

Multitrac



**Intelligent Electric Actuator
Valve Actuation and Process Automation Solutions**

Multitrac Technology and Product Range



ontracactuators.com

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1.0 OUR STORY

The Ontrac company traces its roots back to Hartmann & Braun where our story started. A successful actuation company, they were acquired by Asea Brown Boveri (**ABB**) in 1999. The following year, ABB launched the **Ontrac** product range.

In 2011 **ABB** Automation Product GmbH completed the transfer of its **Ontrac** advanced technology actuator product line to **Ontrac**, a now independent company.

Ontrac has now grown to become an international supplier of a range of high specification electric actuators.

With **Ontrac** Corporate headquarters in California and Sales & Service offices around the globe we are ideally placed to serve our customers.

The **Ontrac** product range has an unrivalled feature set suitable for applications across the whole market



Our Multitrac actuator has been used successfully on a global scale in many applications where accurate, robustness and data collection are important including –

- Power Generation
- Iron and steel
- Oil & Gas
- Chemical
- Cement
- Water & Waste Treatment
- Food & Beverage

2.0 INTRODUCTION

The Multitrac Modular range provides Linear, Part-Turn and Multi-Turn versions across a large torque and thrust range. Non-intrusive setup with control knob or IR input and variable speed output drive feature as standard. With our variable frequency control technology, we are able to provide enhanced valve control, variable speed and torque and limit current draw.

A wide variety of options are available including explosion-proof, additional programmable switch Pac and split head control.

Like all Ontrac actuators it can be connected to both Smartrac for comprehensive data analysis and configuration and to our Ontrac Cloud for remote download of actuator parameters and technical information.

In this basic configuration it can produce 1200 Nm of torque

Standard Maximum Configurations with Secondary Gearboxes

- Multi-Turn Torque up to 8100 Nm
- Part-Tum Torque up to 500,000 Nm
- Thrust up to 185 kN

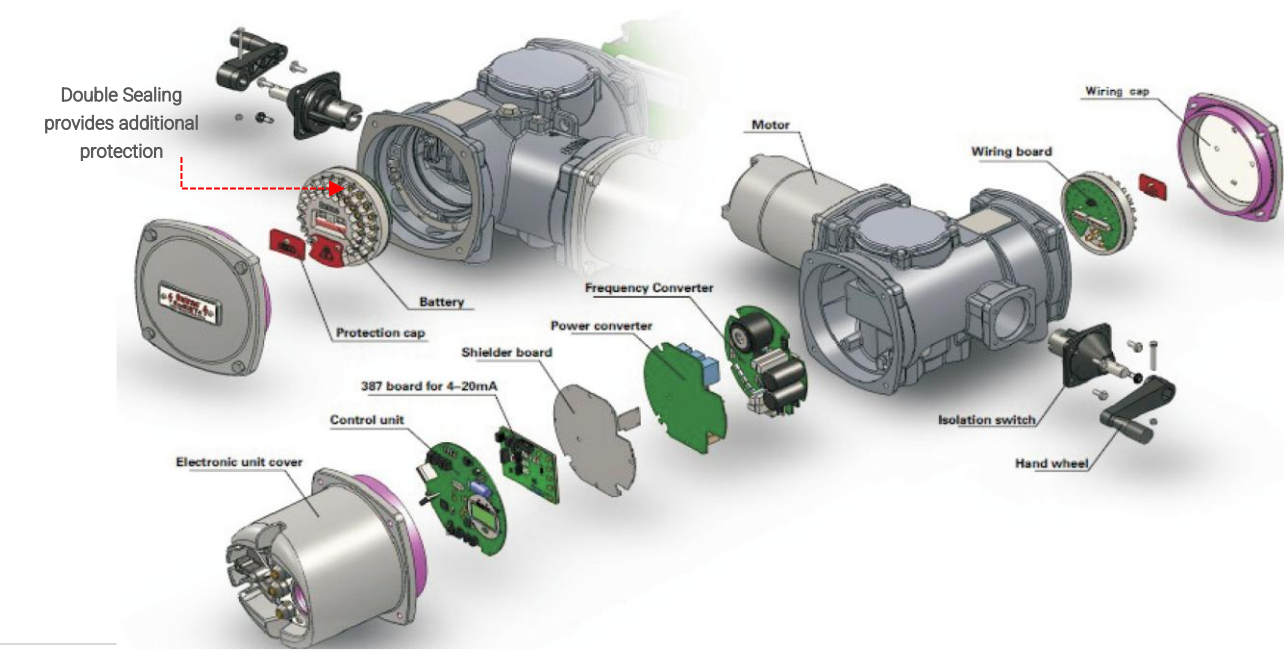
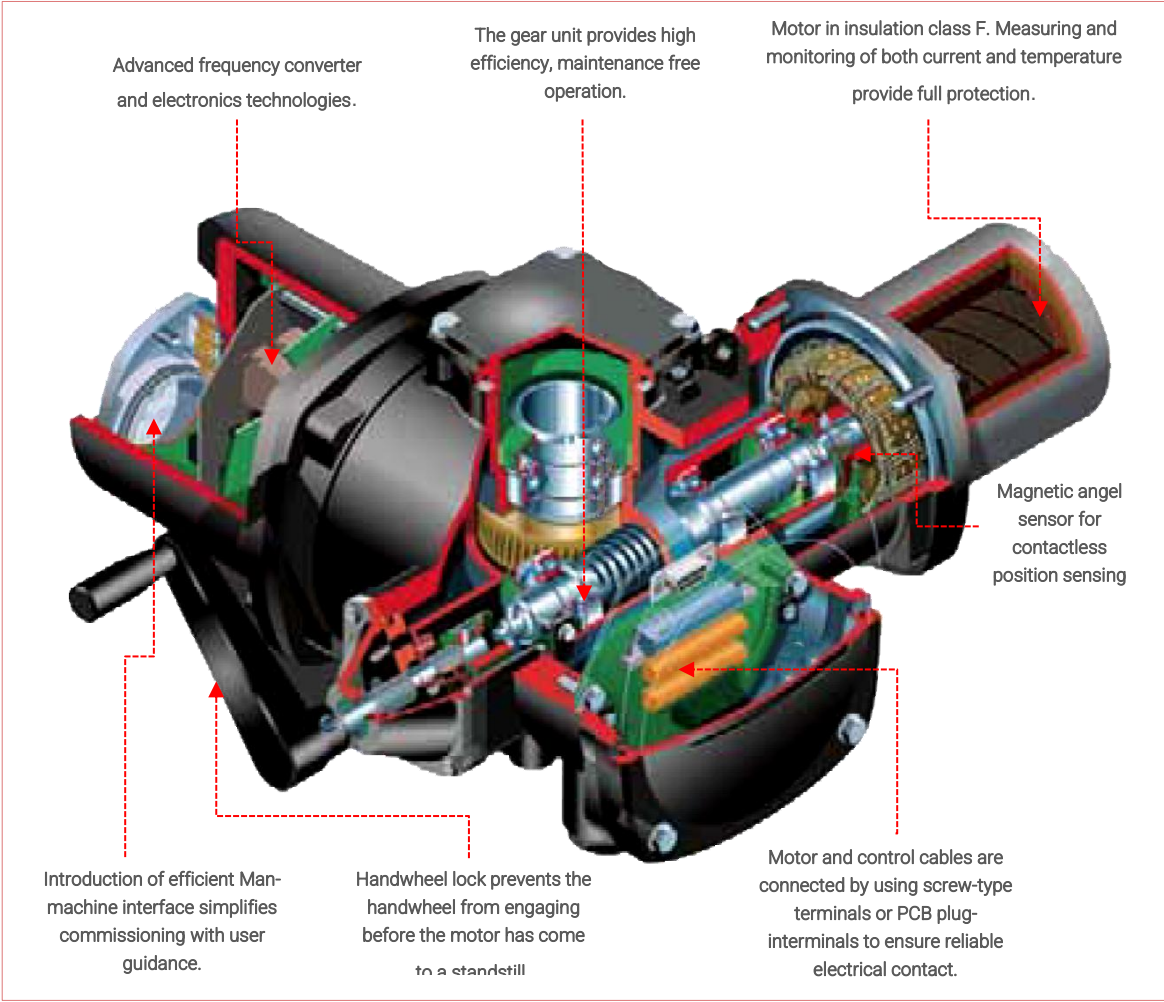
- The Ontrac Multitrac electric actuator is a sophisticated yet simple and robust multi-turn actuator.
- **The Multitrac MME (Multitrac Modulating Electric)** 800 range provides (S4-50%) modulating control.
- **The Multitrac MOE (Multitrac On/Off Electric)** 700 range provides (S2) on/off control.
- The base Multitrac range can produce from 6-1000 Nm torque. With the addition of Ontrac gearboxes and adaptors significant increases in torque and thrust are available.

ONTRAC FAMILY OF ACTUATORS						
	Multitrac			Easytrac		
	Linear	Multi-tum	Part-tum	Part-tum	Linear	Full-tum
Thrust/Torque	4.6 to 185 kN	6 to 8100 Nm	108 to 500000Nm	50 to 3000Nm	0~4000/0~6000N/0-10000N	≤100Nm
Travel/Turns	50 to 400mm	Unlimited	5 to 360 degrees	5 to 95 degrees	40mm	20 turns
Speed	0.6 to 12mm/s	7 to 180 rpm	5 to 180 sec	11 to 102 sec	0.4mm/S	7 rpm
☒ Metric Units ☐ Click for US units						

3.0 KEY FEATURES

- Explosion proof
 - Multitrac actuators are certified to ExdIIBT4 and ExdIICT4.
 - Non-Intrusive Setup
 - Actuators can be set up using control knobs or IR controller or with Smartrac control software.
 - Split/Remote Head Version
 - The Multitrac electronics, including starter circuitry can be detached and moved to a less harsh environment.
 - Modular Design
 - Utilizing a base multitrac unit with quarter turn and linear variants, the modular design allows for increased flexibility, stock ability and reduced spares.
 - Variable Frequency Drive
 - Allows complete and accurate valve control, increasing valve performance and decreasing wear on valve.
 - Data Logging
 - Provides detailed information for diagnosis and trending analysis of valve and actuator performance.
 - On/Off Modulation
 - Multitrac actuators come in S2 On/Off or S4-50% modulating configuration for both on/off and process control applications.
 - Ingress Protection
 - Allows submersion to 10m.
-

4.0 ACTUATOR CUT AWAY



5.0 CLOUDTRAC ASSET MANAGEMENT

The **Ontrac** Cloud allows you complete global access to our actuator database to provide specific as built technical details and parameters without the use of special tools or proprietary software. Every **Ontrac** actuator comes with a permanent QR code attached. Externally simply scanning the QR (Quick Response) code on your actuator from your phone connects you to **Cloudtrac**. Our database provides access to the specific information for your actuator.

You will then be able to download instruction and data sheets as well as your actuators specific wiring diagram. This simple aid to set up, commissioning and fault finding will save users considerable time and ensure the right connections are made.

Basic Information	
Product Type	MOE708
Serial Number	78114T1406697
Power Supply	AC380V
Manufacturing Date	2021-01-01
Duty Mode	S2
Speed	92rpm
Max. Switch-off Torque	50Nm

Option	
Enclosure Protection	IP68
Split Type	Yes
Anti Condensation Heater	Yes
Documents	Attached

Electrical Control	
Input Signal	24VDC
Output Signal	4-20mA
Bus Protocol Type	Profibus
Voltage Input	30V DC
Voltage Output	30V DC

Wiring Diagram Download	
Wiring Diagram	No. 781232T2114841

6.0 SMARTRAC

Smartrac is our PC based system for digitally communicating directly to our actuators. It will provide you with an Engineer level access to all of the settings and data that your actuator contains.

Smartrac requires a standard PC (Windows 10 or above) and a dedicated RS486 standard cable to connect to the actuator.

Features include:

- Settings – actuator settings can be saved, uploaded or downloaded to the actuator
- Ports – serial communication ports can be configured and allocated
- Operate – the actuator can be operated to set the running times, valve positions and stroke and facilitate fault finding.
- Configure – parameters can be set including; control modes, analogue settings, indications, speed and torque, limit switches and ports.
- Diagnosis – comprehensive alarm and failure logs and historic data logs are all accessible.

7.0 SERIAL COMMUNICATIONS

Serial communications allows for a much greater bandwidth and more information transfer capability than traditional 4 – 20 mA signaling. **Ontrac** produces a wide range of serial communication options through the use of an optional communications board. The communications cards are fitted internally to the actuator.

These include:

7.1 PROFIBUS:

Ontrac offers Profibus DP (Decentralised Peripherals) up to a baud rate of 1.5Mbit/s. Our actuators are supplied with active bus termination. The electrical connections are via RS485 type A.

7.2 MODBUS:

Ontrac offers Modbus RTU protocol communications at a baud rate up to 38.4kbits/s. Our factory default speed is 9.6kbits/s giving a 1.5km maximum distance between nodes. We use a master / slave query response polling cycle with CRC (Cyclic Redundancy Check).

7.3 HART:

Ontrac can provide HART Communication Protocol (Highway Addressable Remote Transducer) connectivity. HART allows use of conventional 4 – 20 mA wiring.

7.4 FOUNDATION FIELDBUS

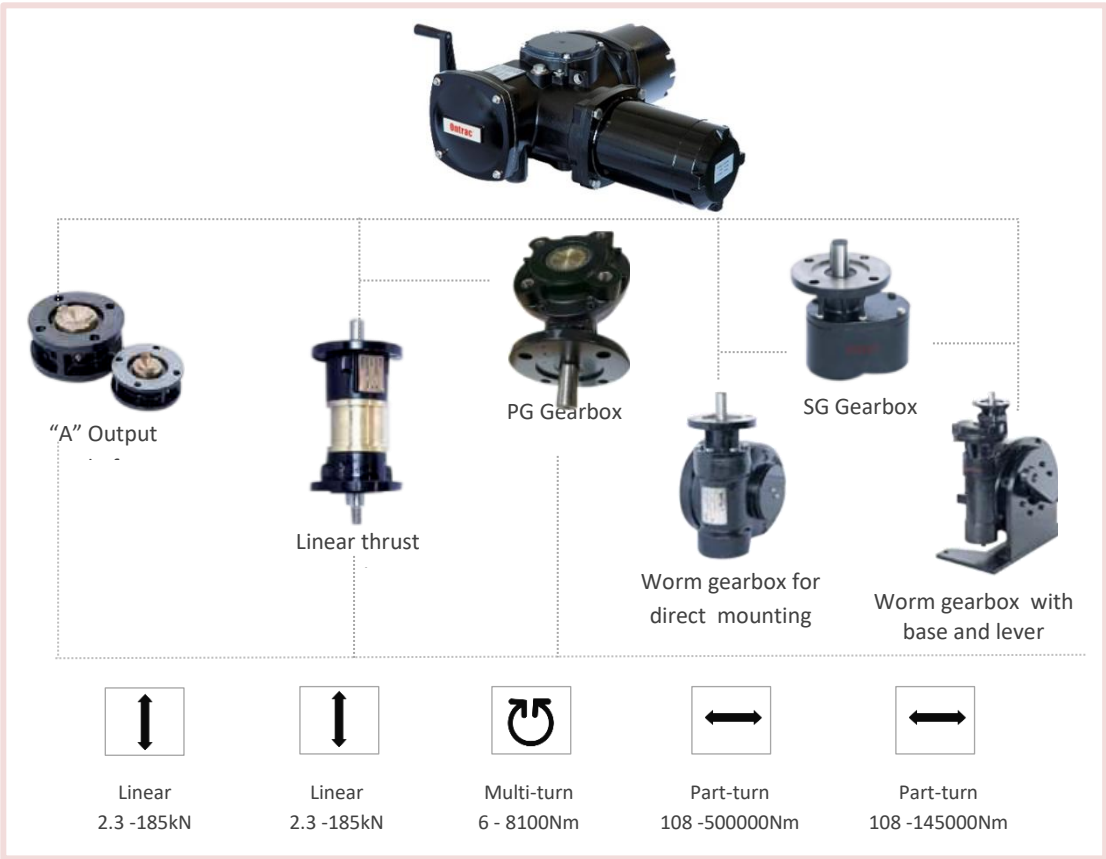
Ontrac offers a Foundation Fieldbus card designed for use on communications bus operating at 31.25 Kbit/s.

7.5 Ethernet

Ontrac offers a Ethernet, via a standard RJ45 interface, allowing connection to host systems or controllers. Using the Modbus TCP protocol, users can remotely monitor, configure parameters

8.0 PERFORMANCE TABLES

8.1 MULTITRAC FAMILY



The Multitrac family of products comprises the Multitrac multiturn actuator plus multiturn (PG or PGZ) gearboxes and part turn gearboxes (ASNG or SG+ASNG) for a variety of multiturn and part turn outputs.

Also available is our linear thrust unit for conversion to a linear output as well as a output shaft drive for accepting rotary rising stem linear output.

A range of worm gearboxes is also available for valve and damper applications. This information allows for correct actuator selection.

8.1.1 MULTI-TURN ELECTRIC ACTUATORS (MME & MOE)

8.1.1.1 MULTI-TURN MODULATING, ELECTRIC ACTUATORS (MME)

The following tables provide details of all of our standard offerings. Running current and recommended fuse ratings (3-Phase, 50Hz) are also given.

The tables are presented by output type (rotary, part turn and linear) and by modulation (on/off and modulating) The values generated in the table below are based on 3-Phase, 380VAC, 50Hz applications.

MULTI-TURN ACTUATORS (MODULATING)									
Combination	Tripping Torque (nm)	Switch-Off Torque (nm)	Speed (r.p.m)	Rising Valve Stem (mm)	Flange (ISO5210)	Power (kw)	Current (A)	Fuse (A)	Weight (kg)
MME806	25	20...50	14-35	38	F10	0.24	0.41	3×16A	24
MME808	40	32...80	14-35	38	F10	0.48	0.81	3×16A	24
MME812	75	60...150	14-35	38	F10	0.85	1.43	3×16A	29
MME825	150	120...300	14-35	55	F14	1.71	2.89	3×16A	39
MME850	300	240...600	14-35	55	F14	2.72	4.59	3×16A	41
MME890	500	400...1000	13-32	68	F16	6.7	11.31	3×25A	63

8.1.1.2 MULTI-TURN ON-OFF, ELECTRIC ACTUATORS (MOE)

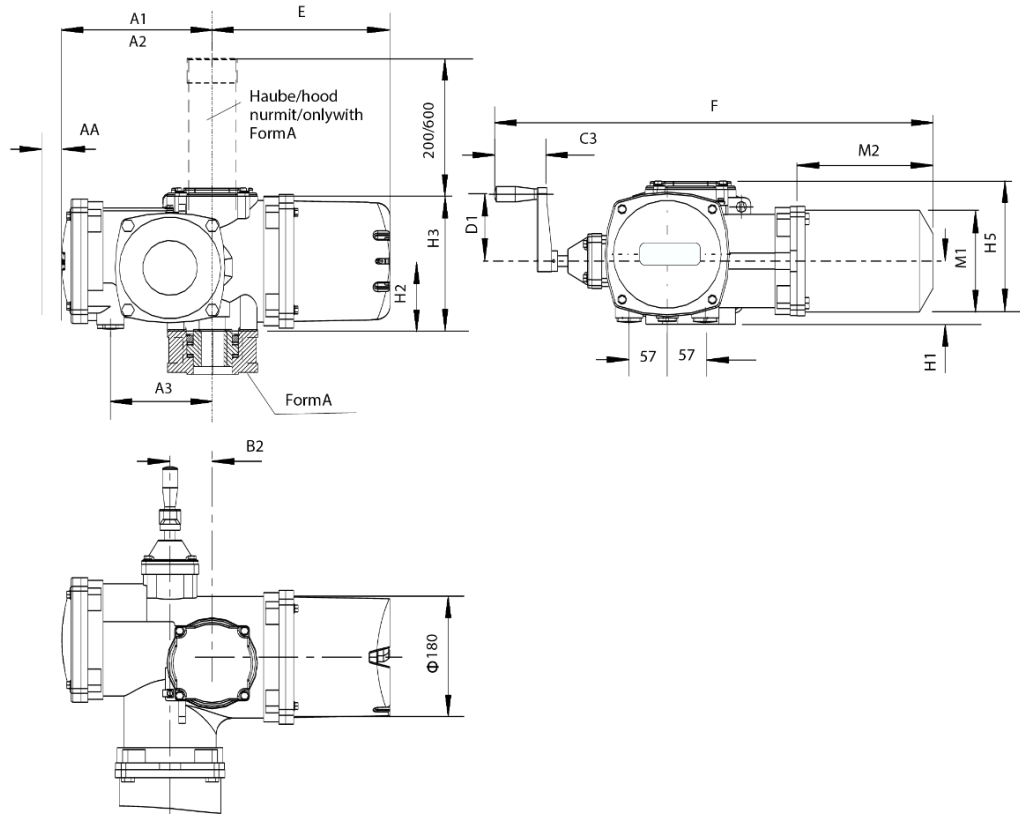
MULTI-TURN ACTUATORS (ON-OFF)								
Combination	Switch-Off Torque (nm)	Max. Speed (r.p.m)	Rising Valve Stem (mm)	Flange (ISO5210)	Power (kw)	Current (A)	Fuse (A)	Weight (kg)
MOE706S	6...15	72-180	38	F10	0.5	0.84	3×16A	24
MOE706R	10...25	37-95 64-160	38	F10	0.5	0.84	3×16A	24
MOE706M	25...50	14-35	38	F10	0.24	0.41	3×16A	24
MOE708S	12...30	72-180	38	F10	1.0	1.69	3×16A	24
MOE708R	20...50	37-95 64-160	38	F10	1.0	1.69	3×16A	24
MOE708M	32...80	14-35	38	F10	0.48	0.81	3×16A	24
MOE712S	24...60	72-180	38	F10	1.76	2.97	3×16A	29
MOE712R	40...100 36...90	37-95 64-160	38	F10	1.76	2.97	3×16A	29
MOE712M	60...150	14-35	38	F10	0.85	1.43	3×16A	29
MOE725S	50...125	72-180	55	F14	3.52	5.94	3×16A	39
MOE725R	80...200	37-95 56-140	55	F14	3.52	5.94	3×16A	39
MOE725M	120...300	14-35	55	F14	1.71	2.89	3×16A	39
MOE750R	120...300	37-95 56-140	55	F14	4.10	6.92	3×16A	41
MOE750P	160...400	29-72	55	F14	4.10	6.92	3×16A	41
MOE750M	240...600	14-35	55	F14	2.72	4.59	3×16A	41
MOE790P	320...800	24-60	68	F16	11.0	18.57	3×25A	63
MOE790R	200...500 220...550	37-95 62-156	68	F16	11.0	18.57	3×25A	63
MOE790M	400...1000	13-32	68	F16	6.7	11.31	3×25A	63
MOE790RL	280...700 232...580	37-95 62-156	68	F16	14.70	24.82	3×25A	63
MOE790PL	400...1000	24-60	68	F16	14.70	24.82	3×25A	63

Note 1 All actuators are self-locking except MOE7...S.

Note 2 Switch-off torque 10% variations due to mechanical efficiency alteration, 40% to 100% adjustable.

8.1.1.3 MME/MOE DIMENSIONS

The Multitrac actuator range comes in three frame sizes as highlighted in the table below



	SIZE 1			SIZE 2		SIZE 3
	MME 806	MME 808	MME 812	MME 825	MME 850	MME 890
	MOE 706	MOE 708	MOE 712	MOE 725	MOE 750	MOE 790
ISO 5210	F10	F10	F10	F14	F14	F16
A1	207	207	207	226	226	244
A2	235	235	235	254	254	273
A3	133	133	133	152	152	176
AA	40	40	40	40	40	40
B2	50	50	50	63	63	80
D1	R60	R60	R60	R100	R100	R100
E	258	258	258	271	271	350
F	543	563	622	676	693	825.5
H1	94.5	94.5	94.5	94.5	94.5	104.5
H2	94.5	94.5	94.5	94.5	94.5	104.5
H3	202	202	202	202	202	212
H5	214	214	214	214	214	215
M1	$\Phi 123$	$\Phi 123$	$\Phi 123$	$\Phi 142$	$\Phi 159$	$\Phi 178$
M2	148	148	207	220	220	260
WEIGHT KG	19.5	20.5	22	32	40	63

8.1.2 MME/MOE WITH MULTI-TURN GEARBOX

8.1.2.1 MME WITH PG GEARBOX

MULTI-TURN ACTUATORS (MODULATING) WITH GEARBOX									
Combination	Tripping Torque (nm)	Switch-Off Torque (nm)	Speed (r.p.m)	Rising Valve Stem (mm)	Flange (ISO5210)	Power (kw)	Current (A)	Fuse (A)	Weight (kg)
MME808+PG80/4S-1	136	109...272	3.52-8.8	41.8	F12/F14	0.48	0.81	3×16A	36
MME808+PG80/6S-2	200	160...400	2.32-5.8	41.8	F12/F14	0.48	0.81	3×16A	36
MME812+PG80/6S-2	255	204...510	3.52-8.8	48.1	F14/F16	0.85	1.43	3×16A	47
MME812+PGZ/3-1	375	300...750	2.32-5.8	54	F16/F25	0.85	1.43	3×16A	81
MME825+PGZ/3-1	750	600...1500	2.32-5.8	54	F16/F25	1.71	2.89	3×16A	81
MME850+PGZ/4-1	1020	816...2040	3.52-8.8	60.32	F25/F30-1	2.72	4.59	3×16A	115
MME850+PGZ/6-1	1500	1200...3000	2.32-5.8	82.55	F30/F35	2.72	4.59	3×16A	196
MME890+PGZ/8-1	2550	2040...5100	2.32-5.8	95.22	F30/F35/F40	6.7	11.31	3×25A	356

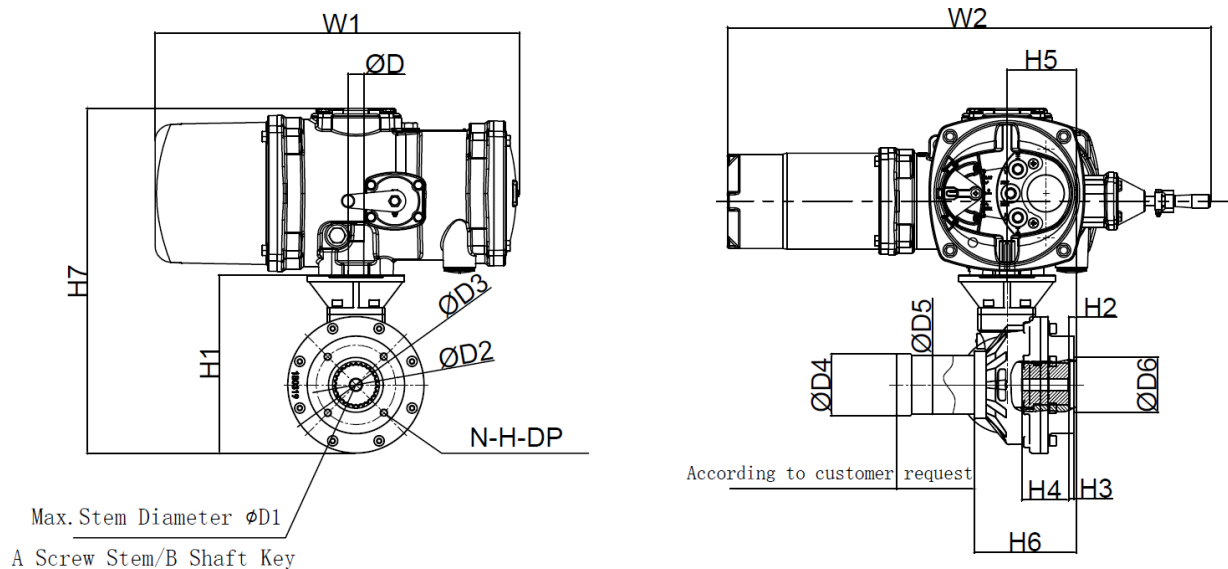
8.1.2.2 MOE WITH PG GEARBOX

MULTI-TURN ACTUATORS (ON-OFF) WITH GEARBOX								
Combination	Switch-Off Torque (nm)	Speed (r.p.m)	Rising Valve Stem (mm)	Flange (ISO5210)	Power (kw)	Current (A)	Fuse (A)	Weight (kg)
MOE708S+PG80/4S-1	41...102	20-50	41.8	F12/F14	1.0	1.69	3×16A	36
MOE708R+PG80/4S-1	68...170	10-25	41.8	F12/F14	1.0	1.69	3×16A	36
MOE708M+PG80/4S-1	109...272	3.8-9.5	41.8	F12/F14	0.48	0.81	3×16A	36
MOE712S+PG80/4S-1	82...204	20-50	41.8	F12/F14	1.76	2.97	3×16A	41
MOE708R+PG80/6S-1	100...250	6.6-16.67	41.8	F12/F14	1.0	1.69	3×16A	36
MOE708M+PG80/6S-2	160...400	2.5-6.3	48.1	F14/F16	0.48	0.81	3×16A	42
MOE712R+PG80/4S-2	136...340	10-25	48.1	F14/F16	1.76	2.97	3×16A	47
MOE712M+PG80/4S-2	204...510	3.8-9.5	48.1	F14/F16	0.85	1.43	3×16A	47
MOE712R+PG80/6S-2	200...500	6.6-16.67	48.1	F14/F16	1.76	2.97	3×16A	47
MOE725S+PG80/4S-2	170...425	20-50	48.1	F14/F16	3.52	5.94	3×16A	57
MOE712M+PGZ/3-1	300...750	2.5-6.3	54	F16/F25	0.85	1.43	3×16A	71
MOE725S+PGZ/3-1	250...625	13.3-33.33	54	F14/F16	3.52	5.94	3×16A	81
MOE725R+PGZ/3-1	272...680	6.6-16.67	54	F14/F16	3.52	5.94	3×16A	81
MOE725R+PGZ/3-1	400...1000	6-15.33	54	F16/F25	3.52	5.94	3×16A	81
MOE750R+PGZ/3-1 (4:1)	408...1130	9.2-39	54	F16/F25	4.10	6.92	3×16A	83
MOE750P+PGZ/3-1 (4:1)	544...1360	7.2-18	54	F16/F25	4.10	6.92	3×16A	83
MOE750R+PGZ/4-1 (6:1)	600...1600	6-26	54	F16/F25	4.10	6.92	3×16A	115
MOE750P+PGZ/4-1 (6:1)	800...2000	4.8-12	54	F16/F25	4.10	6.92	3×16A	115
MOE790P+PGZ/6-1	1480...3700	4-10	60.32	F25/F30	11.0	18.57	3×25A	218
MOE790PL+PGZ/8-1	3240...8100	2.18-5.45	82.55	F30/F35	14.7	24.82	3×25A	356

Note 1 All actuators are self-locking except MOE7...S.

Note 2 Switch-off torque 10% variations due to mechanical efficiency alteration, 40% to 100% adjustable.

8.1.2.3 MME/MOE WITH MULTI-TURN GEARBOX DIMENSIONS



SIZE1																	
Model	MME808+PG80/4S-1 MOE708S+PG80/4S-1 MOE708R+PG80/4S-1 MOE708M+PG80/4S-1 MOE708R+PG80/6S-1			MME808+PG80/6S-2 MOE708M+PG80/6S-2				MME812+PG80/6S-2 MOE712R+PG80/4S-2 MOE712M+PG80/4S-2 MOE712R+PG80/6S-2				MME812+PGZ/3-1 MOE712M+PGZ/3-1				MME825+PGZ/3-1 MOE725S+PGZ/3-1 MOE725R+PGZ/3-1 MOE725R+PGZ/3-1	
Input ISO5210	F10			F10				F10				F10				F14	
Output ISO5210	F10	F12	F14	F10	F12	F14	F16	F10	F12	F14	F16	F12	F14	F16	F25	F16	F25
D(mm)	20			20				20				20				30	
D1(A/B)	41.8/32			48.1/40				48.1/40				54/45				54/45	
D2(mm)	102	125	140	102	125	140	165	102	125	140	165	125	140	165	254	165	254
D3(mm)	175			210				210				300				300	
D4(mm)	79			79				79				79				79	
D5(mm)	76			76				76				76				76	
D6(mm)	70	85	100	70	85	100	130	70	85	100	130	85	100	130	200	130	200
H1(mm)	228.5			270				270				377				377	
H2(mm)	10	2	2	10		3		10		3		19		3		4	
H3(mm)	3			3				3				3		4		3	
H4(mm)	60			67				67				84				84	
H5(mm)	89	81	81	91		84		91		84		127		111		111	
H6(mm)	131	123	123	140		133		140		133		185		169		169	
N-H-DP	4-M10-15	4-M12-18	4-M16-24	4-M10-15	4-M12-18	4-M16-24	4-M20-30	4-M10-15	4-M12-18	4-M16-24	4-M20-30	4-M12-18	4-M16-24	4-M20-30	8-M16-24	4-M20-30	8-M16-24
H7(mm)	442.5			484				484				591				591	
W2(mm)	563			563				622				622				677	
W1(mm)	465			465				465				465				497	

	SIZE2									SIZE3								
Model	MME825+PGZ/3-1 MOE725S+PGZ/3-1 MOE725R+PGZ/3-1 MOE725R+PGZ/3-1			MME850+PGZ/4-1 MOE750R+PGZ/4-1 (6:1) MOE750P+PGZ/4-1 (6:1)			MME850+PGZ/6-1			MOE790P+PGZ/6-1			MME890+PGZ/8-1			MME890L+PGZ/8-1 MOE790PL+PGZ/8-1		
Input ISO5210	F14			F14			F14			F16			F16			F16		
Output ISO5210	F16	F25		F16	F25	F30	F25	F30	F35	F25	F30	F35	F30	F35	F40	F30	F35	F40
D(mm)	30			30			30			40			40			40		
D1(A/B)	54/45			60.32/55			82.55/70			82.55/70			95.25/85			95.25/85		
D2(mm)	165	254		165	254	298	254	298	356	254	298	356	298	356	406	298	356	406
D3(mm)	300			350			415			415			475			475		
D4(mm)	79			119			119			119			119			119		
D5(mm)	76			114			114			114			114			114		
D6(mm)	130	200		130	200	230	200	230	260	200	230	260	230	260	300	230	260	300
H1(mm)	377			444			535.5			535.5			647.5			647.5		
H2(mm)	4			31	31	3	15	15	3	15	3	3	36	36	39	36	36	39
H3(mm)	3			4			5			5			5	5	8	5	5	8
H4(mm)	84			117			164			164			180			180		
H5(mm)	111			165	137	137	172	160	160	172	160	160	201	201	204	201	201	204
H6(mm)	169			240	212	212	272	260	260	272	260	260	354	354	357	354	354	357
N-H-DP	4-M20-30	8-M16-24		4-M20-30	8-M16-24	8-M20-30	8-M16-24	8-M20-30	8-M30-45	8-M16-24	8-M20-30	8-M30-45	8-M20-30	8-M30-45	8-M36-54	8-M20-30	8-M30-45	8-M36-54
H7(mm)	591			658			749.5			750.5			862.5			862.5		
W2(mm)	677			677			677			825.5			825.5			843.5		
W1(mm)	497			497			497			594			594			594		

8.1.3 MME/MOE WITH PART-TURN GEARBOX

8.1.3.1 MME WITH ASNG GEARBOX

PART-TURN ACTUATORS (MODULATING)					
Combination	Modulating Torque	Max Switch-off Torque	Minimum Switch-off Torque	Full Travel Time(s)	Weight(kg)
	Unit: Nm				
MME806+ASNG50/D	248	495	198	19-26.6	60
MME808+ASNG50/D	400	800	320	26-36.4	60
MME808+ASNG100/D	840	1680	672	30-42	60
MME808+ASNG200/D	850	1700	680	56-78.4	60
MME808+SG65/2+ASNG300/D (129:1)	1290	2580	1032	55-77	86
MME812+ASNG300/D	1500	3000	1200	30-42	81
MME808+SG65/2+ASNG600/D (216:1)	2160	4320	1728	92-128.8	117
MME812+SG65/2+ASNG600/D (132:1)	2475	4950	1980	57-79.8	122
MME808+SG65/2+ASNG600/D (284:1)	2840	5680	2272	121-169.4	117
MME825+ASNG600/D	3150	6300	2520	30-42	122
MME812+SG65/2+ASNG600/D (216:1)	3500	7000	2800	92-128.8	122
MME850+ASNG1000/D	5400	10800	4320	26-36.4	198
MME825+SG65/3+ASNG1000/D (181:1)	6750	13500	5400	78-109.2	206
MME812+SG65/3+ASNG1000/D (310:1)	5800	11600	4640	133-186.2	196

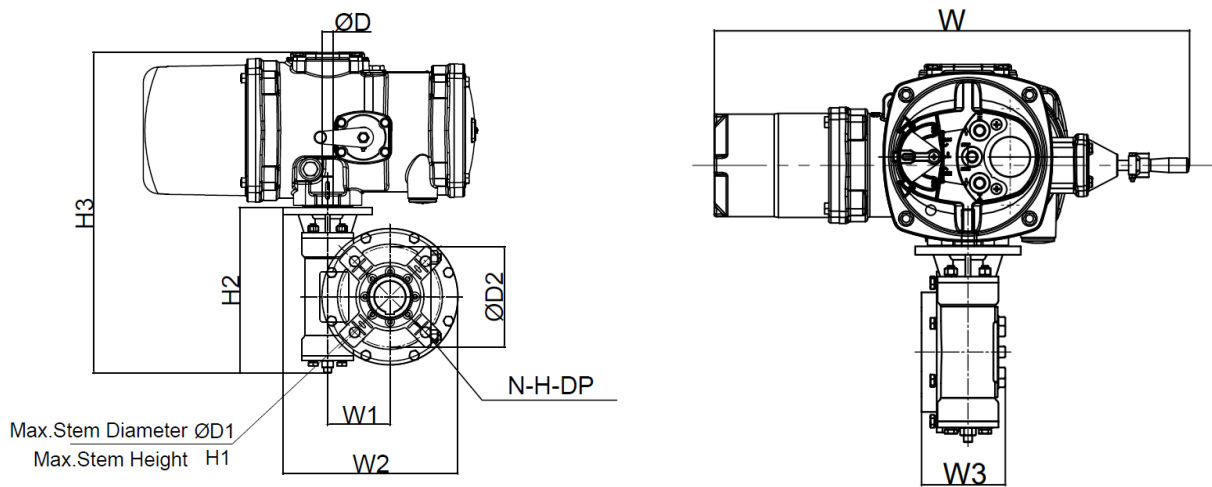
MME812+SG80/2+ASNG2000/D (420:1)	7875	15750	6300	180-252	319
MME825+SG80/2+ASNG2000/D (251:1)	9400	18800	7520	108-151.2	329
MME850+SG80/2+ASNG2000/D (113:1)	8475	16950	6780	48-67.2	331
MME890+ASNG2000/D	8700	17400	6960	26-36.4	343
MME850+SG80/2+ASNG3500/D (181:1)	13575	27150	10860	78-109.2	394
MME825+SG80/2+ASNG3500/D (310:1)	11625	23250	93	133-186.2	392
MME825+SG80/2+ASNG3500/D (420:1)	15750	31500	12600	180-252	392
MME850+SG80/2+ASNG3500/D (251:1)	18825	37650	15060	108-151.2	595
MME850+SG80/3+ASNG6500/D (304:1)	22800	45600	18290	130-182	595
MME850+SG80/3+ASNG6500/D (367:1)	27500	55000	22000	157-219.8	595
MME890+SG80/3+ASNG6500/D (304:1)	32500	65000	26000	130-182	617
MME890L+SG80/6+ASNG13500/D (419:1)	50000	100000	40000	180-252	1111

PART-TURN ACTUATORS (ON-OFF)				
Combination	Max. Switch-off Toruque (Nm)	Min. Switch-off Toruque (Nm)	Full Travel Time(s)	Weight(kg)
MOE708M+ASNG100/D	1600	672	26.8-37.6	49
MOE712S+ASNG100/D	1200	480	5.1-7.1	54
MOE708R+ASNG100/D	1000	400	10.2-14.28	49
MOE708R+ASNG200/D	1550	620	19.65-27.5	62
MOE712R+ASNG300/D	2000	800	10-14	73
MOE712M+ASNG300/D	3000	1200	26.45-37	73
MOE725S+ASNG300/D	2500	1000	5-7	83
MOE725R+ASNG300/D	4000	1600	10-14	83
MOE708S+SG65/2+ASNG300/D (210:1)	1500	600	15.75-22	78
MOE708R+SG65/2+ASNG300/D (275:1)	3300	1320	41.25-57.75	78
MOE708S+SG65/2+ASNG300/D (275:1)	1980	792	20.6-28.9	78
MOE712S+SG65/2+ASNG300/D (210:1)	3000	1200	16-22	83
MOE708R+SG65/2+ASNG600/D (353:1)	4400	1760	53-74	117
MOE712R+SG65/2+ASNG600/D (132:1)	3180	1272	19.8-37.7	122
MOE725R+ASNG600/D	4000	1600	10-14	126
MOE712M+SG65/2+ASNG600/D (132:1)	4770	1908	52.1-73	122
MOE725M+ASNG600/D	6000	2400	37.2-38.1	126
MOE708R+SG65/2+ASNG600/D (419:1)	5000	2000	62.9-88	117
MOE712S+SG65/2+ASNG600/D (419:1)	6000	2400	31.4-44	122
MOE725R+SG65/2+ASNG600/D (132:1)	6300	2520	19.8-27.7	132
MOE712R+SG65/2+ASNG1000/D (310:1)	7400	2960	46.5-65.1	175
MOE725S+SG65/2+ASNG1000/D (251:1)	7500	3000	18.8-26.4	185
MOE712R+SG65/2+ASNG1000/D (359:1)	8600	3440	53.9-75.4	175
MOE750M+ASNG1000/D	10000	4000	23.7-33.2	162
MOE712R+SG65/2+ASNG1000/D (420:1)	10000	4000	63-88.2	175
MOE725S+SG65/2+ASNG1000/D (420:1)	12500	5000	31.5-44.1	185
MOE725R+SG65/2+ASNG1000/D (359:1)	16000	6400	54-75.4	185
MOE712R+SG65/3+ASNG1000/D (669:1)	16000	6400	100.4-140.5	193
MOE712R+SG80/3+ASNG2000/D (1025:1)	23000	9200	154-216	337
MOE725R+SG80/3+ASNG2000/D (566:1)	27000	10800	85-119	329
MOE725R+SG80/3+ASNG3500/D (796:1)	38000	15200	120-168	409
MOE750R+SG80/2+ASNG3500/D (566:1)	40000	16000	61-85	394
MOE750R+SG80/2+ASNG6500/D (771:1)	45800	23360	74-104	595
MOE750P+SG80/2+ASNG6500/D (711:1)	65000	26000	149-208	595
MOE750R+SG80/5+ASNG6500/D (1364:1)	93900	37560	147-205	820
MOE790R+SG80/5+ASNG6500/D (869:1)	100000	40000	84-117	842
MOE750R+SG80/7+ASNG13500/D (1920:1)	138600	55440	206-288	1201
MOE790R+SG80/7+ASNG13500/D (1273:1)	140000	56000	123-171	1223

8.1.3.2 MOE WITH ASNG GEARBOX

PART-TURN ACTUATORS (ON-OFF)				
Combination	Max. Switch-off Torque (Nm)	Min. Switch-off Torque (Nm)	Full Travel Time (s)	Weight(kg)
MOE706S+ASNG50/D	255	102	4.35-6	40
MOE706R+ASNG50/D	425	170	8.7-12.2	40
MOE706M+ASNG50/D	850	340	23-32	40
MOE708R+ASNG50/D	850	340	8.7-12.2	40
MOE708S+ASNG50/D	510	204	4.35-6	40
MOE708M+ASNG50/D	1000	400	23-32	40

8.1.3.3 MME/MOE WITH PART-TURN GEARBOX DIMENSIONS



MME/MOE WITH PART-TURN GEARBOX DIMENSIONS													
Model	Input ISO521 0	Output ISO521 0	D mm	D1 mm	D2 mm	W1 mm	W2 mm	W3 mm	H1 mm	H2 mm	H3 mm	N-H-DP	W mm
MME806+ASNG50/D MOE706S+ASNG50/D MOE706R+ASNG50/D MOE706M+ASNG50 /D	F10	F10	15	43	102	87.5	245/ 270	99	82	231.5	445.5	4-M10-15	543
		F12			125							4-M12-18	
MME808+ASNG50/D MOE708R+ASNG50/D MOE708S+ASNG50/D MOE708M+ASNG50/D	F10	F10	15	43	102	87.5	245/ 270	99	82	231.5	445.5	4-M10-15	563
		F12			125							4-M12-18	
MME808+ASNG100/D MOE708M+ASNG100/D MOE708R+ASNG100/D	F10	F12	20	52	125	100	271.5/ 296.5	115	99	270.5	484.5	4-M12-18	563
		F14			140							4-M16-24	
		F16			165							4-M20-30	
MOE712S+ ASNG100/D	F10	F12	20	52	125	100	271.5/ 296.5	115	99	270.5	484.5	4-M12-18	622
		F14			140							4-M16-24	
		F16			165							4-M20-30	
MME808+ASNG200/D MOE708R+ASNG200/D	F10	F12	25	52	125	100	291/ 296.5	115	99	379.5/ 384.5	593.5/ 598.5	4-M12-18	563
		F14			140							4-M16-24	
		F16			165							4-M20-30	
MME808+SG65/2+ASNG 300/D (129:1) MOE708S+SG65/2+ASNG 300/D (210:1) MOE708R+SG65/2+ASNG 300/D (275:1) MOE708S+SG65/2+ASNG 300/D (275:1)	F10	F14	25	76	140	140	372.5/ 377.5	141	124	397.5	611.5	4-M16-24	563
		F16			165							4-M20-30	
MME812+ASNG300/D MOE712R+ASNG300/D MOE712M+ASNG300/D	F10	F14	20	76	140	140	352.5/ 377.5	141	124	365.5	579.5	4-M16-24	622
		F16			165							4-M20-30	
MOE725S+ASNG300/D MOE725R+ASNG300/D	F14	F14	20	76	140	140	352.5/ 377.5	141	124	365.5	579.5	4-M16-24	677
		F16			165							4-M20-30	

MOE712S+SG65/2+ASNG300/D (210:1)	F10	F14 F16	25	76	165 254	140	372.5/ 377.5	141	124	397.5	611.5	4-M16-24 4-M20-30	622
MME808+SG65/2+ASNG 600/D (216:1) MME808+SG65/2+ASNG 600/D (284:1)	F10	F16	25	87	165 254	164	422.5/ 428	156	137	503.5/5 12	717.5/ 726	4-M20-30 8-M16-24	563
MOE708R+SG65/2+ASNG600/D (353:1) MOE708R+SG65/2+ASNG600/D (419:1)	F10	F25	25	87	165 254	164	422.5/ 428	156	137	503.5/5 12	717.5/ 726	4-M20-30 8-M16-24	622
MME812+SG65/2+ASNG 600/D (132:1) MME812+SG65/2+ASNG 600/D (216:1) MOE712R+SG65/2+ASNG 600/D (132:1) MOE712M+SG65/2+ASNG 600/D (132:1) MOE712S+SG65/2+ASNG 600/D (419:1)	F10	F16 F25	25	87	165 254	164	422.5/ 428	156	137	503.5/5 12	717.5/ 726	4-M20-30 8-M16-24	622
MME825+ASNG600/D MOE725R+ASNG600/D MOE725M+ASNG600/D	F14	F16 F25	30	87	165 254	164	428	156	137	426.5	640.5	4-M20-30 8-M16-24	677
MME850+ASNG1000/D MOE750M+ASNG1000/D	F14	F25 F30	30	120	254 298	213	520.5/ 538	175	151	520.5	734.5/ 735.5	8-M16-24 8-M20-30	677
MME812+SG65/3+ASNG 1000/D (310:1) MOE712R+SG65/2+ASNG1000/D (310:1) MOE712R+SG65/2+ASNG1000/D (359:1) MOE712R+SG65/2+ASNG1000/D (420:1) MOE712R+SG65/3+ASNG1000/D (669:1)	F10	F25 F30	35	120	254 298	213	544	175	151	620.5	834.5/ 835.5	8-M16-24 8-M20-30	622
MME825+SG65/3+ASNG 1000/D (181:1) MOE725S+SG65/2+ASNG1000/D (251:1) MOE725S+SG65/2+ASNG1000/D (420:1) MOE725R+SG65/2+ASNG1000/D (359:1)	F14	F25 F30	35	120	254 298	213	544	175	151	620.5	834.5/ 835.5	8-M16-24 8-M20-30	677
MME812+SG80/2+ASNG 2000/D (420:1) MOE712R+SG80/3+ASNG2000/D (1025:1)	F10	F25 F30 F35	35	153	254 298 356	248. 5	616	222	194	679.5	893.5/ 894.5	8-M16-24 8-M20-30 8-M30-45	622
MME825+SG80/2+ASNG 2000/D (251:1) MOE725R+SG80/3+ASNG2000/D (566:1) MME850+SG80/2+ASNG 2000/D (113:1)	F14	F25 F30 F35	35	153	254 298 356	248. 5	616	222	194	679.5	893.5/ 894.5	8-M16-24 8-M20-30 8-M30-45	677
MME890+ASNG2000/D	F16	F25 F30 F35	35	153	254 298 356	248. 5	592.5/ 610	245	194	581.5	795.6/ 796.5	8-M16-24 8-M20-30 8-M30-45	825. 5
MME850+SG80/2+ASNG 3500/D (181:1) MME825+SG80/2+ASNG 3500/D (310:1) MME825+SG80/2+ASNG 3500/D (420:1) MME850+SG80/2+ASNG 3500/D (251:1) MOE725R+SG80/3+ASNG3500/D (796:1) MOE750R+SG80/2+ASNG3500/D (566:1)	F14	F30 F35 F40	35	170	298 356 406	284	680	231 256 256	203	733.5	947.5/ 948.5	8-M20-30 8-M30-45 8-M36-54	677
MME850+SG80/3+ASNG 6500/D (304:1) MME850+SG80/3+ASNG 6500/D (367:1) MOE750R+SG80/2+ASNG6500/D (771:1) MOE750P+SG80/2+ASNG6500/D (711:1) MOE750R+SG80/5+ASNG6500/D (1364:1)	F14	F35 F40	45	190	356 406	324	800	266 274	237	850	1064/ 1065	8-M30-45 8-M36-54	677
MME890+SG80/3+ASNG 6500/D (304:1) MOE790R+SG80/5+ASNG6500/D (869:1)	F16	F35 F40	45	190	356 406	324	800	266 274	237	850	1064/ 1065	8-M30-45 8-M36-54	825. 5
MME890L+SG80/6+ ASNG13500/D (419:1)	F16	F48	45	230	483	426	1003.5	336	290	1028	1243	12-M36- 54	843. 5
MOE750R+SG80/7+ ASNG13500/D (1920:1)	F14	F48	45	230	483	426	1003.5	336	290	1028	1243	12-M36- 54	825. 5
MOE790R+SG80/7+ASNG13500/D (1273:1)	F16	F48	45	230	483	426	1003.5	336	290	1028	1243	12-M36- 54	825. 5

8.1.4 MME/MOE WITH LINEAR

8.1.4.1 MME WITH LINEAR

LINEAR ACTUATOR (MODULATING)							
Combination	Modulating Force(N)	Switch-Off Force(N)	Factory Force Setting	40% Switch-off Force (N)	Full Speed	Max. Stroke (mm)	Weight (kg)
MME806+LE12.1	5768	11536	100%	4614	2.92mm/s	50/100/200/400/500	36
MME808+LE25.1	11536	23072	100%	9229	2.92mm/s	50/100/200/400/500	36
MME812+LE50.1	18749	37498	100%	14999	3.5mm/s	63/100/200/400	42
MME825+LE70.1	32051	64102	100%	25641	4.08mm/s	100/160/320/400	67.5
MME850+LE100.1	50000	100000	100%	41025	4.08mm/s	100/160/320/400	71
MME890+LE200.1	92391	184782	100%	73913	4.66mm/s	100/200/400/500	97

8.1.4.2 MOE WITH LINEAR

LINEAR ACTUATOR (ON-OFF)						
Combination	Switch-off force(N)	Factory Force Setting	40% Switch-off Force (N)	Full Speed	Max. Stroke (mm)	Weight (kg)
MOE706S+LE12.1	5768	100%	2307	15mm/s	50/100/200/400/500	36
MOE706R+LE12.1	9613	100%	3845	7.67mm/s	50/100/200/400/500	36
MOE706M+LE12.1	11536	100%	4614	2.92mm/s	50/100/200/400/500	36
MOE708S+LE12.1	11536	100%	4614	15mm/s	50/100/200/400/500	36
MOE708R+LE25.1	19227	100%	7691	7.67mm/s	50/100/200/400/500	36
MOE708M+LE25.1	23072	100%	9229	2.92mm/s	50/100/200/400/500	36
MOE712S+LE25.1	23072	100%	9229	15mm/s	50/100/200/400/500	41
MOE712R+LE50.1	31248	100%	12499	9.2mm/s	63/100/200/400	42
MOE712M+LE50.1	37498	100%	14999	3.5mm/s	63/100/200/400	42
MOE725R+LE70.1	51282	100%	20513	10.73mm/s	100/160/320/400	67.5
MOE725M+LE70.1	64102	100%	25641	4.08mm/s	100/160/320/400	67.5
MOE750R+LE70.1	69230	90%	30769	10.73mm/s	100/160/320/400	69.5
MOE750R+LE100.1	76922	100%	30769	10.73mm/s	100/160/320/400	71
MOE750P+LE100.1	100000	100%	41025	8.4mm/s	100/160/320/400	71
MOE790R+LE200.1	147826	100%	59130	8mm/s	100/200/400/500	97
MOE790M+LE200.1	184782	100%	73913	4.66mm/s	100/200/400/500	97

Note: The marked weight is the weight of the minimum stroke, and other strokes shall be subject to the actual weight

Note 1	For inside screw non-rising gate valve, factors will be multiplied by 1.5, and the sluice, factors be multiplied by 1.25, to ensure that the thrust 3 times larger than the weight of valve	
Note 2	Switch-off force and speed adjustable, from 40% to 100%, at 5% step.	
Note 3	Linear units are robust, entirely encapsulated unit.	
Note 4	If listed in the above tables do not meet your requirements, we can provide customized products	

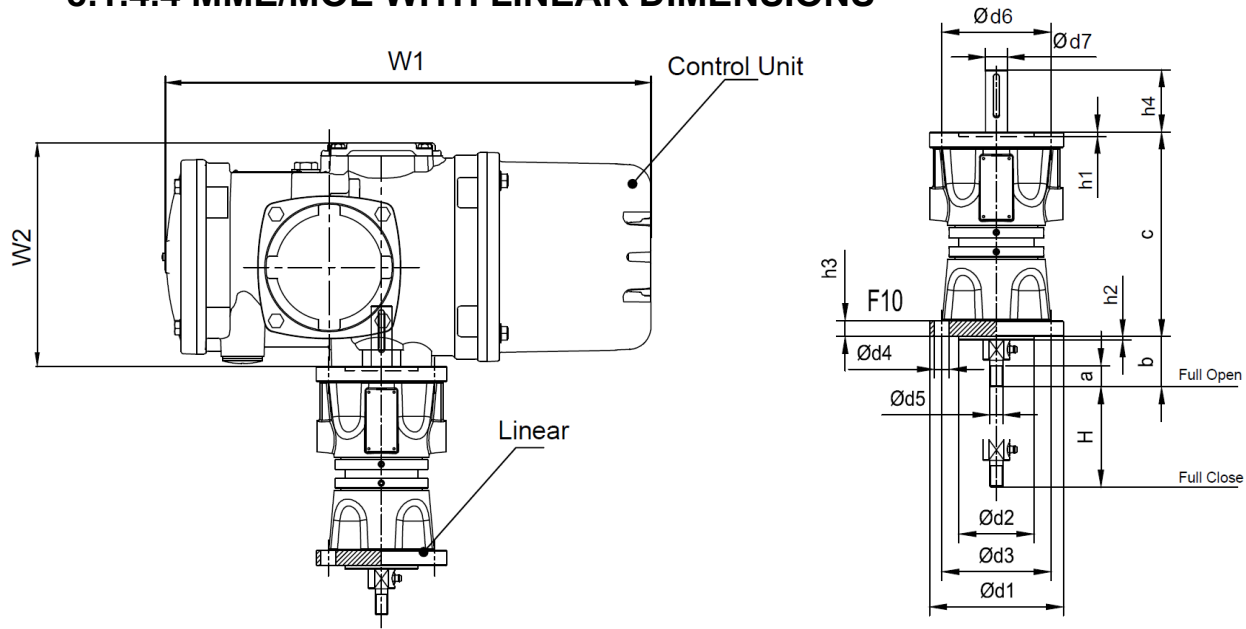
8.1.4.3 LINEAR RISING STEM APPLICATIONS

Equipped with "A" output shaft, actuator can drive valve rod to have a linear motion. All axial force is sustained by "A" output shaft. The following table is the transmission factor for stem trapezoidal thread.



VALVE TRANSMISSION FACTORS (OUTPUT TORQUE=AXIAL FORCES*FACTOR)							
Thread size	Factor	Thread size	Factor	Thread size	Factor	Thread size	Factor
Tr18×4	0.00190	Tr32×6	0.00323	Tr46×8	0.00457	Tr70×10	0.00666
Tr20×4	0.00205	Tr34×6	0.00339	Tr48×8	0.00472	Tr75×10	0.00704
Tr22×5	0.00234	Tr36×6	0.00354	Tr50×8	0.00487	Tr80×10	0.00741
Tr24×5	0.00250	Tr38×6	0.00369	Tr52×8	0.00502	Tr85×12	0.00806
Tr26×5	0.00265	Tr40×6	0.00384	Tr55×8	0.00525	Tr90×12	0.00844
Tr28×5	0.00279	Tr42×6	0.00399	Tr60×8	0.00563	Tr95×12	0.00882
Tr30×6	0.00309	Tr44×8	0.00441	Tr65×10	0.00628	Tr100×12	0.00920

8.1.4.4 MME/MOE WITH LINEAR DIMENSIONS



MME/MOE WITH LINEAR DIMENSIONS

Model	MME806+LE12.1 MOE706S+LE12.1 MOE706R+LE12.1 MOE706M+LE12.1 MOE708S+LE12.1	MME808+LE25.1 MOE708R+LE25.1 MOE708M+LE25.1 MOE712S+LE25.1	MME812+LE50.1 MOE712R+LE50.1 MOE712M+LE50.1	MME825+LE70.1 MOE725R+LE70.1 MOE725M+LE70.1 MOE750R+LE70.1	MME850+LE100.1 MOE750R+LE100.1 MOE750P+LE100.1	MME825+PG80/4+LE200.1 MOE725R+PG80/4+LE200.1 MOE725M+PG80/4+LE200.1
ISO 5210	F10	F10	F10	F14	F14	F16
a	20	25	30	55	55	65
b	47	52	57	78	78	94
c	191/241/341/541/641	191/241/341/541/641	234/296/421/571	293/373/533/613	293/373/533/613	356/456/656/756
Ød1	125	125	125	175	175	210
Ød2	70	70	70	100	100	130
Ød3	102	102	102	140	140	165
Ød4	11	11	11	18	18	22
Ød5	M12x1.25	M16x1.5	M20x1.5	M36x3	M36x3	M42x3
Ød6	102	102	102	140	140	165
Ød7	20	20	20	30	30	40
H	50/100/200/400/500	50/100/200/400/500	63/125/250/400	80/160/320/400	80/160/320/400	100/200/400/500
h1	4	4	4	5	5	5
h2	3	3	3	4	4	4
h3	15	15	15	18	18	25
h4	58	58	58	75	75	95
W1	465	465	465	497	497	497
W2	214	214	214	214	214	214

8.2 SUPPLY AND CONTROL VOLTAGES

Multitrac actuators can be supplied with either single or three phase power supplies.

Three phases:

$\leq 500 \pm 10\%$, 50/60 Hz $\pm 5\%$, 550/660VAC are optional

Single phase:

110/220V, $\pm 10\%$, 50/60Hz $\pm 5\%$

An internal power supply is also available for supplying conventional inputs and outputs

24V DC, max 40mA

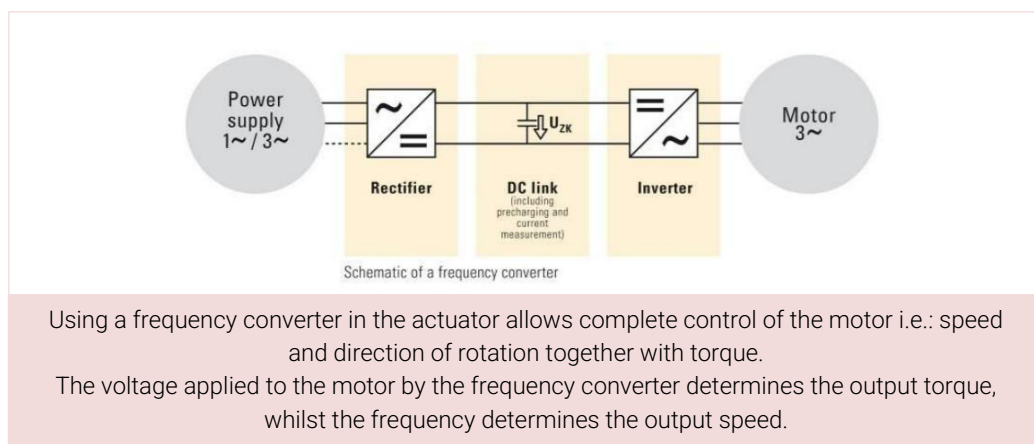
An external power supply can also be added to provide redundancy for signal electronics.

24V DC nominal, 18 – 33V, max 500mA

8.3 MOTOR CONTROL TYPE

All Multitrac actuators utilize a variable frequency drive. A variable frequency drive (VFD) is an electronic system used to control the speed (and torque) of AC induction motors. The VFD does this by using the voltage and frequency of the motor supply. Speed control is achieved by the variation of frequency. Torque control is achieved by varying the voltage.

We use robust pulse width modulation design to achieve this. Because of this sophistication we are able to control and change the rate of increase or decrease of motor speed and hence actuator output. This ultimately allows exact matching of valve and process requirements, saving energy, decreasing wear and eliminating process disruptions.



1. Valve Protection

Ontrac actuator moves to its end position at a fixed low speed, therefore over-torque is avoided due to the low kinetic energy of motor and gears.

2. High torque when it matters

Moderate blockages pose no problem for Ontrac. By running at low speed with high torque, the actuator is able to overcome valve blockage without risk of valve damage.

3. Planning flexibility

Sometimes during the planning stage, it is good to have a little free play in terms of output speed and torque - some things look different on site. adjustable speed & torque offers many possibilities for process optimization at a later stage.

4. Reduced spare-parts stock

The ability to configurable speed and cut-off torque means that the whole actuator range can be covered by a small number of variants. This simplifies stock keeping of spare actuators and Components.

5. Optimum position control

The positioner integrated in the Ontrac actuator utilizes the different speed control capability of the frequency converter: this means that large position changes result in high-speed correction, whereas small deviations are adjusted more slowly.

6. Automatic phase correction

The integrated rectifier works independently of the supply phase sequence and automatically corrects phase variation.

8.4 DUTY CYCLES

Multitrac Actuators can be provided in both ON/OFF and Modulating versions:			
ON/OFF	Duty cycle	S2	15 minutes
MODULATING	Duty cycle	S4	50% 1200 cycles/h

8.5 INGRESS PROTECTION CLASSES

Multitrac actuators provide a high level of enclosure protection.	
STANDARD	All Multitrac actuators are protected to IP67
OPTION	An enhanced version of Multitrac is available with IP 68, 2m for 24 hours
OPTIMUM	for added protection, IP 68, 10m for 72 hours is available.

8.6 TEMPERATURE CLASSES

Multitrac actuators are available in standard and low temperature format.	
STANDARD	
MOE ON/OFF	-25°C to +70°C
MME MODULATING	-25°C to + 60°C
SPLIT HEAD	-25°C to + 85°C
LOW TEMPERATURE	
MOE ON/OFF	-45°C to +70°C
MME MODULATING	-40°C to +60°C
SPLIT HEAD	-40°C to +85°C
LOW LOW TEMPERATURE	
MOE ON/OFF	-60°C to +70°C
MME MODULATING	-60°C to +60°C
SPLIT HEAD	-60°C to +85°C

8.7 HUMIDITY

The Multitrac actuator can operate in up to 100% humidity.

8.8 MOUNTING

The Multitrac actuator is very versatile and can be mounted in any orientation although due consideration should be given to center of gravity and forces particularly on valve stems and support metalwork.

The front controls cover can be rotated through 360 degrees to allow for the front display to be read for any mounting orientation.

9.0 EMC SPECIFICATION

All Ontrac actuators are compliant with EN IEC 61800 part 3 under directive 2004/108/EC for immunity to and emissions of electromagnetic fields.

10.0 COATING (PAINTING)

All Ontrac actuators are epoxy enamel coated as standard to ISO 12944-2. Our standard color is black to RAL 9005.

We are also able to provide enhanced paint protection in accordance with ISO 12944 C5-M (Marine) for offshore environments.

11.0 SEISMIC / VIBRATION STRENGTH

Multitrac actuators can withstand 0.75g acceleration from 5 to 200Hz frequency. Where vibration levels are expected to be higher than this, the Multitrac split head variant should be used.

12.0 VALVE / ACTUATOR INTERFACE

All multiturn and part turn multitrac have standard ISO 5210 and ISO 5211 metric flanges. See table in section 8.2 physical dimensions.

13.0 EXPLOSION PROOF CERTIFICATIONS

Multitrac actuators have an option for ATEX explosion proof certification in accordance with Ex d IICT4 Gb.

14.0 SAFETY INTEGRITY LEVEL CERTIFICATIONS

Multitrac actuators have an option for SIL2 & SIL3 Safety Integrity Level certification in accordance with EN61508:2010 (Part 1-7)

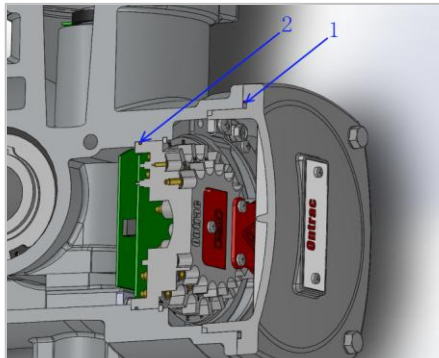
15.0 REACH and RoHS CERTIFICATIONS

REACH -Screening of 235 Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) based on regulation (EC) No 1907/2006

RoHS-Verification of RoHS (Restriction of Hazardous Substances) directive 2011/65/EU and its amendment (EU) 2015/863

16.0 DOUBLE SEALING

Multitrac provides an option for double sealing for even more protection against ingress. Two seals are provided which gives additional protection when the actuator terminal compartment is open.



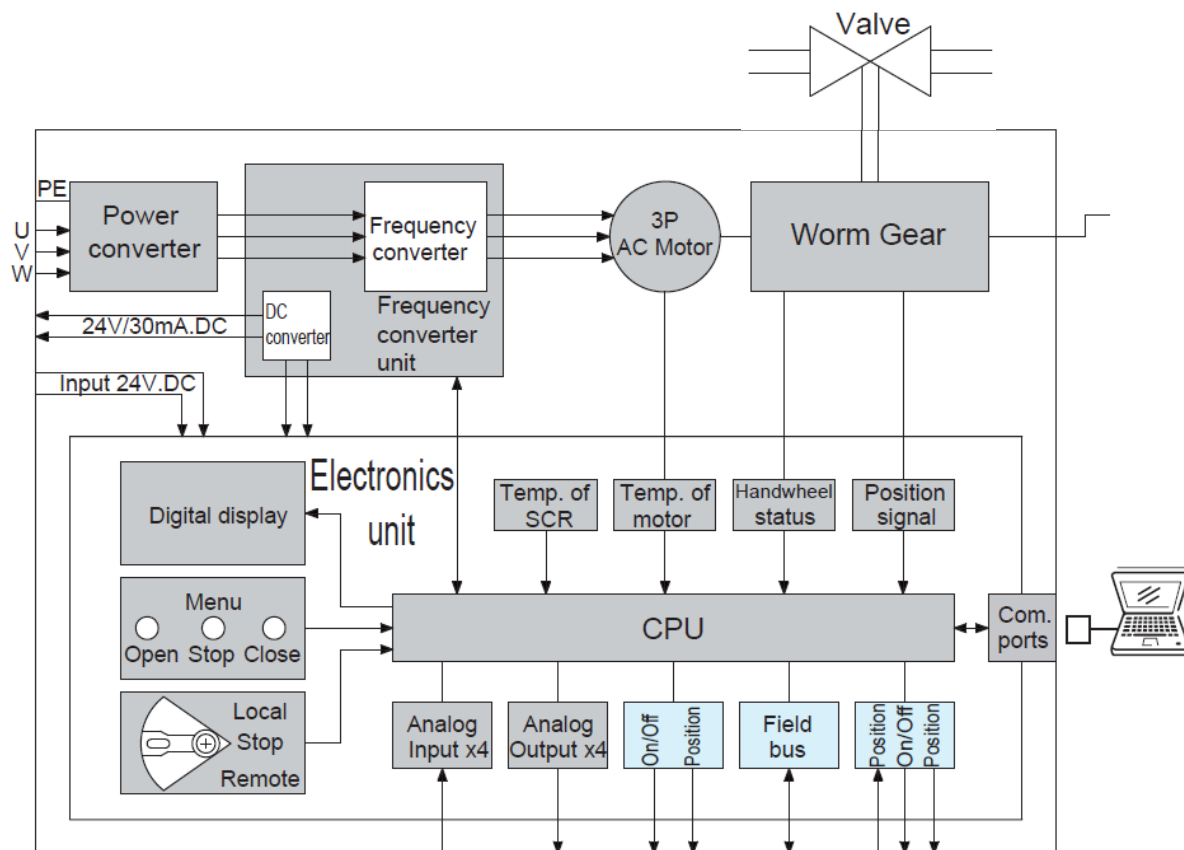
1. Seal for wiring terminal chamber
2. Seal for internal chamber

Ontrac enhanced IP68 meets the following requirements:

- Depth of water: maximum 10 m head of water
- Duration of continuous immersion in water: Max. 72 hours
- During continuous immersion, Up to 10 operations

17.0 ELECTRICAL CONNECTION

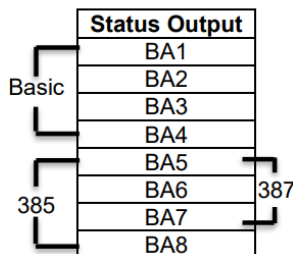
17.1 Functional Block



Note: The blocks in light blue are optional, and order no. are 385, 386 and 387 respectively.

BE1 ~ BE4 digital input ports can be set from "01" to "10" function. See table below.

Menu	Input Ports
Open	BE1
Close	BE2
Shutdown	BE3
Alarm reset	BE4
Allow to open	
Allow to close	
Local lock	
Analog/On/Off Control switch	
ESD	
Fast run	



BA1 ~ BA8 digital output ports can set from "01" to "20" function. See table right.

Menu
Ready to run
Failure alarm
Open to end position
Close to end position
Exceeded torque in OPEN
Exceeded torque in CLOSE
Intermediate position 1
Intermediate position 2
Remote control
Local control
Continuous signal
Pulse signal
OPEN (pulse signal)
end (continuous signal)
CLOSE (pulse signal)
end (continuous signal)
Analog/digital control
"OPEN" indication
"CLOSED" indication
ESD indication
Manual/automatic state
Alarm if analog failure

Basic: Four digital output ports.

384: Hart

385: Four digital output ports and one analog output for valve position.

386A: Profibus-DP

387: Analog input and output of valve position and three digital output.

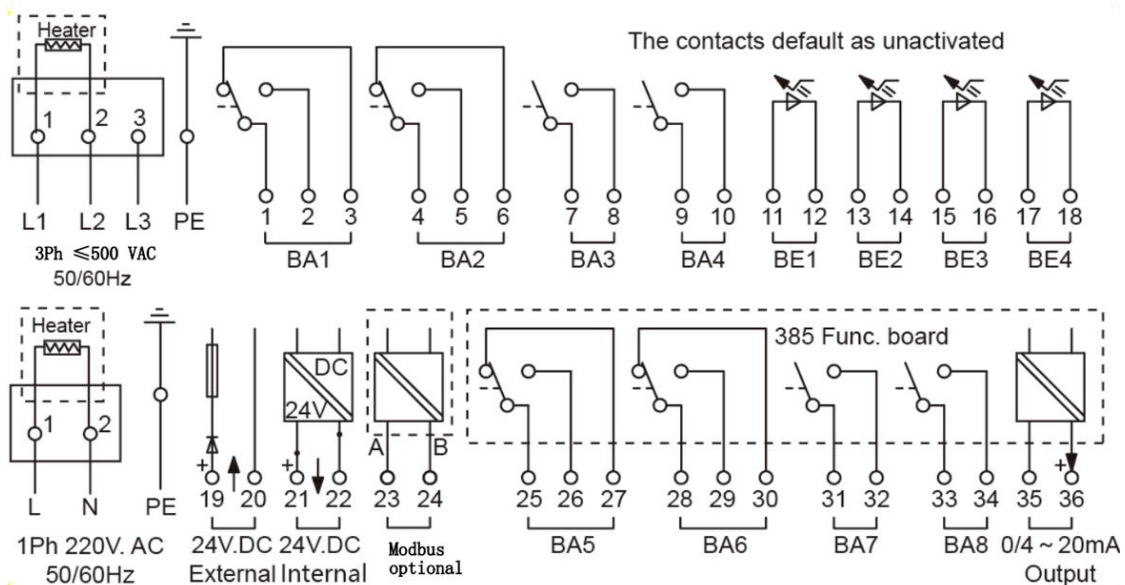
388: MODBUS.

390: Foundation Fieldbus

17.2 Electrical Wiring Diagram

17.2.1 Equipment Wiring Diagram:

Electrical wiring for 385, digital input and output signal, and analogue output :



Input port factory default function settings:

- BE1 01 Operation command in "OPEN" direction
- BE2 02 Operation command in "CLOSE" direction
- BE3 03 Shutdown command
- BE4 04 Fault alarm reset command

- ☐ 3Ph ≤ 500 VAC
- ☐ 3Ph 550VAC
- ☐ 3Ph 600.VAC
- ☐ 1Ph 110V. AC
- ☐ 1Ph 220V. AC
- ☐ 385 Function board
- ☐ 387Function board
- ☐ Modbus
- ☐ Foundation Filed/Hart
- ☐ Ethernet
- ☐ Profibus

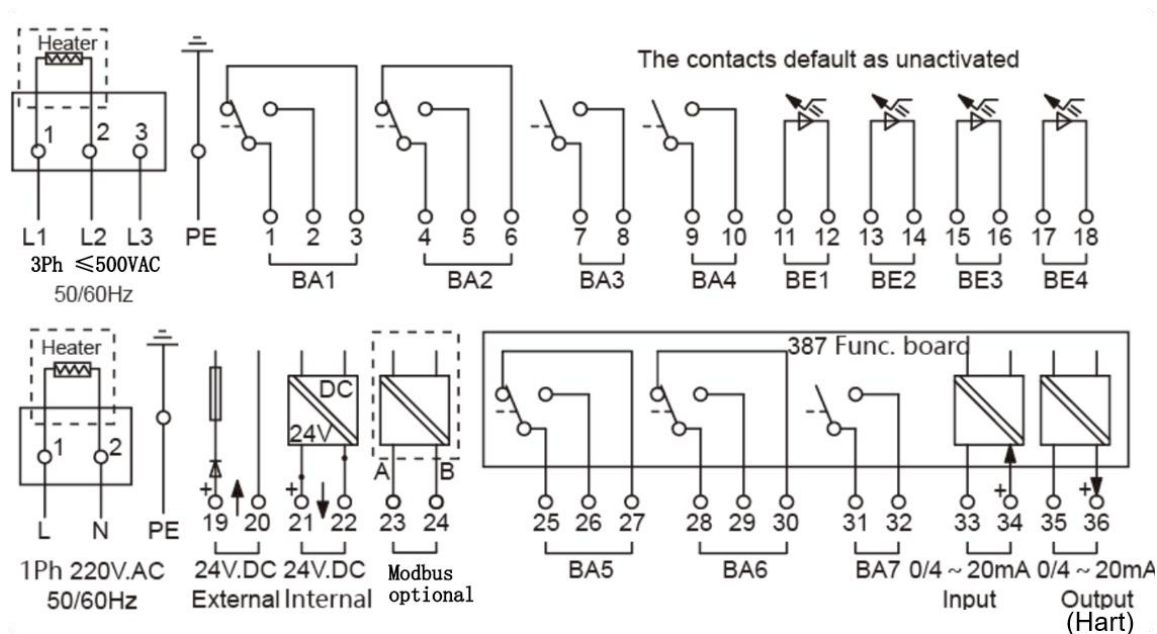
Output port factory default function settings:

- BA1 01 Ready to run
- BA2 02 Fault alarm
- BA3 03 Open to the end position
- BA4 04 Close to the end position
- BA5 05 Exceeded torque in "OPEN" direction
- BA6 06 Exceeded torque in "CLOSE" direction
- BA7 07 Intermediate valve position indication 1
- BA8 08 Intermediate valve position indication 2

Note:

- This wiring diagram is only for this equipment
- The terminals in the dotted line box have corresponding functions only when corresponding modules are selected
- Choose either a three-phase or single-phase option

Electrical wiring for 387, analog control input and output signal



Input port factory default function settings:

- BE1 01 Operation command in "OPEN" direction
- BE2 02 Operation command in "CLOSE" direction
- BE3 03 Shutdown command
- BE4 04 Fault alarm reset command

- ☐ 3Ph $\leq 500\text{VAC}$
- ☐ 3Ph 550VAC
- ☐ 3Ph 660VAC
- ☐ 1Ph 110V AC
- ☐ 1Ph 220V. AC
- ☐ 4-20mA
- ☐ Modbus communication
- ☐ Heater
- ☐ BA1-BA4 high-capacity relay

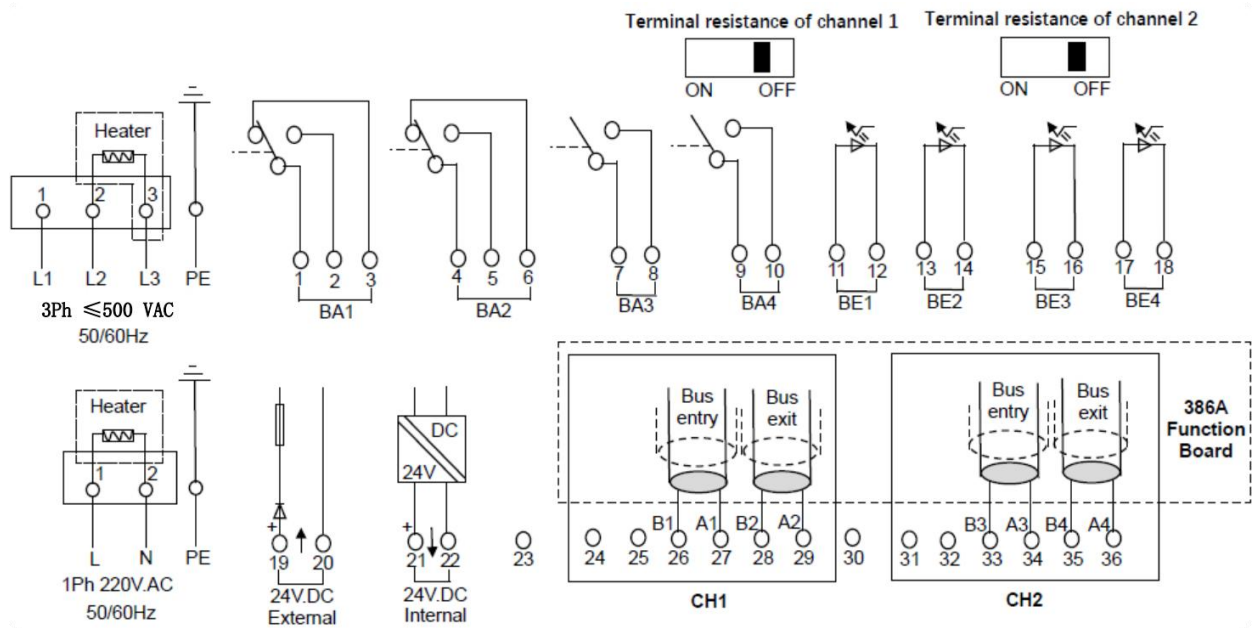
Output port factory default function settings:

- BA1 01 Ready to run
- BA2 02 Fault alarm
- BA3 03 Open to the end position
- BA4 04 Close to the end position
- BA5 05 Exceeded torque in "OPEN" direction
- BA6 06 Exceeded torque in "CLOSE" direction
- BA7 07 Intermediate valve position indication 1

Note:

- This wiring diagram is only for this equipment
- The terminals in the dotted line box have corresponding functions only when corresponding modules are selected
- Choose either a three-phase or single-phase option

17.2.2 Profibus DP Wiring Diagram:



Input port factory default function settings:

- BE1 01 Operation command in "OPEN" direction
- BE2 02 Operation command in "CLOSE" direction
- BE3 03 Shutdown command
- BE4 04 Fault alarm reset command

Output port factory default function settings:

- BA1 01 Ready to run
- BA2 02 Fault alarm
- BA3 03 Open to the end position
- BA4 04 Close to the end position

- ☐ 3Ph ≤500V.AC
- ☐ 3Ph 550VAC
- ☐ 3Ph 660VAC
- ☐ 1Ph 110V. AC
- ☐ 1Ph 220V. AC
- ☐ Heater
- ☐ BA1-BA4 high-capacity relay

Note:

- This wiring diagram is only for this equipment
- The terminals in the dotted line box have corresponding functions only when corresponding modules are selected
- Choose either a three-phase or single-phase option
- Only class A cables conforming to RS485 standard can be used for PROFIBUS bus wiring

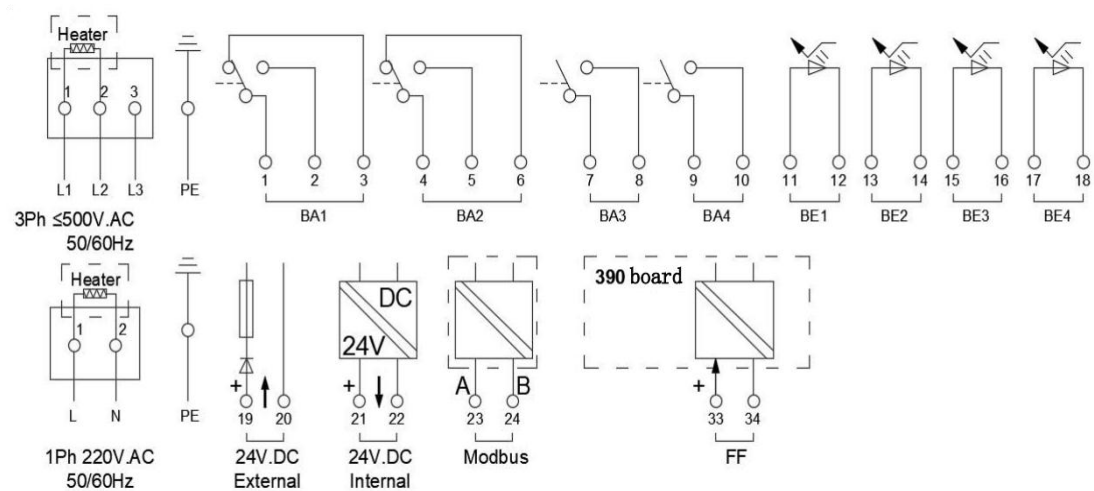
Multitrac electric actuators can support Profibus- DP fieldbus protocol with additional code of "386". A Profibus network segment can connect up to 32 Multitrac electric actuators. The transmission speed of Multitrac electric actuators can range between 9.6kbps ~ 1500kbps

Transmission rate and cable length	Baud rate (kbps)	Maximum cable length without repeater	Maximum cable length with repeater
	9.6	1200m	About 10km
	19.2	1200m	About 10km
	45.45	1200m	About 10km
	93.75	1200m	About 10km
	187.5	1000m	About 8km
	500	400m	About 4km
	1500	200m	About 2km

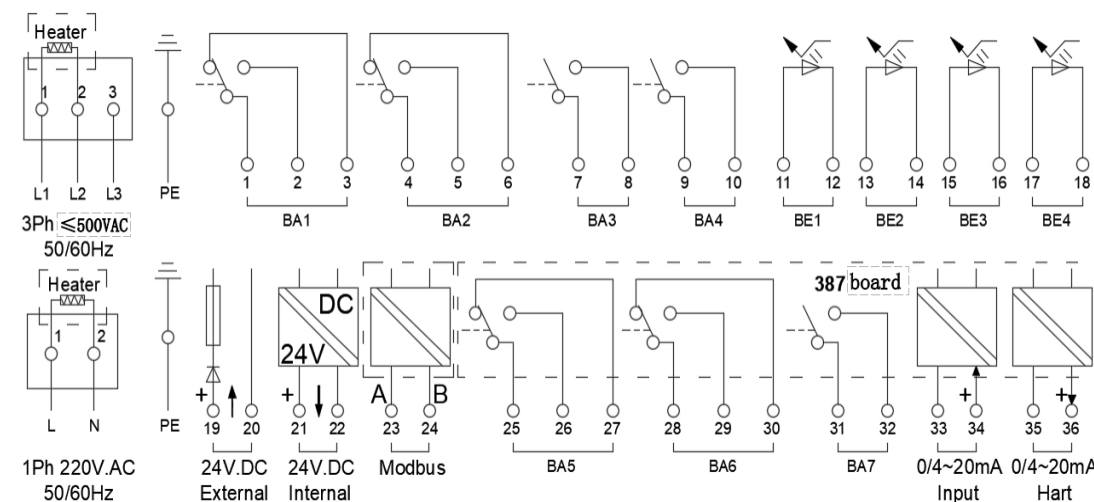
Number of bus type mechanism stations	Baud rate (kbps)	Maximum number of actuators
	9.6	32
	19.2	32
	45.45	32
	93.75	32
	187.5	16
	500	6
	1500	2

17.2.3 Foundation Fieldbus/Hart Wiring Diagram:

Foundation Fieldbus

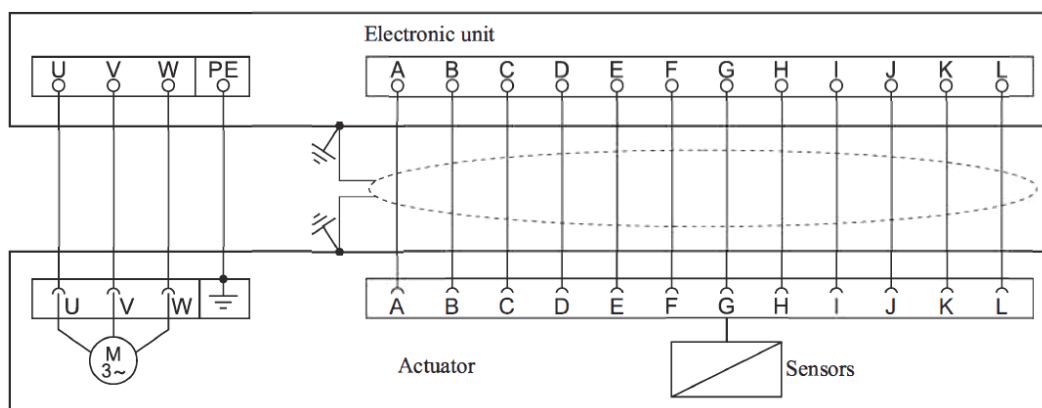


Hart



1. The status contact in the figure is in an untriggered state (default setting), 3 phase 550/660VAC are optional
2. Optional 390&387 board is required to use the function in dotted line closed part.
3. BA contact is for output status. BE contact is for digital input.
4. Pin 19, 20 are external 24V power supply plug-in terminals. If use, when 380V main power supply is out, actuator's output signals remain, analog output terminal (390&387 board required) will remain its own status, the LED screen of actuator displays normally.
5. Pin 21, 22 are internal 24V power supply plug-in terminals. If used, they will be activated when the main power supply is disconnected.
6. Choose either FF or Hart communication mode

17.2.4 Split Wiring Diagram (Electronic Unit and Actuator):

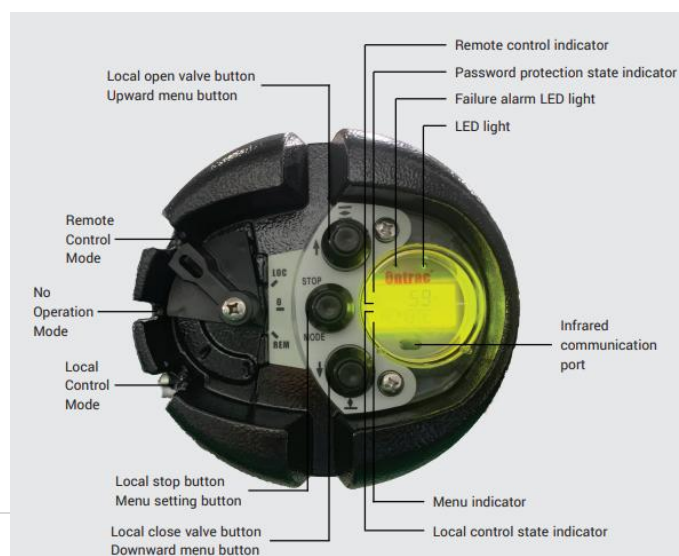


1. The sensor signal cable shall be a shielded 12 core cable; The cross-sectional area of the line shall not be less than 2.5mm^2 , and the length of the line shall not exceed 30m;
2. The motor connecting wire shall be a shielded wire with a cross-sectional area of not less than 4mm^2 , and attention shall be paid to the connection between the electric unit and the actuator part;
(**Note:** The motor terminal of the electric unit is yellow green terminal, and the three-phase power input terminal is gray terminal);
3. In high-temperature environments, please use high-temperature cables, incoming line fittings (connectors), cable protection shell, etc. that meet the onsite requirements;
4. The figure above is only the wiring diagram between the electric unit and the actuator. Please refer to the wiring diagram of conventional products for control wiring.

18.0 ACTUATOR CONTROL

All Multitrac actuators have integral control pushbuttons as well as a local/remote selector switch. In local (manual) control the three push buttons have open, close and stop functionality.

The settings and parameter can also be set and read through the use of these same control push buttons. In this case the three push buttons are used to scroll through, view and change settings.



19.0 IR CONTROLLER

The Infra-Red Controller allows the actuator to be accessed without utilizing the manual functions located on the actuator. It can be used with all Ontrac actuators.



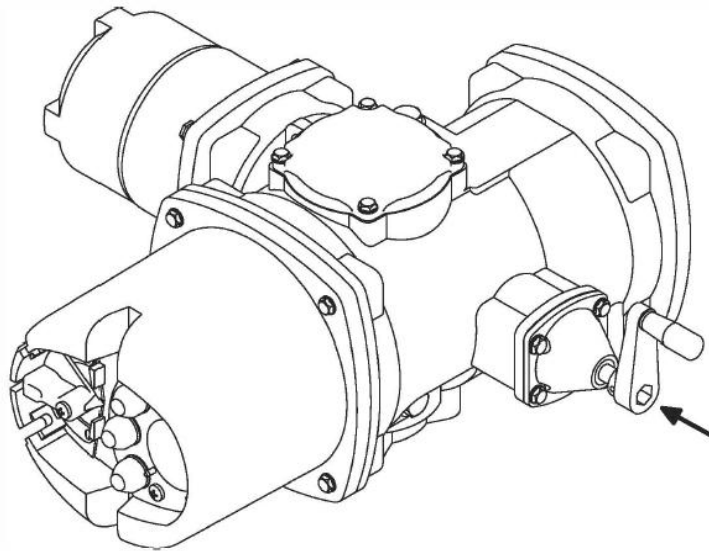
20.0 HANDWHEEL

HAND CRANK

A hand crank is provided for manual operation.

Push this crank towards the actuator to engage it to the worm shaft. Electrical contacts avoid or interrupt the motor operation, as soon and as long as the hand crank is engaged. Self-locking will be maintained in hand operation.

Exceeding the permissible hand crank force, required for the max. switch-off torque, can damage the actuator and / or the value. THE FOLLOWING HANDCRANK FORCES ARE REQUIRED TO PROVIDE THE MAX. SWITCH-OFF TORQUE: T		
Actuator	Max. switch-off torque (Nm)	Perm. Hand crank force (N)
MOE 706	50	57
	25	77
	15	71
MOE 708	80	57
	50	77
	30	71
MOE 712	150	114
	100	128
	60	123
MOE 725	300	146
	200	152
	125	265



21.0 LUBRICATION

VENT VALVE



- When delivered both oil filler holes are sealed with drain plugs.

Once the actuator is installed, it is important to remember that the upper most drain screw must be replaced by the additionally supplied venting plug. This venting plug helps manage altitude and temperature changes experienced by the actuator - it is a one way valve to adjust the inner oil gas pressure.

For installations above 2000m poster height, consider that an additional heating element might be required.

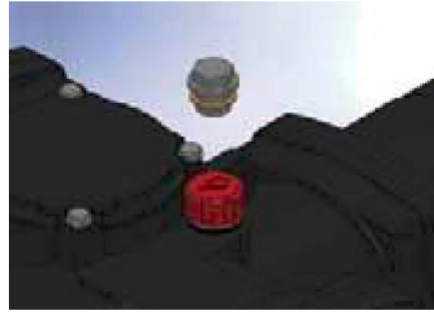
LUBRICATING OIL

- Actuators are oil lubricated. There are no restrictions concerning the mounting position. There is no need to change the lubricant during the entire actuator life.
- When air shipped, oil is not allowed, oil need to be filled by customer before use. The upper most drain screw is to be replaced by the additionally supplied venting plug.

Ontrac actuators are oil lubricated with MOBIL SHC 629. There is no need to change the lubricant during the entire life.

PLEASE REFER TO FOLLOW TABLE IF THERE IS EXCEPTION.

Actuator Type	MOE 706 MME 806	MOE 708 MME 808	MOE 712 MME 812	MOE 725 MME 825	MOE 750 MME 850	MOE 790 MME 890	MOE 790L
Filling (L)	0.4	0.4	0.4	0.6	0.6	0.8	0.8



22.0 MOTOR

All multitrac actuators utilize AC asynchronous motors fitted with integral stator control.

23.0 BATTERY

All Multitrac actuators contain a replaceable, rechargeable lithium battery. The battery's primary function is to power the positioning circuitry such that in the event of main power interruption the actuator maintains its position sensing. As a secondary function it can light up to the controls display. If the battery is low or malfunctioning a warning message is indicated on the display.

24.0 CABLE ENTRIES

M32 for power, Two M25 for signals in/out and serial communication.



24.1 WIRE CROSS SECTION (TERMINAL CONNECTION)	
Power cable	≤ 6mm ² inflexible or 4 mm ² flexible
Single Cable	≤ 2.5mm ² inflexible or flexible

24.2 WIRE CROSS SECTION (PLUG)		
Operating Mode		MOE 706...MOE 725
POWER CABLE (Inflexible or flexible)	Standard	2.5 MM ²
	Option	6 MM ²
SINGLE CABLE (Inflexible or flexible)	inverted	2.5 MM ²

24.3 THREAD SIZE FOR CABLE GLANDS			
	Standard	Option	
	METRIC	PG	NPT
Terminals (Standard &Explosion proof type)	2 x M32 X 1.5 1 x M25 X 1.5	1x PG 21 1x PG 16 1 x PG 13.5	2 x NPT 1" 1 x NPT 3/4"
Plug (Option)	2 x M32 X 1.5 1 x M16 X 1.5	1x PG 21 1x PG 16 1 x PG 11	2 x NPT 1" 1 x NPT 1/2"
The threaded holes for the cable glands are covered with a plug when delivered. The protection class can only be guaranteed with locally mounted cable glands.			

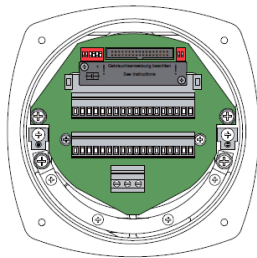


Standard &Explosion proof type

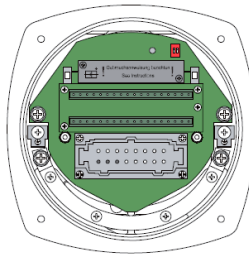


Plug-in type

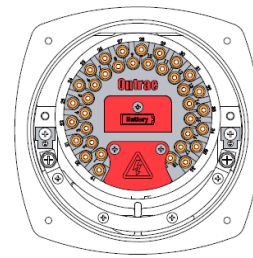
We offer three terminals connections as the following pictures. standard terminals connection is fast and reliable, plug-in terminals easy to maintain, and screw terminals for explosion-proof products.



Standard terminals



Plug-in terminals

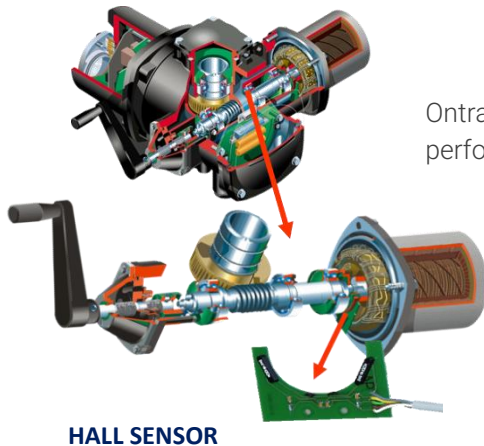


Screw terminals

25.0 ESD

An additional ESD input can be configured. This input can be configured to “open”, “close” or any preset position. This input will override any command that the actuator is currently receiving.

26.0 POSITION SENSING



Ontrac contactless hall sensor: outstanding performance and proven reliability

27.0 SELF DIAGNOSIS DESCRIPTION

When power on, there is a self diagnosis, checking mainly external power source matching with Multitrac model selection, and performing a health check of electronics. When finished, if there is any problem, there will be an alarm or failed testing display, or the program will move on to its normal operation.

28.0 PRODUCT ORDERING CODING

Ontrac actuators use a standardized ordering code system. This brochure only lists core model. Full option codes are contained in the controlled Ordering Code Manual OCM6.12. Please contact factory to request this document.

Example for Multitrac multi-turn actuator: MME812-F10-x-x-...

All final order codes comply with the Ordering Code Manual OCM6.12



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