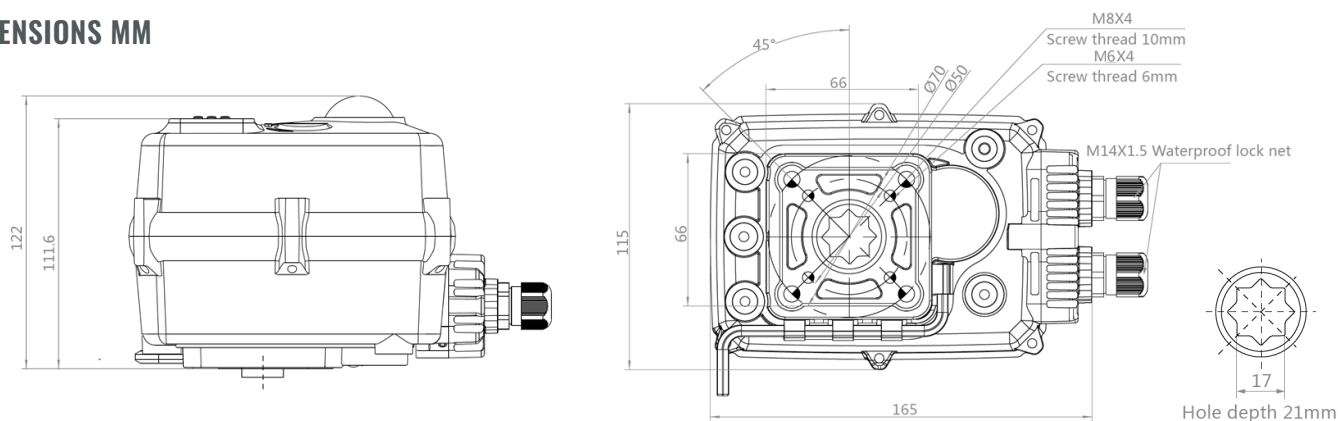
Available versions CH2 model				
Part number	Voltage	Function	Torque (Nm)	Torque (lb-in)
CH2FCM2	24VAC/DC	ON OFF	80 Nm	708 lb-in
CH2GCM2	95-265VAC	ON OFF	80 Nm	708 lb-in
CH2FCM2Fx	24VAC/DC	FAILSAFE	60 Nm	531 lb-in
CH2GCM2Fx	95-265VAC	FAILSAFE	60 Nm	531 lb-in
CH2GGM2	95-265VAC	4-20MA	80 Nm	708 lb-in
CH2FGM2	24VAC/DC	4-20MA	80 Nm	708 lb-in

TECHNICAL SPECIFICATION

	ON-OFF ELECTRIC ACTUATOR		ON-OFF FAILSAFE ELECTRIC ACTUATOR	
Ordering code	CH2GCM2	CH2FCM2	CH2GCM2Fx*	CH2FCM2Fx*
Rated voltage	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)
Voltage range	AC: 95-265V DC: 100-300V	AC: 18-26V DC: 22-28V	AC: 95-265V DC: 100-300V	AC: 18-26V DC: 22-28V
Consumption	60 W	60 W	60 W	60 W
Peak current	3.75 A	3.75 A	3.75 A	3.75 A
Fuse	4 A	4 A	4 A	4 A
Maximum break Torque Nm	90 Nm	90 Nm	90 Nm	90 Nm
Manual operation	Yes, by hexagonal wrench (supplied in clip) when no power is being applied.			
Run time	≈ 10 sec			
Operating frequency	Not continuous, allow ≥ 1 minute between cycles			
Position confirmation	Mechanically driven dome style visual 2 colour indicator			
Mounting restriction	Do not install underslung/upside down. Can install upright horizontally or vertically.			
End position indication	Micro-switches operated by adjustable internal cams , set slightly ahead of the final motor stop position.			
ISO 5211	F05 & F07			
Working angle	Factory set at 90° ± 2°, maximum angle of rotation 360° unless multi turn series.			
Female drive	17mm x 21mm deep			
Ingress protection	IP67			
Max media temperature	≤ 80° C			
Ambient temperature	-20° C to 60° C			
Non-operating temperature	-40° C to 80° C			
Ambient humidity	5-95% RH non-condensing			
Housing	Plastic (ABS) cover			

*Note: x=O Failsafe Valve Open; C Failsafe Valve Closed

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CH 3

110 N.m (974 lb-in)

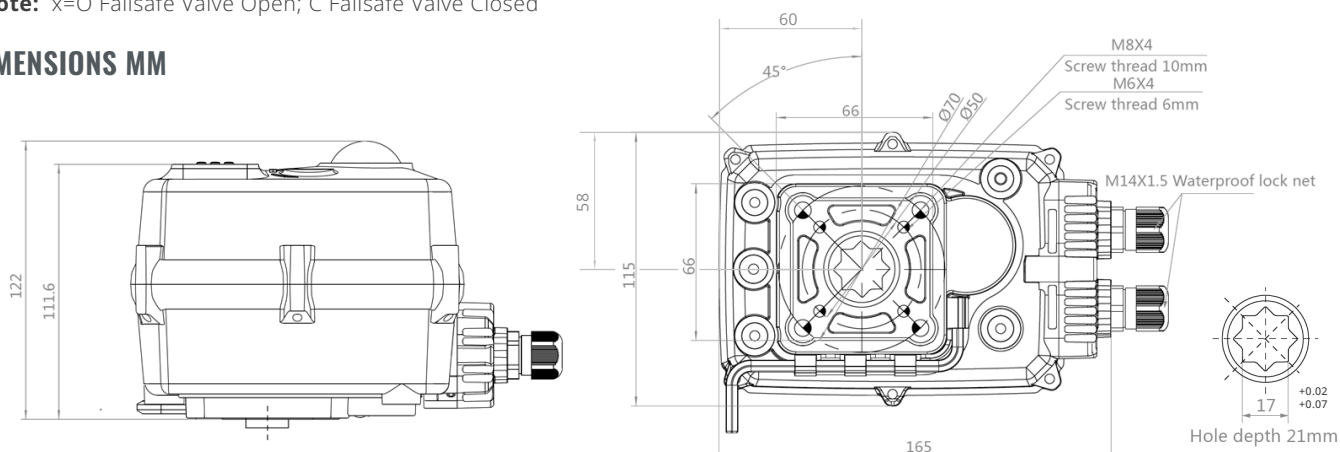
Available versions CH3 model				
Part number	Voltage	Function	Torque (Nm)	Torque (lb-in)
CH3FCM2	24VAC/DC	ON OFF	110 Nm	974 lb-in
CH3GCM2	95-265VAC	ON OFF	110 Nm	974 lb-in
CH3FCM2Fx	24VAC/DC	FAILSAFE	90 Nm	796 in-lb
CH3GCM2Fx	95-265VAC	FAILSAFE	90 Nm	796 in-lb
CH3GGM2	95-265VAC	4-20MA	110 Nm	974 lb-in
CH3FGM2	24VAC/DC	4-20MA	110 Nm	974 lb-in

TECHNICAL SPECIFICATION

	ON-OFF ELECTRIC ACTUATOR		ON-OFF FAILSAFE ELECTRIC ACTUATOR	
Ordering code	CH3GCM2	CH3FCM2	CH3GCM2Fx*	CH3FCM2Fx*
Rated voltage	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)
Voltage range	AC 95-265V / DC 100-300V	AC 20-28 / DC 22-32V	AC 95-265V / DC 100-300V	AC 20-28 / DC 22-32V
Consumption	100 W	100 W	100 W	100 W
Peak current	6.25 A	6.25 A	6.25 A	6.25 A
Fuse	2 A	10 A	2 A	10 A
Maximum break Torque Nm	140 Nm		140 Nm	
Manual operation	Yes, by hexagonal wrench (supplied in clip) when no power is being applied Run time			
Run time	≈ 10 sec			
Operating frequency	AC not continuous, 75% duty cycle but recommend allowing ≥1 min between cycles. DC is continuous.			
Position confirmation	Mechanically driven dome style visual 2 color indicator			
Mounting restriction	None, it can be mounted at any angle. Leave space for manual operation and electrical connection.			
End position indication	Micro-switches operated by adjustable internal cams , set slightly ahead of the final motor stop position.			
ISO 5211	F05 & F07			
Working angle	Factory set at 90° ± 2°			
Female drive	17mm octagon x 21mm deep			
Ingress protection	IP67			
Max media temperature	≤ 80° C			
Ambient temperature	-20° C to 60° C			
Non-operating temperature	-40° C to 80° C			
Ambient humidity	5-95% RH non-condensing			
Housing	Plastic (ABS) cover			

***Note:** x=O Failsafe Valve Open; C Failsafe Valve Closed

DIMENSIONS MM





CH 4

200 N.m (1770 lb-in)

Available versions CH4 model

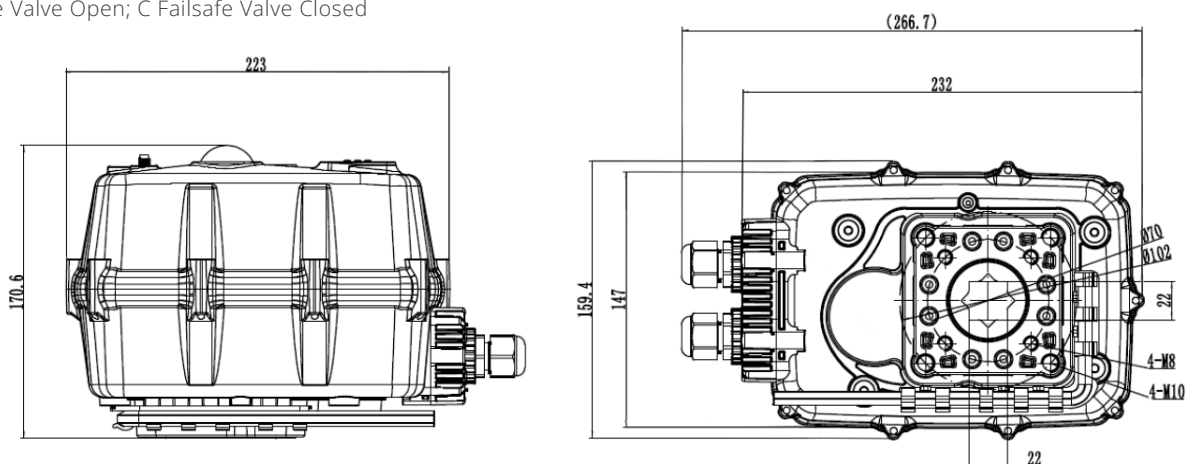
Part number	Voltage	Function	Torque	Torque (lb-in)
CH4FCM2	24VAC/DC	ON OFF	200 Nm	1770 lb-in
CH4GCM2	95-265VAC	ON OFF	200 Nm	1770 lb-in
CH4FCM2Fx	24VAC/DC	FAILSAFE	200 Nm	1770 lb-in
CH4GCM2Fx	95-265VAC	FAILSAFE	200 Nm	1770 lb-in
CH4GGM2	95-265VAC	4-20MA	200 Nm	1770 lb-in
CH4FGM2	24VAC/DC	4-20MA	200 Nm	1770 lb-in

TECHNICAL SPECIFICATION

	ON-OFF ELECTRIC ACTUATOR		ON-OFF FAILSAFE ELECTRIC ACTUATOR	
Ordering code	CH4GCM2	CH4FCM2	CH4GCM2Fx*	CH4FCM2Fx*
Rated voltage	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)
Voltage range	AC: 95-265V DC: 100-300V	AC: 18-26V DC: 22-28V	AC: 95-265V DC: 100-300V	AC: 18-26V DC: 22-28V
Consumption	120 W	120 W	150 W	150 W
Peak current	7.5 A	7.5 A	7.5 A	7.5 A
Fuse	10 A	10 A	10 A	10 A
Maximum break Torque Nm	240 Nm		240 Nm	
Manual operation	Yes, by hexagonal wrench (supplied in clip) when no power is being applied. Must engage declutch button on cover first.			
Run time	≈ 25 sec			
Operating frequency	Not continuous, allow ≥ 1 minute between cycles			
Position confirmation	Mechanically driven dome style visual 2 colour indicator			
Mounting restriction	Do not install underslung/upside down. Can install upright horizontally or vertically.			
End position indication	Micro-switches operated by adjustable internal cams , set slightly ahead of the final motor stop position.			
ISO 5211	F07 & F10			
Working angle	Factory set at 90° ± 2°, maximum angle of rotation 360° unless multi turn series.			
Female drive	22mm x 27mm deep			
Ingress protection	IP67			
Max media temperature	≤ 80° C			
Ambient temperature	-20° C to 60° C			
Non-operating temperature	-40° C to 80° C			
Ambient humidity	5-95% RH non-condensing			
Housing	Plastic (ABS) cover			

*Note: x=O Failsafe Valve Open; C Failsafe Valve Closed

DIMENSIONS MM





CH 5

400 N.m (3540 lb-in)

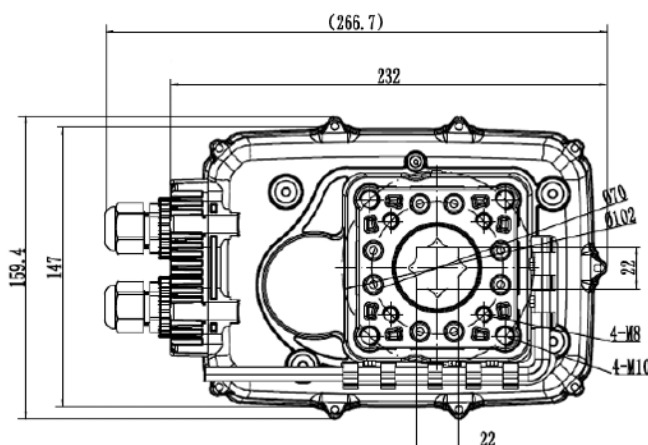
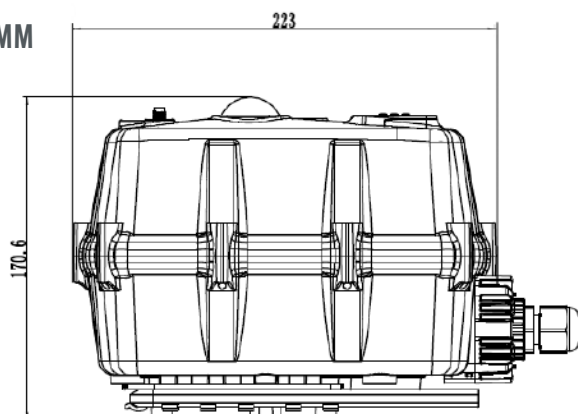
Available versions CH5 model

Part number	Voltage	Function	Torque	Torque (lb-in)
CH5FCM2	24VAC/DC	ON OFF	400 Nm	3540 lb-in
CH5GCM2	95-265VAC	ON OFF	400 Nm	3540 lb-in
CH5GGM2	95-265VAC	4-20MA	400 Nm	3540 lb-in
CH5FGM2	24VAC/DC	4-20MA	400 Nm	3540 lb-in

TECHNICAL SPECIFICATION

	ON-OFF ELECTRIC ACTUATOR		ON-OFF FAILSAFE ELECTRIC ACTUATOR	
Ordering code	CH5GCM2	CH5FCM2	NA	NA
Rated voltage	95-265VAC/DC (50/60Hz)	24VAC/DC (50/60Hz)		
Voltage range	AC: 95-265V DC: 100-300V	AC: 18-26V DC: 22-28V		
Consumption	150 W	150 W		
Peak current	9.3 A	9.3 A		
Fuse	15 A	15 A		
Maximum break Torque Nm	450 Nm			
Manual operation	Yes, by hexagonal wrench (supplied in clip) when no power is being applied. Must engage declutch button on cover first			
Run time	≈ 25 sec			
Operating frequency	Not continuous, allow ≥ 1 minute between cycles			
Position confirmation	Mechanically driven dome style visual 2 colour indicator			
Mounting restriction	Do not install underslung/upside down. Can install upright horizontally or vertically			
End position indication	Micro-switches operated by adjustable internal cams, set slightly ahead of the final motor stop position			
ISO 5211	F07 & F10			
Working angle	Factory set at 90° ± 2°, maximum angle of rotation 360° unless multi turn series			
Female drive	22mm x 27mm deep			
Ingress protection	IP67			
Max media temperature	≤ 80° C			
Ambient temperature	-20° C to 60° C			
Non-operating temperature	-40° C to 80° C			
Ambient humidity	5-95% RH non-condensing			
Housing	Plastic (ABS) cover			

DIMENSIONS MM

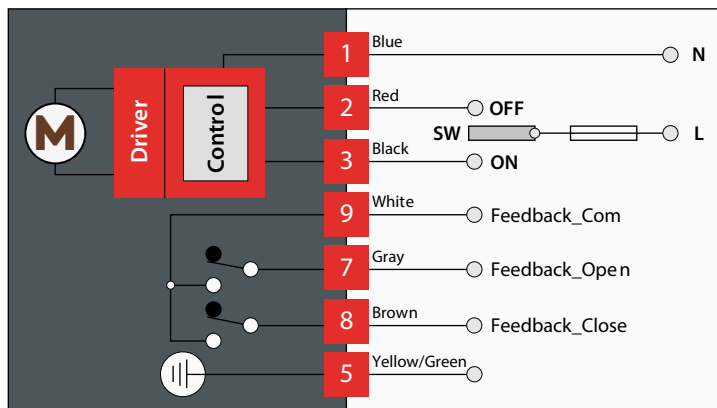




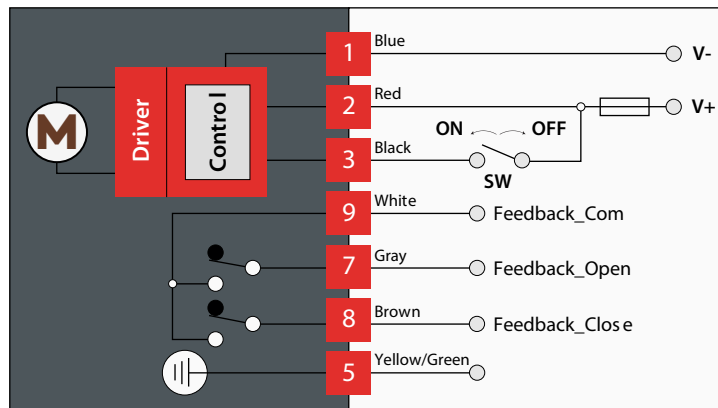
WIRING DIAGRAMS

On/Off models

2 wires



3 wires



VALVES COMBINATION

s.84 AM	code	size	ΔP	CH1 - 50Nm	CH2 - 80Nm	CH3 - 110Nm	CH4 - 200Nm	CH5 - 400Nm
	S84L00AM	2 1/2"	0 ÷ 15 Bar 0 ÷ 200 PSI	•				
	S84M00AM	3"				•		
	S84N00AM	4"					•	
	code	size	ΔP	CH1 - 50Nm	CH2 - 80Nm	CH3 - 110Nm	CH4 - 200Nm	CH5 - 400Nm
	S84L00AM	2 1/2"	15 ÷ 30 Bar 200 ÷ 450 PSI			•		
	S84M00AM	3"					•	
	S84N00AM	4"						•

s.95 AM	code	size	ΔP	CH1 - 50Nm	CH2 - 80Nm	CH3 - 110Nm	CH4 - 200Nm	CH5 - 400Nm
	S95L41AM	2 1/2"	0 ÷ 15 Bar 0 ÷ 200 PSI	•				
	S95M41AM	3"				•		
	S95N41AM	4"					•	
	code	size	ΔP	CH1 - 50Nm	CH2 - 80Nm	CH3 - 110Nm	CH4 - 200Nm	CH5 - 400Nm
	S95L41AM	2 1/2"	15 ÷ 30 Bar 200 ÷ 450 PSI			•		
	S95M41AM	3"					•	
	S95N41AM	4"						•

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ACTUATION

