

4. **INDUSTRIAL UNIC SERVOMOTORS**

The industrial servomotor is a rotary type electric actuator for use with the MM systems. It is available in 4 sizes with torque output ranging from 40 to 400Nm. The UNIC servomotors can be used for air dampers and water valves.

A 4-20mA version of the UNIC servomotors is available for use on the analogue channels on the MMs as well as for controlling feedwater valves.

The industrial servomotors feature:

- Light, compact design.
- High torque output.
- Built-in thermal protector to prevent motor burnout by overloading.
- Easy to install and suitable for use in narrow spaces.
- Simple structure design.
- Mounting bracket and coupling available for direct mounting onto air dampers or valves.
- Manual operation is possible with the included manual crank handle.
- Simplified wiring using internal terminal block.
- Available in 230V, 110V AC for use with the Mk8 MM and Mini Mk8 MM.
- 24V DC version available for use with Autoflame Bottom Blowdown modules.
- ATEX approved version is available for hazardous environments.
- 4-20mA version for use with MM analogue output channels.

The following UNIC servomotors are available:

UNIC	Voltage V AC	Torque Nm	Torque ft lb	Part #
UNIC05	230	40	30	MM10070
UNIC05	110	40	30	MM10070/110
UNIC05	120	40	30	MM10070/120
UNIC10	230	98	72	MM10072
UNIC10	110	98	72	MM10072/110
UNIC10	120	98	72	MM10072/120
UNIC20	230	200	148	MM10074/B
UNIC20	120	200	148	MM10074/B/110
UNIC40	230	400	295	MM10078
UNIC40	110	400	295	MM10078/110

24V DC version is available for use with Autoflame Bottom Blowdown Modules:

UNIC	Voltage V DC	Torque Nm	Torque ft lb	Part #
UNIC05	24	40	30	BBA10070
UNIC10	24	98	72	BBA10072

4.1. Specifications

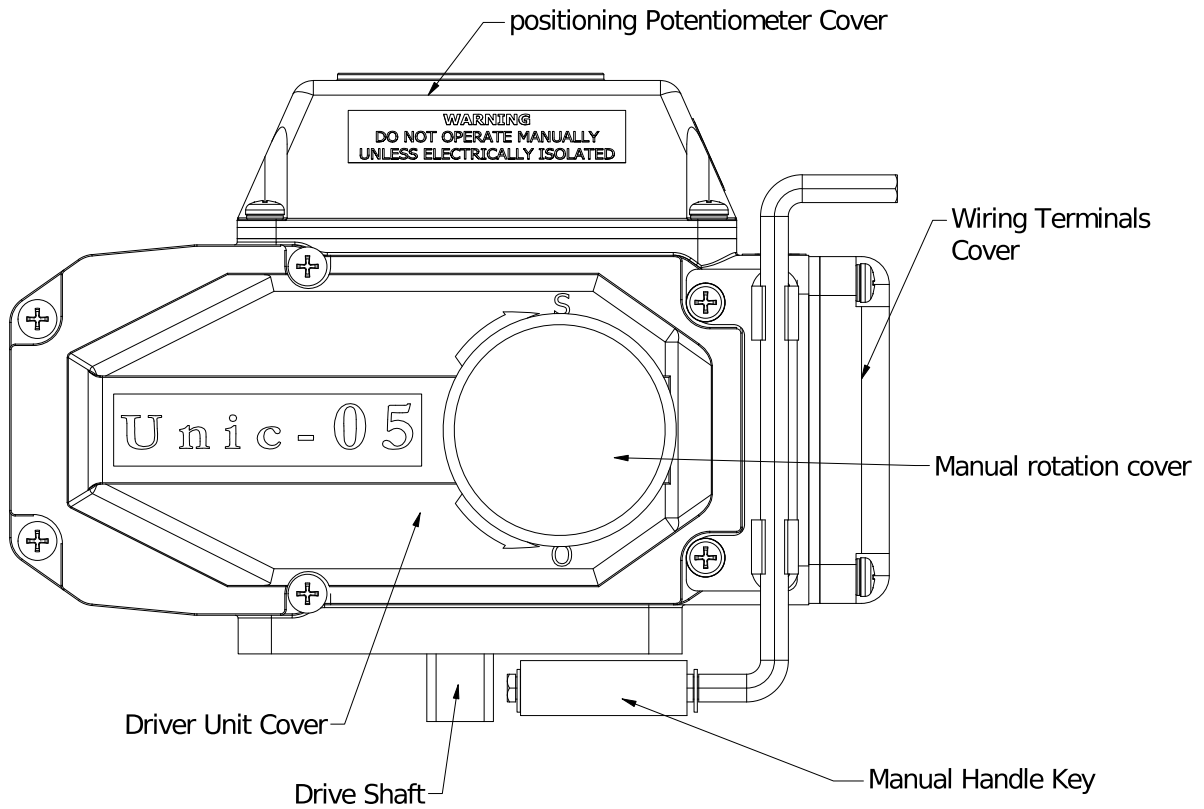
The following specifications are universal for all the UNIC servomotors:

Operation angle	0.0° to 90.0°
Drive Time (0° to 90°)	15 to 30 seconds @ 50Hz (nominal)
Accuracy	Up to 0.5°, 180 positions available
Max. rated power	9W
Min. operation temperature	-25°C (-13° F)
Max. operation temperature	55° C (131° F)
Ingress Protection rating	IP65 (NEMA4X)
Protector	Thermal protector
Stop	Mechanical type (open/close)
Mounting angle	360°
Positioning	MM drive
Drive motor	Synchronous
Insulation Resistance	100mΩ/ 500VDC
Withstand Voltage	1500VAC/ minute
Manual Operation	Crank handle included
Housing material	Die cast aluminium ADC - 12
Finish	Industrial baking varnish
Dimension (LxWxH)	See relevant drawing
Wiring connection	2x ½" BSPP (male) to ½" NPSM (female)

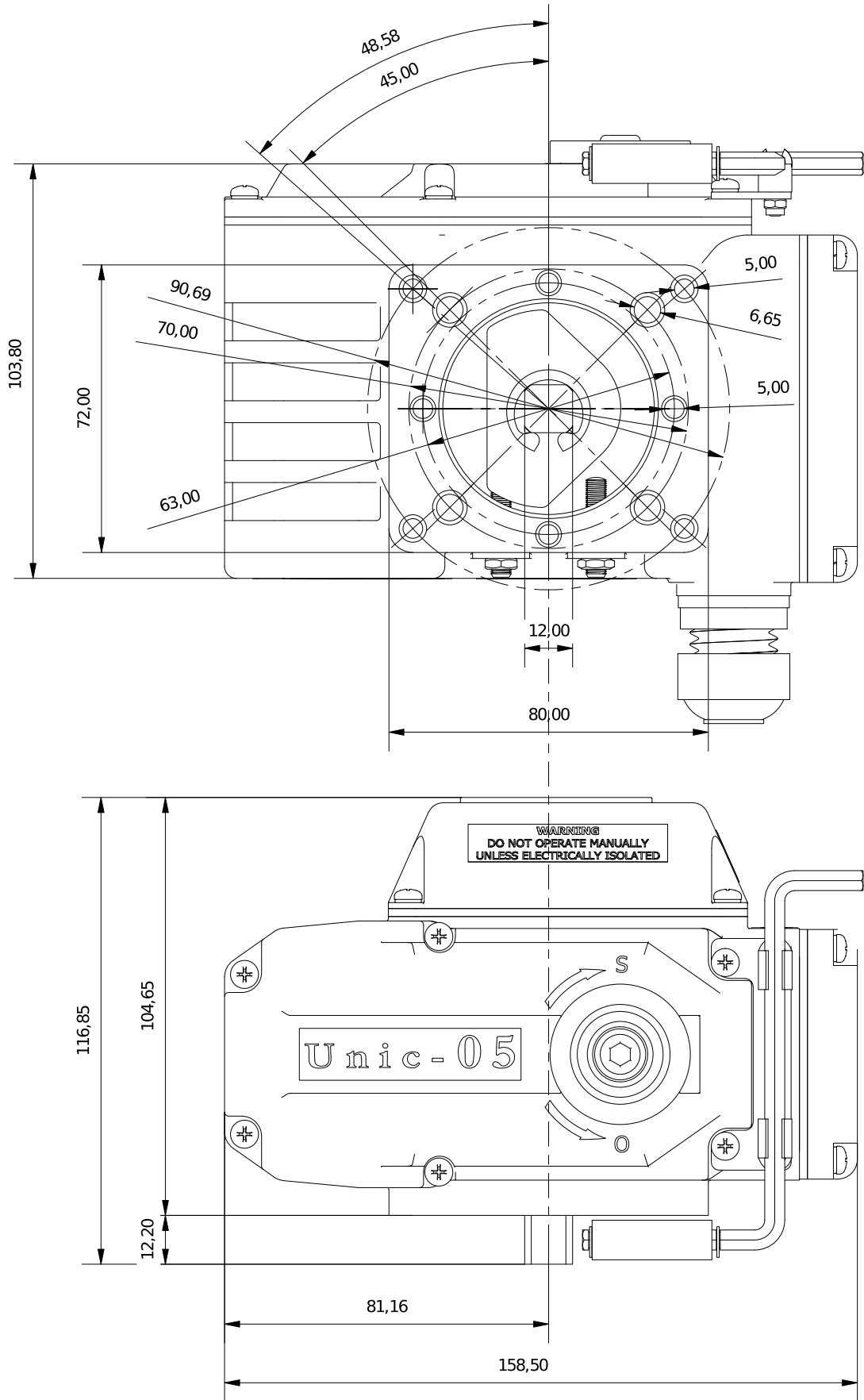
The following specifications are unique for each UNIC servomotor:

	UNIC05	UNIC10	UNIC20	UNIC40
Torque at shaft	39.2Nm (29 Lb.ft)	98Nm (72 Lb.ft)	196Nm (145 Lb.ft)	392Nm (289 Lb.ft)
Drive motor	8W	20W	30W	90W
Wight	2.3Kg	4.5Kg	7.8Kg	8.5Kg
Rotation angle	360	90	90	90
Mechanical stopper	-	Adjustable	Adjustable	Adjustable
Rated current (230V version)	0.25/0.30A	0.30/0.35A	0.50/0.55A	0.7/0.9A
Rated current (120V version)	0.6/0.7A	0.60/0.65A	1.0/1.1A	1.6/1.8A
Rated current (110V version)	0.7/0.9A	0.65/0.70A	1.1/1.2A	1.8/2.0A

4.2. External Drawings

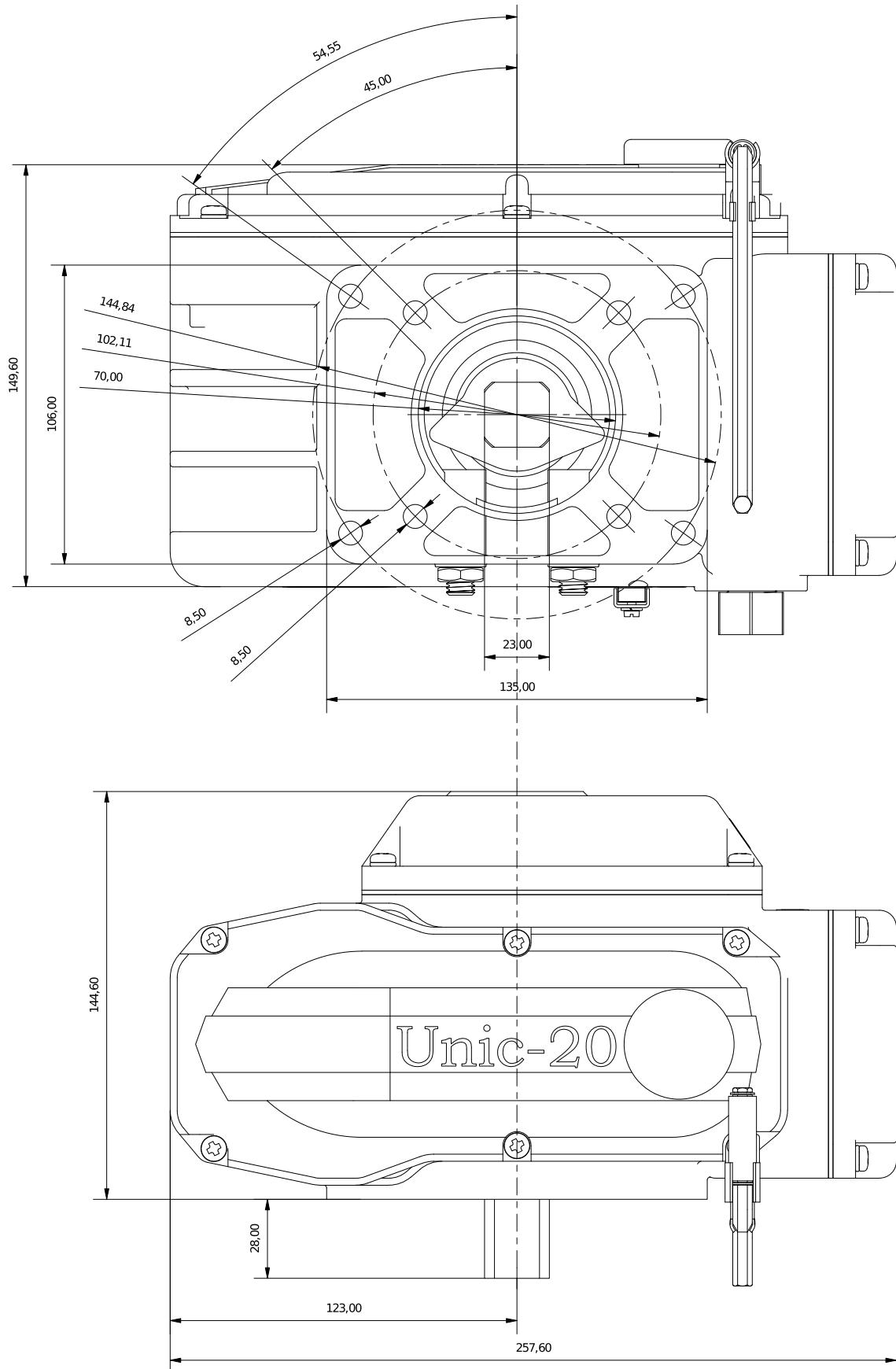


4.3. UNIC05



All dimension in millimetres: 1 inch = 25.4 mm

4.5. UNIC20 & UNIC40



All dimension in millimetres: 1 inch = 25.4 mm

4.6. Manual Operation

Autoflame UNIC servomotors can be turned manually. Before starting manual operation, the power to the servomotor must be isolated/ switched off, failing to do so can cause serious injury and will permanently damage the servomotor.

- I. Remove rubber cap covering the manual drive port.
- II. insert the manual handle key into the hexagonal port.
- III. Turn the manual handle clockwise, the shaft moves in the CLOSE direction.
- IV. Turn the manual handle counter clockwise, the shaft moves in the OPEN direction.



Important Notes:

- Do not over-turn the handle with excessive force or if the valve/damper is stuck/showing abnormal resistance; this will cause permanent damage to the servomotor and damper/valve.
- If power is not disconnected when driven manually, then the servomotor will try to automatically drive to its original position during manual operation. This will damage the servomotor and may cause physical injury.
- UNIC 10, 20 & 40 servomotors rotation is limited to 90°, overdriving the servomotors can cause permanent damage.

4.7. Industrial Servomotors 4-20mA

The UNIC industrial servomotors are available as special version that can be controlled using analogue 4-20mA signal, which enable the servomotors to be controlled via the analogue current signal from the MM.

The following channel outputs can be used on the MM to drive the 4-20mA UNIC servomotors:

MM system	Channel
Mk8 MM	Ch5, Ch6, Feedwater servomotor/VSD analogue output
Mini Mk8 MM	Ch4

The following 4-20mA UNIC servomotors are available:

UNIC Size	Voltage V AC	Torque Nm	Torque ft lb	Part #
UNIC10	230	98	72	MM10073
UNIC10	110	98	72	MM10073/110
UNIC20	230	200	148	MM10079
UNIC20	120	200	148	MM10079/110
UNIC40	230	400	295	MM10080
UNIC40	110	400	295	MM10080/110
UNIC40	110	400	295	MM10080/120