ICON 2000 ELECTRIC ACTUATORS

The ICON 2000 v4 series are electronically-configurable quarter and multi-turn actuators with advanced operation, control, setting and maintenance characteristics

FEATURES

- Non-intrusive configuration
- User-friendly push-button panel for operation, setting and diagnostics
- Bluetooth™ wireless connectivity
- Watertight and explosionproof PDAs available
- Advanced maintenance data and alarm reports
- Valve condition monitoring
- Configurable 'data logger' function for maintenance and diagnostic programs in recorder or event modes
- Customized numeric and graphic displays with 8 language options
- Single enhanced terminal block
- Digital contactless torque and position sensing
- Advanced open bus communication protocols:
  - Lonworks
  - Profibus DPV0, DPV1 and redundant DPV1
  - Foundation Fieldbus
  - Modbus
  - Hart
- Suitable for use in SIL 2 applications

Bluetooth™ is a trademark of Bluetooth SIG, Inc., USA

GENERAL APPLICATION

The ICON 2000 is available in five sizes and is designed for on/off or modulating operation of valves used in heavy industrial, chemical and petrochemical plants.

APPROVALS

Waterproof:	IP68 or NEMA 4, 4X and NEMA 6
Explosionproof:	Ex-d IIB T4 Higher explosionproof classifications available

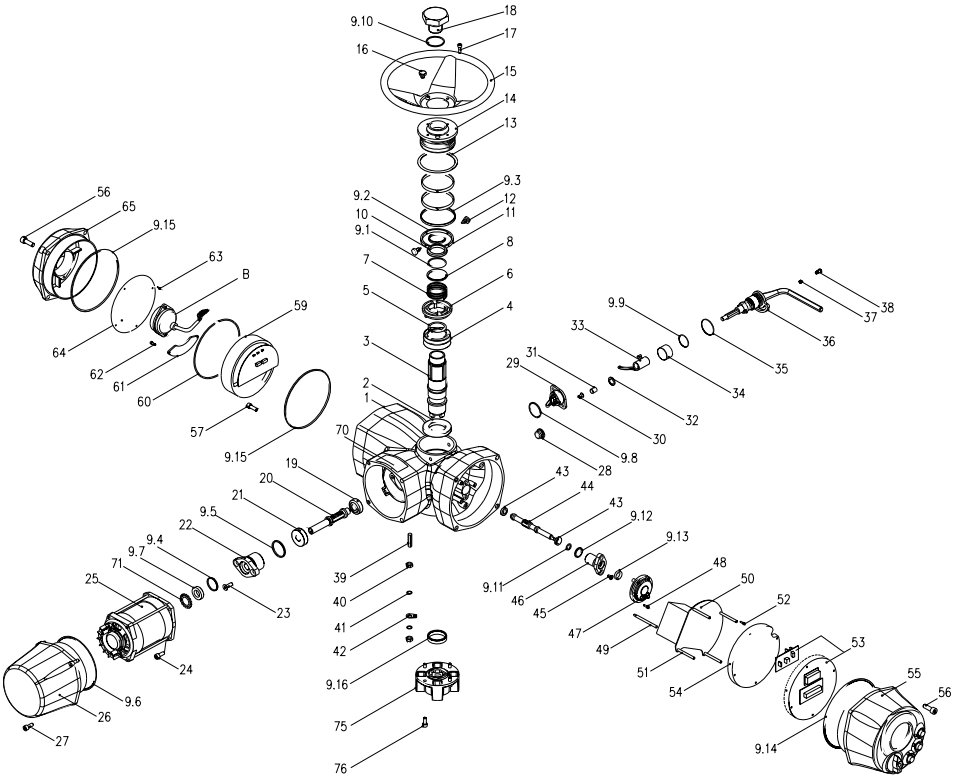
Suitable for use in SIL 2 applications

TECHNICAL DATA

Power supply:	3 phase from 208 V to 690 V at 50/60 Hz 1 phase from 110 V to 240 V at 50/60 Hz DC (Direct current) from 24 V to 110 V
Torque output:	From 30 to 334,000 Nm
Speed range:	From 12 to 173 RPM at 50/60 Hz

Ambient temperature

Standard range:	-30°C to +85°C Extended temperature ranges available



ICON 2000 COMPONENT PARTS

Item	Qty	Description	Material
1	1	Housing	Aluminium
2	1	Lower bearing	Carbon steel
3	1	Hollow shaft	Carbon steel
4	1	Worm wheel	Bronze
5	1	Circlip	Carbon steel
6	1	Driver sleeve	Cast iron
7	1	Driver sleeve spring	Carbon steel
8	1	Spring retaining ring	Carbon steel
9	1	Seal kit *	--
9.1	1	O-ring *	FPM rubber
9.2	1	Seal ring *	NBR rubber
9.3	1	Q-ring *	NBR rubber
9.4	1	O-ring *	NBR rubber
9.5	1	O-ring *	NBR rubber
9.6	1	O-ring *	NBR rubber
9.7	1	Seal ring *	PTFE
9.8	1	O-ring *	NBR rubber
9.9	1	O-ring *	Fluorosilcon rubber
9.10	1	O-ring *	NBR rubber
9.11	1	Q-ring *	NBR rubber
9.12	1	O-ring *	NBR rubber
9.13	1	Seal ring *	PTFE
9.14	1	O-ring *	NBR rubber
9.15	2	O-ring *	NBR rubber
9.16	1	Seal ring *	NBR rubber
10	1	Upper bearing	Carbon steel
11	2	Cover retaining ring	Carbon steel
12	2	Plug	Stainless steel
13	1	Cover shoulder washer	Carbon steel
14	1	Cover	Aluminium

Item	Qty	Description	Material
15	1	Handwheel	Carbon steel
16	1	Oil plug	Carbon steel
17	4	Screw	Carbon steel
18	1	Stem protection tube	Carbon steel
19	1	Taper bearing	Carbon steel
20	1	Worm shaft	Alloy steel
21	1	Taper bearing	Carbon steel
22	1	Worm shaft flange	Aluminium
23	2	Screw	Carbon steel
24	4	Screw	Carbon steel
25	1	Electric motor assembly *	--
26	1	Motor cover	Aluminium
27	4	Screw	Stainless steel
28	1	Oil plug	--
29	1	Finger assembly *	--
30	2	Screw	Stainless steel
31	1	Bush	Steel-bronze-PTFE
32	1	Shoulder washer	Nylon
33	1	Fork	Carbon steel
34	1	Bearing bush	Carbon steel
35	1	Lever washer	Carbon steel
36	1	Lever assembly	--
37	1	Lever screw block	Stainless steel
38	1	Screw	Carbon steel
39	1	Earth stud	Brass
40	2	Earth stud nut	Brass
41	2	Washer	Carbon steel
42	1	Earth stud indication plate	Stainless steel

Item	Qty	Description	Material
43	2	Bearing	Carbon steel
44	1	Position sensor shaft	Brass
45	2	Screw	Stainless steel
46	1	Position sensor flange	Aluminium
47	1	Position sensor assembly *	--
48	3	Screw	Stainless steel
49	4	Column	Stainless steel
50	1	Power card *	--
51	4	Column	Stainless steel
52	4	Screw	Stainless steel
53	1	Processor card *	--
54	1	Power card cover	Nylon
55	1	Local interface assembly	--
56	8	Screw	Stainless steel
57	1	Screw	Stainless steel
59	1	Terminal board *	--
60	1	Circlip	Stainless steel
61	1	Power terminals cover	Nylon
62	2	Screw	Stainless steel
63	4	Screw	Stainless steel
64	1	Terminal board plate	Plastic
65	1	Terminal board cover	Aluminium
70	1	Data plate	Stainless steel
71	1	Circlip	Stainless steel
75	1	Thrust block assembly	--
76	4	Screw	Stainless steel
Optional			
A	1	Bus interface card *	--
B	1	Battery assembly	--

* Recommended spare parts

ICON 2000 STANDARD SPECIFICATIONS

NON-HAZARDOUS AND HAZARDOUS AREA CERTIFICATIONS

Enclosure / weatherproof standards (IEC / NEMA)

Standards	Enclosure marking	Version	Temperature range		
			3-ph		1-ph & DC
			Up to 60 st/hr	> 60 st/hr	
IEC EN 60529	IP66 / IP68	Standard temperature	-30°C/+85°C	-30°C/+65°C	-30°C/+65°C
		Low temperature	-60°C/+65°C	-60°C/+65°C	-60°C/+65°C
NEMA 250	NEMA 4, 4X, 6	Standard temperature	-30°C/+85°C	-30°C/+65°C	-30°C/+65°C
		Low temperature	-55°C/+65°C		

European standards hazardous areas (ATEX)

Standards	Enclosure marking		Version	Temperature range		
				3-ph		1-ph & DC
	Gas	Dust		Up to 60 st/hr	> 60 st/hr	
ATEX (60079)	Ex d IIB T4 Gb §	Ex tb IIIC T135°C Db	Standard temperature	-20°C/+65°C [TM] -20°C/+85°C	-20°C/+65°C	-20°C/+65°C
			Low temperature ICON 010, 020 *	-60°C/+65°C [TM] -60°C/+85°C	-60°C/+65°C	-60°C/+65°C
			Low temperature ICON 030, 040, 050 *	-55°C/+65°C [TM] -55°C/+85°C	-55°C/+65°C	-55°C/+65°C
ATEX (50014)	EEx d IIB 135°C T4 §		Standard temperature	-30°C/+65°C [TM] -30°C/+85°C	-30°C/+65°C	-30°C/+65°C
			Low temperature	-55°C/+65°C [TM]		

§ with battery: add ia * with extension lowest temp limited to -20°C

ATEX (60079)	c Ex de IIB T4 Gb §	c Ex tb IIIC T135°C Db	Standard temperature	-25°C/+60°C		
ATEX (50014)	EEx d IIB 135°C T4 §		Standard temperature	-25°C/+65°C		

§ with battery: add ia

ATEX (60079)	c Ex d IIC T4 Gb * §	c Ex tb IIIC T135°C Db *	Standard temperature	-60°C/+85°C		
ATEX (50014)	EEx d IIC 135°C T4 §		Standard temperature	-30°C/+65°C [TM] -30°C/+85°C	-30°C/+65°C	-30°C/+65°C

§ with battery: add ia * applicable to models ICON 2000 010, 020

ATEX (60079)	c Ex de IIC T4 Gb * §	c Ex tb IIIC T135°C Db *	Standard temperature	-25°C/+60°C		
ATEX (50014)	EEx de IIC 135°C T4		Standard temperature	-25°C/+65°C		

§ with battery: add ia * applicable to models ICON 2000 010, 020, 030

ATEX (60079)	c Ex de IIB+H2 T4 Gb * §	c Ex tb IIIC T135°C Db *	Standard temperature	-25°C/+60°C		
ATEX (50014)	EEx de IIB+H2 135°C T4		Standard temperature	-25°C/+65°C		

§ with battery: add ia * applicable to models ICON 2000 040, 050

North American standards hazardous areas (NEC / CSA / FM)

Standards	Enclosure marking		Version	Temperature range		
				3-ph		1-ph & DC
	Gas	Dust		15' duty rating Up to 60 st/hr	30' duty rating > 60 st/hr	
NEC 500 CSA	Class 1, Group C, D		Standard temperature	-50°C/+70°C		
NEC 500 FM	Class 1, Division 1, Group C, D		Standard temperature	-25°C/+70°C	-25°C/+60°C	-25°C/+60°C

International standards hazardous areas (IECEX)

Standards	Enclosure marking		Version	Temperature range		
				3-ph		1-ph & DC
	Gas	Dust		15' duty rating Up to 60 st/hr	30' duty rating > 60 st/hr	
IECEx	Ex d IIB T4 Ex tD A21 T135°C §		Standard temperature	-20°C/+60°C		

§ with battery: add ia

BASE VERSION FEATURES

REMOTE CONTROLS
4 wires (OP, CL, Stop, C/latched)
3 wires (OP, CL, C/push-to-run or latched with instant reverse)
2 wires (NO contact to open or reverse)
Control voltage
24 V DC, internal supply
20 to 125 V DC, external supply

REMOTE OUTPUT CONTACTS
Status
Open limit
Closed limit
Position >=xx %
Position <=xx %
Closing
Opening
Motor running blinker
Mid-travel position
Local selected
Remote selected
Local stop active
ESD signal on
Manual operation
Alarms
Motor over-temperature
Over-torque over torque in OP
Over-torque in CL
Valve jammed in OP
Valve jammed in CL
Valve jammed
Warnings
Low lithium battery (if present)
Mid-travel alarm in CL/OP
Mains-only AS8

EMERGENCY SHUTDOWN (ESD)
Selector in LOCAL
Selector in OFF
Motor temperature alarm
Local STOP pushbutton
Torque alarm
2 speed timer
Stay put
Move to open position
Move to close position
Move to pre-set position

MONITOR RELAY
Loss of power
Loss of one phase
Electrical contactor failure
Loss of one phase
Local stop activated
Local selector switch in LOCAL/OFF
Internal temperature alarm
Position sensor
Hardware error
Motor temperature alarm
Torque alarm
Jammed valve
Mid-travel alarm
Speed sensor configuration error
Manual operation
ESD signal
Low battery

INTELLIGENT PROTECTION
Automatic phase correction
Phase failure correction
Motor thermostat
Jammed valve protection
Anti-hammer protection
Instantaneous reversal protection
Warnings
Contactor failure
Maximum torque alarm
Torque alarm by-pass
High/low electronic temperature
Opto-coupled remote controls

VALVE MONITORING

TORQUE PROFILES
Breakout reference torque in opening
Peak running reference torque in opening
Ending reference torque in opening
Breakout torque in opening
Peak running torque in opening
Ending torque in opening
Breakout reference torque in closing
Peak running reference torque in closing
Ending reference torque in closing
Breakout torque in closing
Peak running torque in closing
Ending torque in closing
Date of the last 'set torque reference'
Date of last torque profile in opening
Date of last torque profile in closing

OPERATIONS
Opening time of the last stroke
Closing time of last stroke
Total contactor operations
Motor run time
Time out without electrical power
Utilization rate
Torque alarm number
Motor temperature alarm number
Min and max temperature of motor and electronics
Recent contactor operations
Recent motor run time
Recent time without electrical power
Recent utilization rate
Recent torque alarm number
Recent motor temperature alarm number
Recent min and max temperature of motor and electronic

ALARMS
Last 64 alarms and date
Last 64 warnings and date

MAINTENANCE DATA
Last maintenance date
Next maintenance date
Date of the last 'clear recent data log
Start-up date

NAME PLATE
Serial number
Actuator size
Nominal torque
Actuator speed
Power supply
Motor rating
Motor duty
Motor poles
Motor type
Motor current
Test date
Wiring diagram
Enclosure
Certificate
Lubricant
HW version
SW version

VALVE DATA
Valve tag name
Valve serial number
Valve manufacturer
Break to open torque
Max stem thrust
Valve coupling type

ICON 2000 actuators can be supplied for single phase, three phase and DC power supplies.
Performance and motor data is provided for the models indicated in the table below.

PERFORMANCE AND MOTOR DATA

	Power supply			Model				
Voltages	**Single phase**	**Three phase**	**DC**	**ICON 010**	**ICON 020**	**ICON 030**	**ICON 040**	**ICON 050**
24 V			√	√				
48 V			√	√				
110 V			√	√	√			
115 V	*			√	√			
120 V	√		√	√	√			
220 V	*	*		√	√	√	Δ	Δ
230 V	√	√		√	√	√	Δ	Δ
240 V	√	√		√	√	√	Δ	Δ
380 V		√		√	√	√	√	√
400 V		*		√	√	√	√	√
415 V		√		√	√	√	√	√
440 V		√		√	√	√	√	√
460 V		√		√	√	√	√	√
500 V		*		√	√	√	√	√
660 V		*		√	√	√	√	√
690 V		*		√	√	√	√	√

√ Available in the catalogue
* Available on request
Δ Available only with three phases

For all performance and motor data the following notes apply:

Voltages
The tolerances on all voltage values shown are -10% / +10%

Nominal duties
Nominal duties are -5% / +5% according to CEI 2-3 (equivalent to IEC 60034-1)

Nominal output power
Nominal output power (kW) is according to CEI 2-3 (equivalent to IEC 60034-1)

Motors
All performance figures are based on Motor class H

Published values
The tolerances on published values are all according to CEI 2-3 (equivalent to IEC 60034-1)

ON/OFF S2-15' OR INCHING SERVICE S4-25%, 60 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor[3] nominal current (Inom)	Motor[4] max current (Imax)	Locked[5] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[6] power (Watt)
ICON-010/30-SR1	30 / 22	12 / 9	8 - 17	40:1	0.127	3.00	5.50	9.30	38.8	0.91	328
ICON-010/30-SR2	30 / 22	12 / 9	18 - 62	20:1	0.343	3.80	8.70	13.20	79.2	0.95	433
ICON-010/30-SR3	30 / 22	12 / 9	63 - 94	20:1	0.440	7.00	9.80	22.00	55.1	0.95	798
ICON-010/90-SR1	90 / 66	36 / 26	6 - 23	40:1	0.221	5.50	10.70	23.00	37.2	0.90	594
ICON-010/90-SR2	90 / 66	36 / 26	24 - 40	20:1	0.343	3.80	8.70	13.20	79.2	0.95	433
ICON-020/180-SR1	180 / 132	72 / 53	10 - 20	40:1	0.631	12.80	16.00	25.00	45.6	0.90	1382

NOTES

1. Asyncronous motors with DELTA connections
2. The last digits in the model number represent the range of adjustable output speed (RPM) shown on the table
3. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
4. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
5. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
6. Absorbed power at nominal conditions (Watt)

MODULATING SERVICE S4-25%, 1200 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor[3] nominal current (Inom)	Motor[4] max current (Imax)	Locked[5] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[6] power (Watt)
ICON-010/30-SR1	30 / 22	12 / 9	8 - 17	40:1	0.127	3.00	5.50	9.30	38.8	0.91	328
ICON-010/30-SR2	30 / 22	12 / 9	24 - 72	20:1	0.440	7.00	9.80	22.00	55.1	0.95	798
ICON-010/30-SR3	30 / 22	12 / 9	73 - 90	20:1	0.882	11.80	13.00	25.00	64.9	0.96	1359
ICON-010/90-SR1	90 / 66	36 / 26	6 - 23	40:1	0.221	5.50	10.70	23.00	37.2	0.90	594
ICON-010/90-SR2	90 / 66	36 / 26	24 - 40	20:1	0.440	8.20	18.00	25.00	47.1	0.95	935
ICON-020/180-SR1	180 / 132	72 / 53	8 - 20	40:1	0.631	12.80	16.00	25.00	45.6	0.90	1382

NOTES

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2. The last digits in the model number represent the range of adjustable output speed (RPM) shown on the table
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4. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
5. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
6. Absorbed power at nominal conditions (Watt)

ON/OFF S2-15' OR INCHING SERVICE S4-25%, 60 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor[3] nominal current (Inom)	Motor[4] max current (Imax)	Locked[5] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[6] power (Watt)
ICON-010/30-SR1	30 / 22	12 / 9	8 - 17	40:1	0.106	1.10	1.80	4.00	46.0	0.91	230
ICON-010/30-SR2	30 / 22	12 / 9	24 - 72	20:1	0.367	2.70	5.30	11.00	62.2	0.95	590
ICON-010/30-SR3	30 / 22	12 / 9	73 - 172	20:1	0.735	6.80	9.00	20.00	49.0	0.96	1501
ICON-010/90-SR1	90 / 66	36 / 26	6 - 23	40:1	0.184	3.20	5.50	11.50	27.8	0.90	662
ICON-010/90-SR2	90 / 66	36 / 26	24 - 95	20:1	0.789	7.70	12.00	27.00	47.4	0.94	1665
ICON-010/90-SR3	90 / 66	36 / 26	96 - 120	20:1	1.470	10.50	15.00	40.00	66.9	0.91	2198
ICON-020/180-SR1	180 / 132	72 / 53	12 - 36	40:1	0.789	6.50	10.50	18.00	56.7	0.93	1390
ICON-020/180-SR2	180 / 132	72 / 53	48 - 60	20:1	0.789	9.50	16.00	40.00	39.2	0.92	2010
ICON-030/360-SR1	360 / 265	144 / 106	10 - 30	40:1	1.123	12.00	16.50	25.00	42.8	0.95	2622

NOTES

1. Asyncronous motors with DELTA connections
2. The last digits in the model number represent the range of adjustable output speed (RPM) shown on the table
3. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
4. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
5. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
6. Absorbed power at nominal conditions (Watt)

MODULATING SERVICE S4-25%, 1200 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor[3] nominal current (Inom)	Motor[4] max current (Imax)	Locked[5] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[6] power (Watt)
ICON-010/30-SR1	30 / 22	12 / 9	8 - 17	40:1	0.106	1.10	1.80	4.00	46.0	0.91	230
ICON-010/30-SR2	30 / 22	12 / 9	24 - 72	20:1	0.367	2.70	5.30	11.00	62.2	0.95	590
ICON-010/30-SR3	30 / 22	12 / 9	73 - 95	20:1	0.735	6.80	9.00	20.00	49.0	0.96	1501
ICON-010/90-SR1	90 / 66	36 / 26	6 - 23	40:1	0.184	3.20	5.50	11.50	27.8	0.90	662
ICON-010/90-SR2	90 / 66	36 / 26	24 - 95	20:1	0.500	3.20	6.90	17.50	72.3	0.94	692
ICON-020/180-SR1	180 / 132	72 / 53	12 - 36	40:1	0.789	6.50	10.50	18.00	56.7	0.93	1390
ICON-020/180-SR2	180 / 132	72 / 53	48 - 60	20:1	0.789	9.50	16.00	40.00	39.2	0.92	2010
ICON-030/360-SR1	360 / 265	144 / 106	10 - 30	40:1	1.123	12.00	16.50	25.00	42.8	0.95	2622

NOTES

1. Asyncronous motors with DELTA connections
2. The last digits in the model number represent the range of adjustable output speed (RPM) shown on the table
3. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
4. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
5. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
6. Absorbed power at nominal conditions (Watt)

ON/OFF S2-15' OR INCHING SERVICE S4-25%, 60 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor[3] nominal current (Inom)	Motor[4] max current (Imax)	Locked[5] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[6] power (Watt)
ICON-010/30-SR1	30 / 22	12 / 9	8 - 17	40:1	0.127	1.27	2.07	4.60	46.0	0.91	276
ICON-010/30-SR2	30 / 22	12 / 9	24 - 72	20:1	0.440	3.11	6.10	12.65	62.2	0.95	708
ICON-010/30-SR3	30 / 22	12 / 9	73 - 172	20:1	0.882	7.82	10.35	23.00	49.0	0.96	1802
ICON-010/90-SR1	90 / 66	36 / 26	6 - 23	40:1	0.221	3.68	6.33	13.23	27.8	0.90	795
ICON-010/90-SR2	90 / 66	36 / 26	24 - 95	20:1	0.947	8.86	13.80	31.05	47.4	0.94	1998
ICON-010/90-SR3	90 / 66	36 / 26	96 - 120	20:1	1.764	9.78	17.25	46.00	82.6	0.91	2135
ICON-020/180-SR1	180 / 132	72 / 53	12 - 36	40:1	0.947	7.48	12.08	20.70	56.8	0.93	1668
ICON-020/180-SR2	180 / 132	72 / 53	48 - 60	20:1	0.947	11.50	18.40	46.00	37.3	0.92	2539
ICON-030/360-SR1	360 / 265	144 / 106	10 - 30	40:1	1.348	13.80	18.98	28.75	42.8	0.95	3146

NOTES

1. Asyncronous motors with DELTA connections
2. The last digits in the model number represent the range of adjustable output speed (RPM) shown on the table
3. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
4. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
5. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
6. Absorbed power at nominal conditions (Watt)

MODULATING SERVICE S4-25%, 1200 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor[3] nominal current (Inom)	Motor[4] max current (Imax)	Locked[5] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[6] power (Watt)
ICON-010/30-SR1	30 / 22	12 / 9	8 - 17	40:1	0.127	1.27	2.07	4.60	46.0	0.91	276
ICON-010/30-SR2	30 / 22	12 / 9	24 - 72	20:1	0.440	3.11	6.10	12.65	62.2	0.95	708
ICON-010/30-SR3	30 / 22	12 / 9	73 - 95	20:1	0.882	7.82	10.35	23.00	49.0	0.96	1802
ICON-010/90-SR1	90 / 66	36 / 26	6 - 23	40:1	0.221	3.68	6.33	13.23	27.8	0.90	795
ICON-010/90-SR2	90 / 66	36 / 26	24 - 95	20:1	0.600	3.72	8.02	20.25	73.0	0.92	821
ICON-020/180-SR1	180 / 132	72 / 53	12 - 36	40:1	0.947	7.48	12.08	20.70	56.8	0.93	1668
ICON-020/180-SR2	180 / 132	72 / 53	48 - 60	20:1	0.947	11.50	18.40	46.00	37.3	0.92	2539
ICON-030/360-SR1	360 / 265	144 / 106	10 - 30	40:1	1.348	13.80	18.98	28.75	42.8	0.95	3146

NOTES

1. Asyncronous motors with DELTA connections
2. The last digits in the model number represent the range of adjustable output speed (RPM) shown on the table
3. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
4. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
5. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
6. Absorbed power at nominal conditions (Watt)

ON/OFF S2-15' OR INCHING SERVICE S4-25%, 60 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor RPM	Motor[1] nominal current (Inom)	Motor[2] max current (Imax)	Locked[3] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[4] power (Watt)
ICON-010/30-12	30 / 22	12 / 9	12	40:1	0.030	488	0.44	0.51	0.68	22.4	0.46	134
ICON-010/30-18	30 / 22	12 / 9	18	40:1	0.046	732	0.46	0.58	0.89	35.9	0.42	128
ICON-010/30-24	30 / 22	12 / 9	24	20:1	0.071	488	1.26	1.37	1.79	19.9	0.43	357
ICON-010/30-36	30 / 22	12 / 9	36	20:1	0.106	732	1.16	1.37	2.32	32.3	0.43	328
ICON-010/30-48	30 / 22	12 / 9	48	20:1	0.142	975	0.99	1.16	2.42	46.4	0.47	306
ICON-010/30-72	30 / 22	12 / 9	72	20:1	0.213	1463	0.86	1.26	3.47	67.0	0.56	318
ICON-010/30-144	30 / 22	12 / 9	144	20:1	0.426	2926	1.32	2.21	6.32	69.3	0.71	615
ICON-010/90-12	90 / 66	36 / 26	12	40:1	0.071	488	1.26	1.37	1.79	19.9	0.43	357
ICON-010/90-18	90 / 66	36 / 26	18	40:1	0.106	732	1.16	1.37	2.32	32.3	0.43	328
ICON-010/90-24	90 / 66	36 / 26	24	20:1	0.122	488	2.11	2.21	3.16	19.1	0.46	637
ICON-010/90-36	90 / 66	36 / 26	36	20:1	0.184	732	1.68	2.00	3.89	40.5	0.41	454
ICON-010/90-48	90 / 66	36 / 26	48	20:1	0.286	975	1.53	1.89	4.84	61.9	0.46	462
ICON-010/90-72	90 / 66	36 / 26	72	20:1	0.367	1463	1.79	2.63	7.89	56.7	0.55	648
ICON-010/90-144	90 / 66	36 / 26	144	20:1	0.735	2926	2.32	4.63	12.63	72.0	0.67	1021
ICON-020/180-12	180 / 132	72 / 53	12	40:1	0.122	488	2.11	2.21	3.16	19.1	0.46	637
ICON-020/180-18	180 / 132	72 / 53	18	40:1	0.184	732	1.68	2.00	3.89	40.5	0.41	454
ICON-020/180-24	180 / 132	72 / 53	24	40:1	0.286	975	1.53	1.89	4.84	61.9	0.46	462
ICON-020/180-36	180 / 132	72 / 53	36	40:1	0.367	1463	1.79	2.63	7.89	56.7	0.55	648
ICON-020/180-48	180 / 132	72 / 53	48	20:1	0.526	975	3.26	4.11	10.32	57.0	0.43	924
ICON-020/180-72	180 / 132	72 / 53	72	20:1	0.789	1463	2.84	4.53	12.63	69.1	0.61	1141
ICON-020/180-144	180 / 132	72 / 53	144	20:1	1.470	2926	4.21	7.89	24.21	79.2	0.67	1857
ICON-030/360-12	360 / 265	144 / 106	12	80:1	0.526	975	3.26	4.11	10.32	57.0	0.43	924
ICON-030/360-18	360 / 265	144 / 106	18	40:1	0.500	730	3.05	5.05	10.00	64.6	0.39	775
ICON-030/360-24	360 / 265	144 / 106	24	40:1	0.526	975	3.26	4.11	10.32	57.0	0.43	924
ICON-030/360-36	360 / 265	144 / 106	36	40:1	0.789	1463	2.84	4.53	12.63	69.1	0.61	1141
ICON-030/360-48	360 / 265	144 / 106	48	20:1	1.123	975	5.68	12.74	20.53	69.8	0.43	1609
ICON-030/360-72	360 / 265	144 / 106	72	40:1	1.470	2926	4.21	7.89	24.21	79.2	0.67	1857
ICON-030/360-144	360 / 265	144 / 106	144	20:1	3.368	2926	9.26	18.53	54.74	81.2	0.68	4146
ICON-040/720-12	720 / 531	288 / 212	12	80:1	1.123	975	5.68	12.74	20.53	69.8	0.43	1609
ICON-040/720-18	720 / 531	288 / 212	18	40:1	0.840	730	4.95	8.42	15.79	66.2	0.39	1268
ICON-040/720-24	720 / 531	288 / 212	24	40:1	1.123	975	5.68	12.74	20.53	69.8	0.43	1609
ICON-040/720-36	720 / 531	288 / 212	36	40:1	1.684	1463	4.53	6.84	31.58	84.4	0.67	1996
ICON-040/720-48	720 / 531	288 / 212	48	20:1	1.939	975	8.00	13.68	26.32	75.2	0.49	2580
ICON-040/720-72	720 / 531	288 / 212	72	40:1	3.368	2926	9.26	18.53	54.74	81.2	0.68	4146
ICON-040/720-144	720 / 531	288 / 212	144	20:1	5.818	2926	14.11	29.47	87.37	85.8	0.73	6777
ICON-050/1440-12	1440 /1062	576 / 425	12	80:1	1.939	975	8.00	13.68	26.32	75.2	0.49	2580
ICON-050/1440-18	1440 /1062	576 / 425	18	80:1	1.684	1463	4.53	6.84	31.58	84.4	0.67	1996
ICON-050/1440-24	1440 /1062	576 / 425	24	40.1	1.939	975	8.00	13.68	26.32	75.2	0.49	2580
ICON-050/1440-36	1440 /1062	576 / 425	36	40:1	2.885	1449	9.74	15.79	73.68	80.4	0.56	3589
ICON-050/1440-48	1440 /1062	576 / 425	48	20:1	3.879	975	11.58	20.00	84.21	83.4	0.61	4649
ICON-050/1440-72	1440 /1062	576 / 425	72	40:1	5.818	2926	14.11	29.47	87.37	85.8	0.73	6777
ICON-050/1440-144	1440 /1062	576 / 425	144	20:1	11.636	2926	28.95	60.00	136.84	86.0	0.71	13527

NOTES

1. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
2. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
3. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
4. Absorbed power at nominal conditions (Watt)

ON/OFF S2-30' OR INCHING SERVICE S4-25%, 600 STARTS/hr; MODULATING SERVICE S4-50%, 1200 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor RPM	Motor[1] nominal current (Inom)	Motor[2] max current (Imax)	Locked[3] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[4] power (Watt)
ICON-010/30-12	30 / 22	12 / 9	12	40:1	0.030	488	0.44	0.51	0.68	22.4	0.46	134
ICON-010/30-18	30 / 22	12 / 9	18	40:1	0.046	732	0.46	0.58	0.89	35.9	0.42	128
ICON-010/30-24	30 / 22	12 / 9	24	20:1	0.071	488	1.26	1.37	1.79	19.9	0.43	357
ICON-010/30-36	30 / 22	12 / 9	36	20:1	0.106	732	1.16	1.37	2.32	32.3	0.43	328
ICON-010/30-48	30 / 22	12 / 9	48	20:1	0.142	975	0.99	1.16	2.42	46.4	0.47	306
ICON-010/30-72	30 / 22	12 / 9	72	20:1	0.213	1463	0.86	1.26	3.47	67.0	0.56	318
ICON-010/90-12	90 / 66	36 / 26	12	40:1	0.071	488	1.26	1.37	1.79	19.9	0.43	357
ICON-010/90-18	90 / 66	36 / 26	18	40:1	0.106	732	1.16	1.37	2.32	32.3	0.43	328
ICON-010/90-24	90 / 66	36 / 26	24	20:1	0.122	488	2.11	2.21	3.16	19.1	0.46	637
ICON-010/90-36	90 / 66	36 / 26	36	20:1	0.184	732	1.68	2.00	3.89	40.5	0.41	454
ICON-010/90-48	90 / 66	36 / 26	48	20:1	0.286	975	1.53	1.89	4.84	61.9	0.46	462
ICON-010/90-72	90 / 66	36 / 26	72	20:1	0.367	1463	1.79	2.63	7.89	56.7	0.55	648
ICON-020/180-12	180 / 132	72 / 53	12	40:1	0.122	488	2.11	2.21	3.16	19.1	0.46	637
ICON-020/180-18	180 / 132	72 / 53	18	40:1	0.184	732	1.68	2.00	3.89	40.5	0.41	454
ICON-020/180-24	180 / 132	72 / 53	24	40:1	0.286	975	1.53	1.89	4.84	61.9	0.46	462
ICON-020/180-36	180 / 132	72 / 53	36	40:1	0.367	1463	1.79	2.63	7.89	56.7	0.55	648
ICON-020/180-48	180 / 132	72 / 53	48	20:1	0.526	975	3.26	4.11	10.32	57.0	0.43	924
ICON-020/180-72	180 / 132	72 / 53	72	20:1	0.789	1463	2.84	4.53	12.63	69.1	0.61	1141
ICON-030/360-24	360 / 265	144 / 106	24	40:1	0.526	975	3.26	4.11	10.32	57.0	0.43	924
ICON-030/360-36	360 / 265	144 / 106	36	40:1	0.789	1463	2.84	4.53	12.63	69.1	0.61	1141
ICON-030/360-48	360 / 265	144 / 106	48	20:1	1.123	975	5.68	12.74	20.53	69.8	0.43	1609
ICON-040/720-24	720 / 531	288 / 212	24	40:1	1.123	975	5.68	12.74	20.53	69.8	0.43	1609

NOTES

1. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
2. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
3. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
4. Absorbed power at nominal conditions (Watt)

ON/OFF S2-30' OR INCHING SERVICE S4-25%, 600 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor RPM	Motor[1] nominal current (Inom)	Motor[2] max current (Imax)	Locked[3] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[4] power (Watt)
ICON-010/30-144	30 / 22	12 / 9	144	20:1	0.426	2926	1.32	2.21	6.32	69.3	0.71	615
ICON-010/90-144	90 / 66	36 / 26	144	20:1	0.735	2926	2.32	4.63	12.63	72.0	0.67	1021
ICON-020/180-144	180 / 132	72 / 53	144	20:1	1.470	2926	4.21	7.89	24.21	79.2	0.67	1857
ICON-030/360-72	360 / 265	144 / 106	72	40:1	1.470	2926	4.21	7.89	24.21	79.2	0.67	1857
ICON-030/360-144	360 / 265	144 / 106	144	20:1	3.368	2926	9.26	18.53	54.74	81.2	0.68	4146
ICON-040/720-36	720 / 531	288 / 212	36	40:1	1.684	1463	4.53	6.84	31.58	84.4	0.67	1996
ICON-040/720-72	720 / 531	288 / 212	72	40:1	3.368	2926	9.26	18.53	54.74	81.2	0.68	4146

NOTES

1. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
2. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
3. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
4. Absorbed power at nominal conditions (Watt)

ON/OFF S2-15' OR INCHING SERVICE S4-25%, 60 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor RPM	Motor[1] nominal current (Inom)	Motor[2] max current (Imax)	Locked[3] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[4] power (Watt)
ICON-010/30-14	30 / 22	12 / 9	14	40:1	0.036	586	0.53	0.61	0.76	22.4	0.46	161
ICON-010/30-22	30 / 22	12 / 9	22	40:1	0.055	878	0.56	0.69	1.06	35.8	0.42	154
ICON-010/30-29	30 / 22	12 / 9	29	20:1	0.085	585	1.71	1.89	2.53	19.9	0.38	427
ICON-010/30-43	30 / 22	12 / 9	43	20:1	0.128	878	1.52	1.77	3.28	32.9	0.39	389
ICON-010/30-58	30 / 22	12 / 9	58	20:1	0.170	1170	1.19	1.39	2.84	46.3	0.47	367
ICON-010/30-86	30 / 22	12 / 9	86	20:1	0.255	1756	1.04	1.52	4.11	66.8	0.56	382
ICON-010/30-173	30 / 22	12 / 9	173	20:1	0.511	3511	1.58	2.65	7.45	69.3	0.71	738
ICON-010/90-14	90 / 66	36 / 26	14	40:1	0.085	585	1.71	1.89	2.53	19.9	0.38	427
ICON-010/90-22	90 / 66	36 / 26	22	40:1	0.128	878	1.52	1.77	3.28	32.9	0.39	389
ICON-010/90-29	90 / 66	36 / 26	29	20:1	0.147	585	2.78	3.03	4.42	19.1	0.42	768
ICON-010/90-43	90 / 66	36 / 26	43	20:1	0.220	878	2.02	2.53	5.56	40.3	0.41	545
ICON-010/90-58	90 / 66	36 / 26	58	20:1	0.343	1170	1.89	2.40	6.82	64.0	0.43	536
ICON-010/90-86	90 / 66	36 / 26	86	20:1	0.441	1756	2.15	3.16	10.86	62.4	0.50	707
ICON-010/90-173	90 / 66	36 / 26	173	20:1	0.882	3511	2.65	5.56	17.68	85.6	0.59	1030
ICON-020/180-14	180 / 132	72 / 53	14	40:1	0.147	585	2.78	3.03	4.42	19.1	0.42	768
ICON-020/180-22	180 / 132	72 / 53	22	40:1	0.220	878	2.02	2.53	5.56	40.3	0.41	545
ICON-020/180-29	180 / 132	72 / 53	29	40:1	0.343	1170	1.89	2.40	6.82	64.0	0.43	536
ICON-020/180-43	180 / 132	72 / 53	43	40:1	0.441	1756	2.15	3.16	10.86	62.4	0.50	707
ICON-020/180-58	180 / 132	72 / 53	58	20:1	0.631	1170	4.04	5.05	13.89	57.8	0.41	1091
ICON-020/180-86	180 / 132	72 / 53	86	20:1	0.946	1756	3.54	5.68	18.32	68.9	0.59	1373
ICON-020/180-173	180 / 132	72 / 53	173	20:1	1.764	3511	5.05	9.47	30.32	76.9	0.69	2295
ICON-030/360-14	360 / 265	144 / 106	14	80:1	0.631	1170	4.04	5.05	13.89	57.8	0.41	1091
ICON-030/360-22	360 / 265	144 / 106	22	40:1	0.600	876	3.79	5.94	18.95	60.1	0.40	998
ICON-030/360-29	360 / 265	144 / 106	29	40:1	0.631	1170	4.04	5.05	13.89	57.8	0.41	1091
ICON-030/360-43	360 / 265	144 / 106	43	40:1	0.946	1756	3.54	5.68	18.32	68.9	0.59	1373
ICON-030/360-58	360 / 265	144 / 106	58	20:1	1.347	1170	6.82	15.16	24.00	69.8	0.43	1930
ICON-030/360-86	360 / 265	144 / 106	86	40:1	1.764	3511	5.05	9.47	30.32	76.9	0.69	2295
ICON-030/360-173	360 / 265	144 / 106	173	20:1	4.042	3511	11.12	22.11	65.68	82.5	0.67	4902
ICON-040/720-14	720 / 531	288 / 212	14	80:1	1.347	1170	6.82	15.16	24.00	69.8	0.43	1930
ICON-040/720-22	720 / 531	288 / 212	22	40:1	1.008	876	6.06	10.11	21.47	60.1	0.42	1676
ICON-040/720-29	720 / 531	288 / 212	29	40:1	1.347	1170	6.82	15.16	24.00	69.8	0.43	1930
ICON-040/720-43	720 / 531	288 / 212	43	40:1	2.021	1756	5.43	8.21	37.89	84.4	0.67	2395
ICON-040/720-58	720 / 531	288 / 212	58	20:1	2.327	1170	9.73	16.42	32.84	77.3	0.47	3009
ICON-040/720-86	720 / 531	288 / 212	86	40:1	4.042	3511	11.12	22.11	65.68	82.5	0.67	4902
ICON-040/720-173	720 / 531	288 / 212	173	20:1	6.982	3511	18.32	37.89	111.16	85.2	0.68	8197
ICON-050/1440-14	1440 /1062	576 / 425	14	80:1	2.327	1170	9.73	16.42	32.84	77.3	0.47	3009
ICON-050/1440-22	1440 /1062	576 / 425	22	80:1	2.021	1756	5.43	8.21	37.89	84.4	0.67	2395
ICON-050/1440-29	1440 /1062	576 / 425	29	40.1	2.327	1170	9.73	16.42	32.84	77.3	0.47	3009
ICON-050/1440-43	1440 /1062	576 / 425	43	40:1	3.462	1740	12.63	19.58	90.95	71.8	0.58	4822
ICON-050/1440-58	1440 /1062	576 / 425	58	20:1	4.655	1170	15.16	25.89	106.11	84.8	0.55	5487
ICON-050/1440-86	1440 /1062	576 / 425	86	40:1	6.982	3511	18.32	37.89	111.16	85.2	0.68	8197
ICON-050/1440-173	1440 /1062	576 / 425	173	20:1	13.964	3511	37.89	75.79	174.32	83.6	0.67	16711

NOTES

1. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
2. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
3. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
4. Absorbed power at nominal conditions (Watt)

ON/OFF S2-15' OR INCHING SERVICE S4-25%, 60 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor RPM	Motor[1] nominal current (Inom)	Motor[2] max current (Imax)	Locked[3] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[4] power (Watt)
ICON-010/30-12	30 / 22	12 / 9	12	40:1	0.030	488	0.40	0.46	0.63	22.4	0.46	134
ICON-010/30-18	30 / 22	12 / 9	18	40:1	0.046	732	0.42	0.53	0.82	35.9	0.42	128
ICON-010/30-24	30 / 22	12 / 9	24	20:1	0.071	488	1.16	1.25	1.64	19.9	0.43	357
ICON-010/30-36	30 / 22	12 / 9	36	20:1	0.106	732	1.06	1.25	2.12	32.3	0.43	328
ICON-010/30-48	30 / 22	12 / 9	48	20:1	0.142	975	0.91	1.06	2.22	46.4	0.47	306
ICON-010/30-72	30 / 22	12 / 9	72	20:1	0.213	1463	0.79	1.16	3.18	67.0	0.56	318
ICON-010/30-144	30 / 22	12 / 9	144	20:1	0.426	2926	1.20	2.02	5.78	69.3	0.71	615
ICON-010/90-12	90 / 66	36 / 26	12	40:1	0.071	488	1.16	1.25	1.64	19.9	0.43	357
ICON-010/90-18	90 / 66	36 / 26	18	40:1	0.106	732	1.06	1.25	2.12	32.3	0.43	328
ICON-010/90-24	90 / 66	36 / 26	24	20:1	0.122	488	1.93	2.02	2.89	19.1	0.46	637
ICON-010/90-36	90 / 66	36 / 26	36	20:1	0.184	732	1.54	1.83	3.57	40.5	0.41	454
ICON-010/90-48	90 / 66	36 / 26	48	20:1	0.286	975	1.40	1.73	4.43	61.9	0.46	462
ICON-010/90-72	90 / 66	36 / 26	72	20:1	0.367	1463	1.64	2.41	7.23	56.7	0.55	648
ICON-010/90-144	90 / 66	36 / 26	144	20:1	0.735	2926	2.12	4.24	11.57	72.0	0.67	1021
ICON-020/180-12	180 / 132	72 / 53	12	40:1	0.122	488	1.93	2.02	2.89	19.1	0.46	637
ICON-020/180-18	180 / 132	72 / 53	18	40:1	0.184	732	1.54	1.83	3.57	40.5	0.41	454
ICON-020/180-24	180 / 132	72 / 53	24	40:1	0.286	975	1.40	1.73	4.43	61.9	0.46	462
ICON-020/180-36	180 / 132	72 / 53	36	40:1	0.367	1463	1.64	2.41	7.23	56.7	0.55	648
ICON-020/180-48	180 / 132	72 / 53	48	20:1	0.526	975	2.99	3.76	9.45	57.0	0.43	924
ICON-020/180-72	180 / 132	72 / 53	72	20:1	0.789	1463	2.60	4.14	11.57	69.1	0.61	1141
ICON-020/180-144	180 / 132	72 / 53	144	20:1	1.470	2926	3.86	7.23	22.17	79.2	0.67	1857
ICON-030/360-12	360 / 265	144 / 106	12	80:1	0.526	975	2.99	3.76	9.45	57.0	0.43	924
ICON-030/360-18	360 / 265	144 / 106	18	40:1	0.500	730	2.80	4.63	9.16	64.6	0.39	775
ICON-030/360-24	360 / 265	144 / 106	24	40:1	0.526	975	2.99	3.76	9.45	57.0	0.43	924
ICON-030/360-36	360 / 265	144 / 106	36	40:1	0.789	1463	2.60	4.14	11.57	69.1	0.61	1141
ICON-030/360-48	360 / 265	144 / 106	48	20:1	1.123	975	5.20	11.66	18.80	69.8	0.43	1609
ICON-030/360-72	360 / 265	144 / 106	72	40:1	1.470	2926	3.86	7.23	22.17	79.2	0.67	1857
ICON-030/360-144	360 / 265	144 / 106	144	20:1	3.368	2926	8.48	16.96	50.12	81.2	0.68	4146
ICON-040/720-12	720 / 531	288 / 212	12	80:1	1.123	975	5.20	11.66	18.80	69.8	0.43	1609
ICON-040/720-18	720 / 531	288 / 212	18	40:1	0.840	730	4.53	7.71	14.46	66.2	0.39	1268
ICON-040/720-24	720 / 531	288 / 212	24	40:1	1.123	975	5.20	11.66	18.80	69.8	0.43	1609
ICON-040/720-36	720 / 531	288 / 212	36	40:1	1.684	1463	4.14	6.27	28.92	84.4	0.67	1996
ICON-040/720-48	720 / 531	288 / 212	48	20:1	1.939	975	7.33	12.53	24.10	75.2	0.49	2580
ICON-040/720-72	720 / 531	288 / 212	72	40:1	3.368	2926	8.48	16.96	50.12	81.2	0.68	4146
ICON-040/720-144	720 / 531	288 / 212	144	20:1	5.818	2926	12.92	26.99	80.00	85.8	0.73	6777
ICON-050/1440-12	1440 /1062	576 / 425	12	80:1	1.939	975	7.33	12.53	24.10	75.2	0.49	2580
ICON-050/1440-18	1440 /1062	576 / 425	18	80:1	1.684	1463	4.14	6.27	28.92	84.4	0.67	1996
ICON-050/1440-24	1440 /1062	576 / 425	24	40.1	1.939	975	7.33	12.53	24.10	75.2	0.49	2580
ICON-050/1440-36	1440 /1062	576 / 425	36	40:1	2.885	1449	8.92	14.46	67.47	80.4	0.56	3589
ICON-050/1440-48	1440 /1062	576 / 425	48	20:1	3.879	975	10.60	18.31	77.11	83.4	0.61	4649
ICON-050/1440-72	1440 /1062	576 / 425	72	40:1	5.818	2926	12.92	26.99	80.00	85.8	0.73	6777
ICON-050/1440-144	1440 /1062	576 / 425	144	20:1	11.636	2926	26.51	54.94	125.30	86.0	0.71	13527

NOTES

1. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
2. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
3. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
4. Absorbed power at nominal conditions (Watt)

ON/OFF S2-30' OR INCHING SERVICE S4-25%, 600 STARTS/hr; MODULATING SERVICE S4-50%, 1200 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor RPM	Motor[1] nominal current (Inom)	Motor[2] max current (Imax)	Locked[3] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[4] power (Watt)
ICON-010/30-12	30 / 22	12 / 9	12	40:1	0.030	488	0.40	0.46	0.63	22.4	0.46	134
ICON-010/30-18	30 / 22	12 / 9	18	40:1	0.046	732	0.42	0.53	0.82	35.9	0.42	128
ICON-010/30-24	30 / 22	12 / 9	24	20:1	0.071	488	1.16	1.25	1.64	19.9	0.43	357
ICON-010/30-36	30 / 22	12 / 9	36	20:1	0.106	732	1.06	1.25	2.12	32.3	0.43	328
ICON-010/30-48	30 / 22	12 / 9	48	20:1	0.142	975	0.91	1.06	2.22	46.4	0.47	306
ICON-010/30-72	30 / 22	12 / 9	72	20:1	0.213	1463	0.79	1.16	3.18	67.0	0.56	318
ICON-010/90-12	90 / 66	36 / 26	12	40:1	0.071	488	1.16	1.25	1.64	19.9	0.43	357
ICON-010/90-18	90 / 66	36 / 26	18	40:1	0.106	732	1.06	1.25	2.12	32.3	0.43	328
ICON-010/90-24	90 / 66	36 / 26	24	20:1	0.122	488	1.93	2.02	2.89	19.1	0.46	637
ICON-010/90-36	90 / 66	36 / 26	36	20:1	0.184	732	1.54	1.83	3.57	40.5	0.41	454
ICON-010/90-48	90 / 66	36 / 26	48	20:1	0.286	975	1.40	1.73	4.43	61.9	0.46	462
ICON-010/90-72	90 / 66	36 / 26	72	20:1	0.367	1463	1.64	2.41	7.23	56.7	0.55	648
ICON-020/180-12	180 / 132	72 / 53	12	40:1	0.122	488	1.93	2.02	2.89	19.1	0.46	637
ICON-020/180-18	180 / 132	72 / 53	18	40:1	0.184	732	1.54	1.83	3.57	40.5	0.41	454
ICON-020/180-24	180 / 132	72 / 53	24	40:1	0.286	975	1.40	1.73	4.43	61.9	0.46	462
ICON-020/180-36	180 / 132	72 / 53	36	40:1	0.367	1463	1.64	2.41	7.23	56.7	0.55	648
ICON-020/180-48	180 / 132	72 / 53	48	20:1	0.526	975	2.99	3.76	9.45	57.0	0.43	924
ICON-020/180-72	180 / 132	72 / 53	72	20:1	0.789	1463	2.60	4.14	11.57	69.1	0.61	1141
ICON-030/360-24	360 / 265	144 / 106	24	40:1	0.526	975	2.99	3.76	9.45	57.0	0.43	924
ICON-030/360-36	360 / 265	144 / 106	36	40:1	0.789	1463	2.60	4.14	11.57	69.1	0.61	1141
ICON-030/360-48	360 / 265	144 / 106	48	20:1	1.123	975	5.20	11.66	18.80	69.8	0.43	1609
ICON-040/720-24	720 / 531	288 / 212	24	40:1	1.123	975	5.20	11.66	18.80	69.8	0.43	1609

NOTES

1. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
2. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
3. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
4. Absorbed power at nominal conditions (Watt)

ON/OFF S2-30' OR INCHING SERVICE S4-25%, 600 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor RPM	Motor[1] nominal current (Inom)	Motor[2] max current (Imax)	Locked[3] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[4] power (Watt)
ICON-010/30-144	30 / 22	12 / 9	144	20:1	0.426	2926	1.20	2.02	5.78	69.3	0.71	615
ICON-010/90-144	90 / 66	36 / 26	144	20:1	0.735	2926	2.12	4.24	11.57	72.0	0.67	1021
ICON-020/180-144	180 / 132	72 / 53	144	20:1	1.470	2926	3.86	7.23	22.17	79.2	0.67	1857
ICON-030/360-72	360 / 265	144 / 106	72	40:1	1.470	2926	3.86	7.23	22.17	79.2	0.67	1857
ICON-030/360-144	360 / 265	144 / 106	144	20:1	3.368	2926	8.48	16.96	50.12	81.2	0.68	4146
ICON-040/720-36	720 / 531	288 / 212	36	40:1	1.684	1463	4.14	6.27	28.92	84.4	0.67	1996
ICON-040/720-72	720 / 531	288 / 212	72	40:1	3.368	2926	8.48	16.96	50.12	81.2	0.68	4146

NOTES

1. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
2. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
3. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
4. Absorbed power at nominal conditions (Watt)

ON/OFF S2-15' OR INCHING SERVICE S4-25%, 60 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor RPM	Motor[1] nominal current (Inom)	Motor[2] max current (Imax)	Locked[3] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[4] power (Watt)
ICON-010/30-14	30 / 22	12 / 9	14	40:1	0.036	586	0.49	0.56	0.69	22.4	0.46	161
ICON-010/30-22	30 / 22	12 / 9	22	40:1	0.055	878	0.51	0.64	0.97	35.8	0.42	154
ICON-010/30-29	30 / 22	12 / 9	29	20:1	0.085	585	1.56	1.73	2.31	19.9	0.38	427
ICON-010/30-43	30 / 22	12 / 9	43	20:1	0.128	878	1.39	1.62	3.01	32.9	0.39	389
ICON-010/30-58	30 / 22	12 / 9	58	20:1	0.170	1170	1.09	1.27	2.60	46.3	0.47	367
ICON-010/30-86	30 / 22	12 / 9	86	20:1	0.255	1756	0.95	1.39	3.76	66.8	0.56	382
ICON-010/30-173	30 / 22	12 / 9	173	20:1	0.511	3511	1.45	2.43	6.82	69.3	0.71	738
ICON-010/90-14	90 / 66	36 / 26	14	40:1	0.085	585	1.56	1.73	2.31	19.9	0.38	427
ICON-010/90-22	90 / 66	36 / 26	22	40:1	0.128	878	1.39	1.62	3.01	32.9	0.39	389
ICON-010/90-29	90 / 66	36 / 26	29	20:1	0.147	585	2.54	2.78	4.05	19.1	0.42	768
ICON-010/90-43	90 / 66	36 / 26	43	20:1	0.220	878	1.85	2.31	5.09	40.3	0.41	545
ICON-010/90-58	90 / 66	36 / 26	58	20:1	0.343	1170	1.73	2.20	6.25	64.0	0.43	536
ICON-010/90-86	90 / 66	36 / 26	86	20:1	0.441	1756	1.97	2.89	9.95	62.4	0.50	707
ICON-010/90-173	90 / 66	36 / 26	173	20:1	0.882	3511	2.43	5.09	16.19	85.6	0.59	1030
ICON-020/180-14	180 / 132	72 / 53	14	40:1	0.147	585	2.54	2.78	4.05	19.1	0.42	768
ICON-020/180-22	180 / 132	72 / 53	22	40:1	0.220	878	1.85	2.31	5.09	40.3	0.41	545
ICON-020/180-29	180 / 132	72 / 53	29	40:1	0.343	1170	1.73	2.20	6.25	64.0	0.43	536
ICON-020/180-43	180 / 132	72 / 53	43	40:1	0.441	1756	1.97	2.89	9.95	62.4	0.50	707
ICON-020/180-58	180 / 132	72 / 53	58	20:1	0.631	1170	3.70	4.63	12.72	57.8	0.41	1091
ICON-020/180-86	180 / 132	72 / 53	86	20:1	0.946	1756	3.24	5.20	16.77	68.9	0.59	1373
ICON-020/180-173	180 / 132	72 / 53	173	20:1	1.764	3511	4.63	8.67	27.76	76.9	0.69	2295
ICON-030/360-14	360 / 265	144 / 106	14	80:1	0.631	1170	3.70	4.63	12.72	57.8	0.41	1091
ICON-030/360-22	360 / 265	144 / 106	22	40:1	0.600	876	3.47	5.44	17.35	60.1	0.40	998
ICON-030/360-29	360 / 265	144 / 106	29	40:1	0.631	1170	3.70	4.63	12.72	57.8	0.41	1091
ICON-030/360-43	360 / 265	144 / 106	43	40:1	0.946	1756	3.24	5.20	16.77	68.9	0.59	1373
ICON-030/360-58	360 / 265	144 / 106	58	20:1	1.347	1170	6.25	13.88	21.98	69.8	0.43	1930
ICON-030/360-86	360 / 265	144 / 106	86	40:1	1.764	3511	4.63	8.67	27.76	76.9	0.69	2295
ICON-030/360-173	360 / 265	144 / 106	173	20:1	4.042	3511	10.18	20.24	60.14	82.5	0.67	4902
ICON-040/720-14	720 / 531	288 / 212	14	80:1	1.347	1170	6.25	13.88	21.98	69.8	0.43	1930
ICON-040/720-22	720 / 531	288 / 212	22	40:1	1.008	876	5.55	9.25	19.66	60.1	0.42	1676
ICON-040/720-29	720 / 531	288 / 212	29	40:1	1.347	1170	6.25	13.88	21.98	69.8	0.43	1930
ICON-040/720-43	720 / 531	288 / 212	43	40:1	2.021	1756	4.97	7.52	34.70	84.4	0.67	2395
ICON-040/720-58	720 / 531	288 / 212	58	20:1	2.327	1170	8.91	15.04	30.07	77.3	0.47	3009
ICON-040/720-86	720 / 531	288 / 212	86	40:1	4.042	3511	10.18	20.24	60.14	82.5	0.67	4902
ICON-040/720-173	720 / 531	288 / 212	173	20:1	6.982	3511	16.77	34.70	101.78	85.2	0.68	8197
ICON-050/1440-14	1440 /1062	576 / 425	14	80:1	2.327	1170	8.91	15.04	30.07	77.3	0.47	3009
ICON-050/1440-22	1440 /1062	576 / 425	22	80:1	2.021	1756	4.97	7.52	34.70	84.4	0.67	2395
ICON-050/1440-29	1440 /1062	576 / 425	29	40.1	2.327	1170	8.91	15.04	30.07	77.3	0.47	3009
ICON-050/1440-43	1440 /1062	576 / 425	43	40:1	3.462	1740	11.57	17.93	83.28	71.8	0.58	4822
ICON-050/1440-58	1440 /1062	576 / 425	58	20:1	4.655	1170	13.88	23.71	97.16	84.8	0.55	5487
ICON-050/1440-86	1440 /1062	576 / 425	86	40:1	6.982	3511	16.77	34.70	101.78	85.2	0.68	8197
ICON-050/1440-173	1440 /1062	576 / 425	173	20:1	13.964	3511	34.70	69.40	159.61	83.6	0.67	16711

NOTES

1. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
2. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
3. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
4. Absorbed power at nominal conditions (Watt)

ON/OFF S2-30' OR INCHING SERVICE S4-25%, 600 STARTS/hr; MODULATING SERVICE S4-50%, 1200 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor RPM	Motor[1] nominal current (Inom)	Motor[2] max current (Imax)	Locked[3] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[4] power (Watt)
ICON-010/30-12	30 / 22	12 / 9	12	40:1	0.030	488	0.38	0.44	0.59	22.4	0.46	134
ICON-010/30-18	30 / 22	12 / 9	18	40:1	0.046	732	0.40	0.50	0.77	35.9	0.42	128
ICON-010/30-24	30 / 22	12 / 9	24	20:1	0.071	488	1.09	1.18	1.55	19.9	0.43	357
ICON-010/30-36	30 / 22	12 / 9	36	20:1	0.106	732	1.00	1.18	2.00	32.3	0.43	328
ICON-010/30-48	30 / 22	12 / 9	48	20:1	0.142	975	0.85	1.00	2.09	46.4	0.47	306
ICON-010/30-72	30 / 22	12 / 9	72	20:1	0.213	1463	0.75	1.09	3.00	67.0	0.56	318
ICON-010/90-12	90 / 66	36 / 26	12	40:1	0.071	488	1.09	1.18	1.55	19.9	0.43	357
ICON-010/90-18	90 / 66	36 / 26	18	40:1	0.106	732	1.00	1.18	2.00	32.3	0.43	328
ICON-010/90-24	90 / 66	36 / 26	24	20:1	0.122	488	1.82	1.91	2.73	19.1	0.46	637
ICON-010/90-36	90 / 66	36 / 26	36	20:1	0.184	732	1.45	1.73	3.36	40.5	0.41	454
ICON-010/90-48	90 / 66	36 / 26	48	20:1	0.286	975	1.32	1.64	4.18	61.9	0.46	462
ICON-010/90-72	90 / 66	36 / 26	72	20:1	0.367	1463	1.55	2.27	6.82	56.7	0.55	648
ICON-020/180-12	180 / 132	72 / 53	12	40:1	0.122	488	1.82	1.91	2.73	19.1	0.46	637
ICON-020/180-18	180 / 132	72 / 53	18	40:1	0.184	732	1.45	1.73	3.36	40.5	0.41	454
ICON-020/180-24	180 / 132	72 / 53	24	40:1	0.286	975	1.32	1.64	4.18	61.9	0.46	462
ICON-020/180-36	180 / 132	72 / 53	36	40:1	0.367	1463	1.55	2.27	6.82	56.7	0.55	648
ICON-020/180-48	180 / 132	72 / 53	48	20:1	0.526	975	2.82	3.55	8.91	57.0	0.43	924
ICON-020/180-72	180 / 132	72 / 53	72	20:1	0.789	1463	2.45	3.91	10.91	69.1	0.61	1141
ICON-030/360-24	360 / 265	144 / 106	24	40:1	0.526	975	2.82	3.55	8.91	57.0	0.43	924
ICON-030/360-36	360 / 265	144 / 106	36	40:1	0.789	1463	2.45	3.91	10.91	69.1	0.61	1141
ICON-030/360-48	360 / 265	144 / 106	48	20:1	1.123	975	4.91	11.00	17.73	69.8	0.43	1609
ICON-040/720-24	720 / 531	288 / 212	24	40:1	1.123	975	4.91	11.00	17.73	69.8	0.43	1609

NOTES

1. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
2. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
3. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
4. Absorbed power at nominal conditions (Watt)

ON/OFF S2-30' OR INCHING SERVICE S4-25%, 600 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor RPM	Motor[1] nominal current (Inom)	Motor[2] max current (Imax)	Locked[3] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[4] power (Watt)
ICON-010/30-144	30 / 22	12 / 9	144	20:1	0.426	2926	1.14	1.91	5.45	69.3	0.71	615
ICON-010/90-144	90 / 66	36 / 26	144	20:1	0.735	2926	2.00	4.00	10.91	72.0	0.67	1021
ICON-020/180-144	180 / 132	72 / 53	144	20:1	1.470	2926	3.64	6.82	20.91	79.2	0.67	1857
ICON-030/360-72	360 / 265	144 / 106	72	40:1	1.470	2926	3.64	6.82	20.91	79.2	0.67	1857
ICON-030/360-144	360 / 265	144 / 106	144	20:1	3.368	2926	8.00	16.00	47.27	81.2	0.68	4146
ICON-040/720-36	720 / 531	288 / 212	36	40:1	1.684	1463	3.91	5.91	27.27	84.4	0.67	1996
ICON-040/720-72	720 / 531	288 / 212	72	40:1	3.368	2926	8.00	16.00	47.27	81.2	0.68	4146

NOTES

1. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
2. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
3. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
4. Absorbed power at nominal conditions (Watt)

ON/OFF S2-15' OR INCHING SERVICE S4-25%, 60 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor RPM	Motor[1] nominal current (Inom)	Motor[2] max current (Imax)	Locked[3] rotor current (Icc)	Eff. % nom	Power factor	Absorbed[4] power (Watt)
ICON-010/30-14	30 / 22	12 / 9	14	40:1	0.036	586	0.44	0.50	0.63	22.4	0.46	161
ICON-010/30-22	30 / 22	12 / 9	22	40:1	0.055	878	0.46	0.57	0.88	35.8	0.42	154
ICON-010/30-29	30 / 22	12 / 9	29	20:1	0.085	585	1.41	1.57	2.09	19.9	0.38	427
ICON-010/30-43	30 / 22	12 / 9	43	20:1	0.128	878	1.25	1.46	2.71	32.9	0.39	389
ICON-010/30-58	30 / 22	12 / 9	58	20:1	0.170	1170	0.98	1.15	2.35	46.3	0.47	367
ICON-010/30-86	30 / 22	12 / 9	86	20:1	0.255	1756	0.86	1.25	3.39	66.8	0.56	382
ICON-010/30-173	30 / 22	12 / 9	173	20:1	0.511	3511	1.30	2.19	6.16	69.3	0.71	738
ICON-010/90-14	90 / 66	36 / 26	14	40:1	0.085	585	1.41	1.57	2.09	19.9	0.38	427
ICON-010/90-22	90 / 66	36 / 26	22	40:1	0.128	878	1.25	1.46	2.71	32.9	0.39	389
ICON-010/90-29	90 / 66	36 / 26	29	20:1	0.147	585	2.30	2.50	3.65	19.1	0.42	768
ICON-010/90-43	90 / 66	36 / 26	43	20:1	0.220	878	1.67	2.09	4.59	40.3	0.41	545
ICON-010/90-58	90 / 66	36 / 26	58	20:1	0.343	1170	1.57	1.98	5.63	64.0	0.43	536
ICON-010/90-86	90 / 66	36 / 26	86	20:1	0.441	1756	1.77	2.61	8.97	62.4	0.50	707
ICON-010/90-173	90 / 66	36 / 26	173	20:1	0.882	3511	2.19	4.59	14.61	85.6	0.59	1030
ICON-020/180-14	180 / 132	72 / 53	14	40:1	0.147	585	2.30	2.50	3.65	19.1	0.42	768
ICON-020/180-22	180 / 132	72 / 53	22	40:1	0.220	878	1.67	2.09	4.59	40.3	0.41	545
ICON-020/180-29	180 / 132	72 / 53	29	40:1	0.343	1170	1.57	1.98	5.63	64.0	0.43	536
ICON-020/180-43	180 / 132	72 / 53	43	40:1	0.441	1756	1.77	2.61	8.97	62.4	0.50	707
ICON-020/180-58	180 / 132	72 / 53	58	20:1	0.631	1170	3.34	4.17	11.48	57.8	0.41	1091
ICON-020/180-86	180 / 132	72 / 53	86	20:1	0.946	1756	2.92	4.70	15.13	68.9	0.59	1373
ICON-020/180-173	180 / 132	72 / 53	173	20:1	1.764	3511	4.17	7.83	25.04	76.9	0.69	2295
ICON-030/360-14	360 / 265	144 / 106	14	80:1	0.631	1170	3.34	4.17	11.48	57.8	0.41	1091
ICON-030/360-22	360 / 265	144 / 106	22	40:1	0.600	875	3.03	5.32	10.23	69.2	0.36	867
ICON-030/360-29	360 / 265	144 / 106	29	40:1	0.631	1170	3.34	4.17	11.48	57.8	0.41	1091
ICON-030/360-43	360 / 265	144 / 106	43	40:1	0.946	1756	2.92	4.70	15.13	68.9	0.59	1373
ICON-030/360-58	360 / 265	144 / 106	58	20:1	1.347	1170	5.63	12.52	19.83	69.8	0.43	1930
ICON-030/360-86	360 / 265	144 / 106	86	40:1	1.764	3511	4.17	7.83	25.04	76.9	0.69	2295
ICON-030/360-173	360 / 265	144 / 106	173	20:1	4.042	3511	9.18	18.26	54.26	82.5	0.67	4902
ICON-040/720-14	720 / 531	288 / 212	14	80:1	1.347	1170	5.63	12.52	19.83	69.8	0.43	1930
ICON-040/720-22	720 / 531	288 / 212	22	40:1	1.008	875	4.90	8.56	16.17	68.3	0.38	1475
ICON-040/720-29	720 / 531	288 / 212	29	40:1	1.347	1170	5.63	12.52	19.83	69.8	0.43	1930
ICON-040/720-43	720 / 531	288 / 212	43	40:1	2.021	1756	4.49	6.78	31.30	84.4	0.67	2395
ICON-040/720-58	720 / 531	288 / 212	58	20:1	2.327	1170	8.03	13.57	27.13	77.3	0.47	3009
ICON-040/720-86	720 / 531	288 / 212	86	40:1	4.042	3511	9.18	18.26	54.26	82.5	0.67	4902
ICON-040/720-173	720 / 531	288 / 212	173	20:1	6.982	3511	15.13	31.30	91.83	85.2	0.68	8197
ICON-050/1440-14	1440 /1062	576 / 425	14	80:1	2.327	1170	8.03	13.57	27.13	77.3	0.47	3009
ICON-050/1440-22	1440 /1062	576 / 425	22	80:1	2.021	1756	4.49	6.78	31.30	84.4	0.67	2395
ICON-050/1440-29	1440 /1062	576 / 425	29	40.1	2.327	1170	8.03	13.57	27.13	77.3	0.47	3009
ICON-050/1440-43	1440 /1062	576 / 425	43	40:1	3.462	1739	9.65	16.25	73.00	80.4	0.56	4306
ICON-050/1440-58	1440 /1062	576 / 425	58	20:1	4.655	1170	12.52	21.39	87.65	84.8	0.55	5487
ICON-050/1440-86	1440 /1062	576 / 425	86	40:1	6.982	3511	15.13	31.30	91.83	85.2	0.68	8197
ICON-050/1440-173	1440 /1062	576 / 425	173	20:1	13.964	3511	31.30	62.61	144.00	83.6	0.67	16711

NOTES

1. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
2. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
3. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
4. Absorbed power at nominal conditions (Watt)

24 V DC - ON/OFF S2-15' OR INCHING SERVICE S4-25%, 600 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor[3] nominal current (Inom)	Motor[4] max current (Imax)	Locked[5] rotor current (Icc)	Absorbed[6] power (Watt)
ICON-010D/ 30-SR1	30 / 22	12 / 9	12 - 30	40:1	0.400	12.00	18.00	60.00	443
ICON-010D/ 30-SR2	30 / 22	12 / 9	30 - 60	20:1	0.400	19.00	25.00	90.00	702
ICON-010D/ 90-SR1	90 / 66	36 / 26	12 - 30	40:1	0.400	24.00	37.00	80.00	886
ICON-010D/ 90-SR2	90 / 66	36 / 26	50 - 68	20:1	0.400	38.00	80.00	100.00	1403

NOTES

1. Permanent magnet motor with brushes
2. The last digits in the model number represent the range of adjustable output speed (RPM) shown on the table
3. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
4. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
5. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
6. Absorbed power at nominal conditions (Watt)

48 V DC - ON/OFF S2-15' OR INCHING SERVICE S4-25%, 600 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor[3] nominal current (Inom)	Motor[4] max current (Imax)	Locked[5] rotor current (Icc)	Absorbed[6] power (Watt)
ICON-010D/ 30-SR1	30 / 22	12 / 9	12 - 30	40:1	0.400	9.50	10.00	58.00	335
ICON-010D/ 30-SR2	30 / 22	12 / 9	30 - 60	20:1	0.400	12.00	13.00	65.00	424
ICON-010D/ 90-SR1	90 / 66	36 / 26	12 - 30	40:1	0.400	13.00	19.00	48.00	459
ICON-010D/ 90-SR2	90 / 66	36 / 26	50 - 68	20:1	0.400	17.00	35.00	58.00	600

NOTES

1. Permanent magnet motor with brushes
2. The last digits in the model number represent the range of adjustable output speed (RPM) shown on the table
3. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
4. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
5. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
6. Absorbed power at nominal conditions (Watt)

110 V DC - ON/OFF S2-15' OR INCHING SERVICE S4-25%, 600 STARTS/hr

Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor[3] nominal current (Inom)	Motor[4] max current (Imax)	Locked[5] rotor current (Icc)	Absorbed[6] power (Watt)
ICON-010D/ 30-SR1	30 / 22	12 / 9	12 - 30	40:1	0.400	5.20	7.50	25.00	572
ICON-010D/ 30-SR2	30 / 22	12 / 9	30 - 80	20:1	0.400	5.80	7.70	25.00	638
ICON-010D/ 90-SR1	90 / 66	36 / 26	20 - 40	40:1	0.400	5.20	9.00	25.00	572
ICON-010D/ 90-SR2	90 / 66	36 / 26	55 - 70	20:1	0.400	6.00	12.00	25.00	660
ICON-020D/180-SR1	180 / 132	72 / 53	35 - 37	40:1	0.400	7.20	17.50	25.00	792

NOTES

1. Permanent magnet motor with brushes
2. The last digits in the model number represent the range of adjustable output speed (RPM) shown on the table
3. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
4. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
5. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
6. Absorbed power at nominal conditions (Watt)

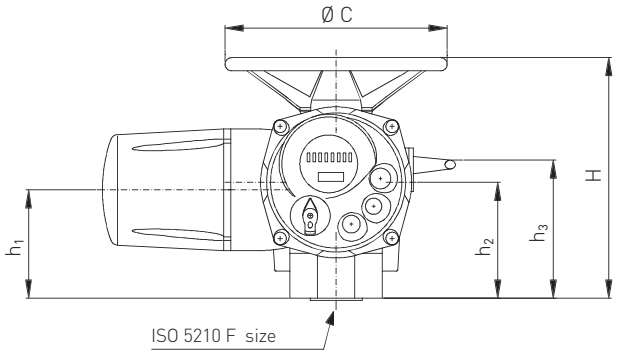
120 V DC - ON/OFF S2-15' OR INCHING SERVICE S4-25%, 600 STARTS/hr

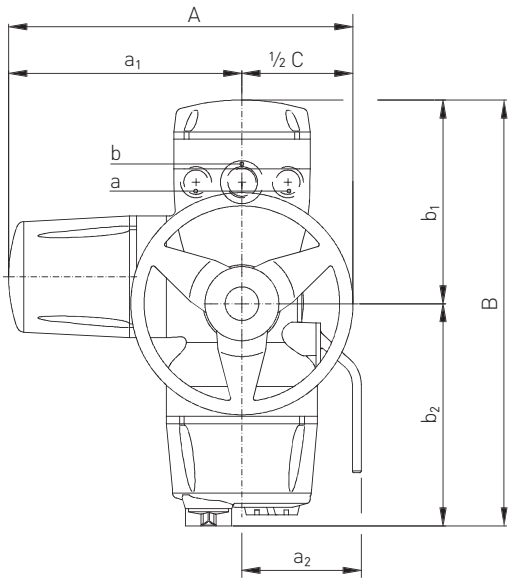
Model	Nom. torque (100%) (Nm/lbf.ft)	Min. torque (40%) (Nm/lbf.ft)	Actuator RPM	R	Motor power (kW)	Motor[3] nominal current (Inom)	Motor[4] max current (Imax)	Locked[5] rotor current (Icc)	Absorbed[6] power (Watt)
ICON-010D/ 30-SR1	30 / 22	12 / 9	12 - 30	40:1	0.400	4.80	7.50	25.00	576
ICON-010D/ 30-SR2	30 / 22	12 / 9	30 - 80	20:1	0.400	5.40	7.70	25.00	648
ICON-010D/ 90-SR1	90 / 66	36 / 26	20 - 40	40:1	0.400	4.80	9.00	25.00	576
ICON-010D/ 90-SR2	90 / 66	36 / 26	55 - 70	20:1	0.400	5.50	12.00	25.00	660
ICON-020D/180-SR1	180 / 132	72 / 53	35 - 37	40:1	0.400	6.60	17.50	25.00	792

NOTES

1. Permanent magnet motor with brushes
2. The last digits in the model number represent the range of adjustable output speed (RPM) shown on the table
3. Inom – Actuator nominal current (at 40% set output torque) according to ISO 12590
4. Imax – Actuator current at max torque (100% set output torque) according to ISO 12590
5. Icc – Actuator locked rotor current (current measured with motor energized and output drive locked) according to ISO 12590
6. Absorbed power at nominal conditions (Watt)

OVERALL DIMENSIONS - STANDARD MANUAL OVERRIDE





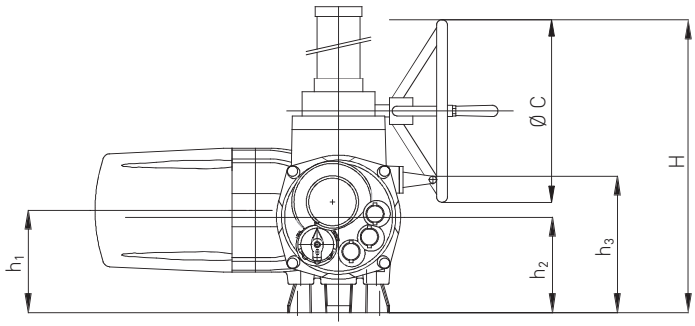
Standard cable entries:
a = 2 x 1" NPT
b = 1 x 1" NPT
Metric options available on request

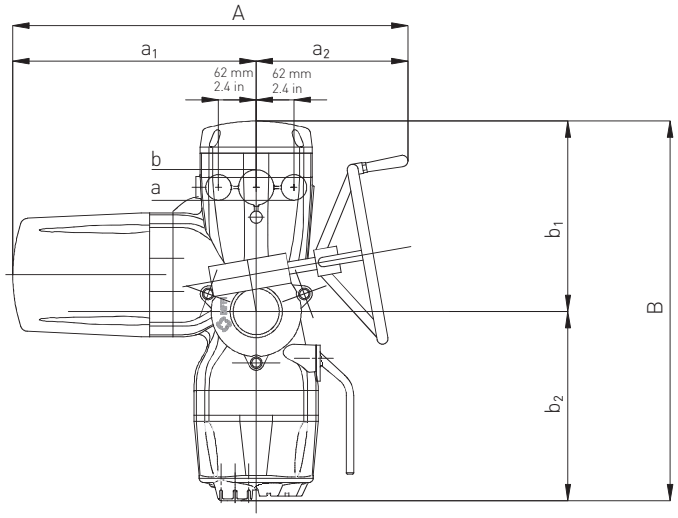
ICON 2000 SERIES STANDARD MANUAL OVERRIDE - METRIC (mm / kg)

Model	A	a_1	a_2	B	b_1	b_2	Ø C	F	H	h_1	h_2	h_3	Mass (kg)
ICON-010	484	325	159	561	273	288	300	F10	332	142	152	209	32
ICON-020	597	347	159	579	283	296	500	F14	380	161	161	239	45
ICON-030	699	399	159	621	313	308	600	F14	436	175	175	269	70
ICON-040	815	455	159	686	318	368	720	F16	486	196	191	291	86
ICON-050	958	528	159	750	363	387	860	F25	560	223	218	336	110

ICON 2000 SERIES STANDARD MANUAL OVERRIDE - IMPERIAL (in / lb)

Model	A	a_1	a_2	B	b_1	b_2	Ø C	F	H	h_1	h_2	h_3	Mass (lb)
ICON-010	19.1	12.8	6.3	22.1	10.7	11.3	11.8	F10	13.1	5.6	6.0	8.2	70.5
ICON-020	23.5	13.7	6.3	22.8	11.1	11.7	19.7	F14	15.0	6.3	6.3	9.4	99.2
ICON-030	27.5	15.7	6.3	24.4	12.3	12.1	23.6	F14	17.2	6.9	6.9	10.6	154.3
ICON-040	32.1	17.9	6.3	27.0	12.5	14.5	28.3	F16	19.1	7.7	7.5	11.5	189.6
ICON-050	37.7	20.8	6.3	29.5	14.3	15.2	33.9	F25	22.0	8.8	8.6	13.2	242.5





Standard cable entries:
a = 2 x 1" NPT
b = 1 x 1" NPT
Metric options available on request

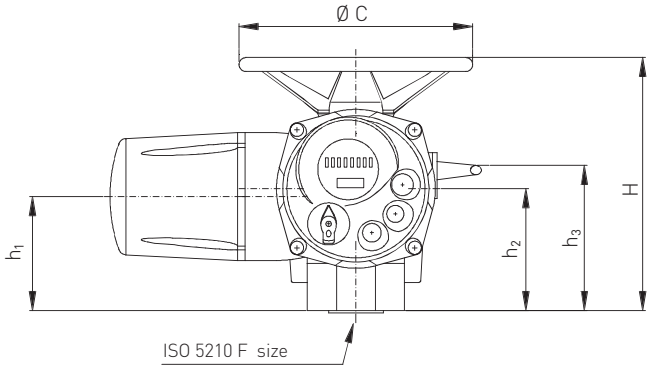
ICON 2000 SERIES WITH REDUCED MANUAL OVERRIDE - METRIC (mm / kg)

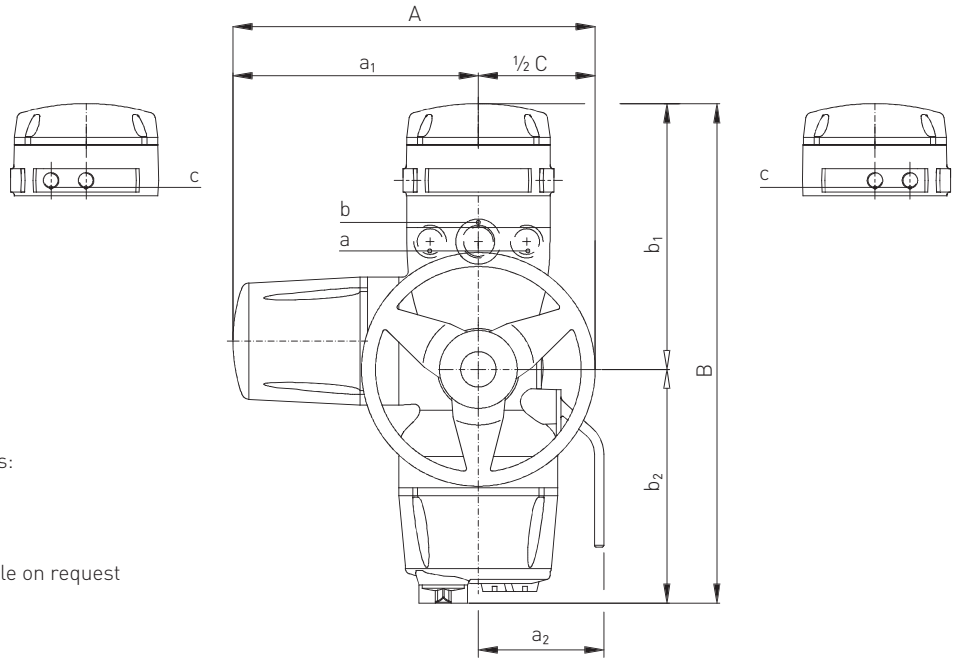
												Manual override	
Model	**A**	**a_1**	**a_2**	**B**	**b_1**	**b_2**	**Ø C**	**H**	**h_1**	**h_2**	**h_3**	**R**	**Mass (kg)**
ICON-030	648	399	249	621	313	308	300	500	175	175	269	10 / 1	78
ICON-040	723	455	268	686	318	368	400	574	196	191	291	13 / 1	94
ICON-050	799	528	271	750	363	387	500	685	223	218	336	17 / 1	118

ICON 2000 SERIES WITH REDUCED MANUAL OVERRIDE - IMPERIAL (in / lb)

												Manual override	
Model	**A**	**a_1**	**a_2**	**B**	**b_1**	**b_2**	**Ø C**	**H**	**h_1**	**h_2**	**h_3**	**R**	**Mass (lb)**
ICON-030	25.5	15.7	9.8	24.4	12.3	12.1	11.8	19.7	6.9	6.9	10.6	10 / 1	172.0
ICON-040	28.5	17.9	10.6	27.0	12.5	14.5	15.7	22.6	7.7	7.5	11.5	13 / 1	207.2
ICON-050	31.5	20.8	10.7	29.5	14.3	15.2	19.7	27.0	8.8	8.6	13.2	17 / 1	260.1

OVERALL DIMENSIONS - OPTIONAL PROFIBUS MODULE WITH STANDARD MANUAL OVERRIDE





Standard cable entries:
a = 2 x 1" NPT
b = 1 x 1" NPT
c = 4 x ½" NPT
Metric options available on request

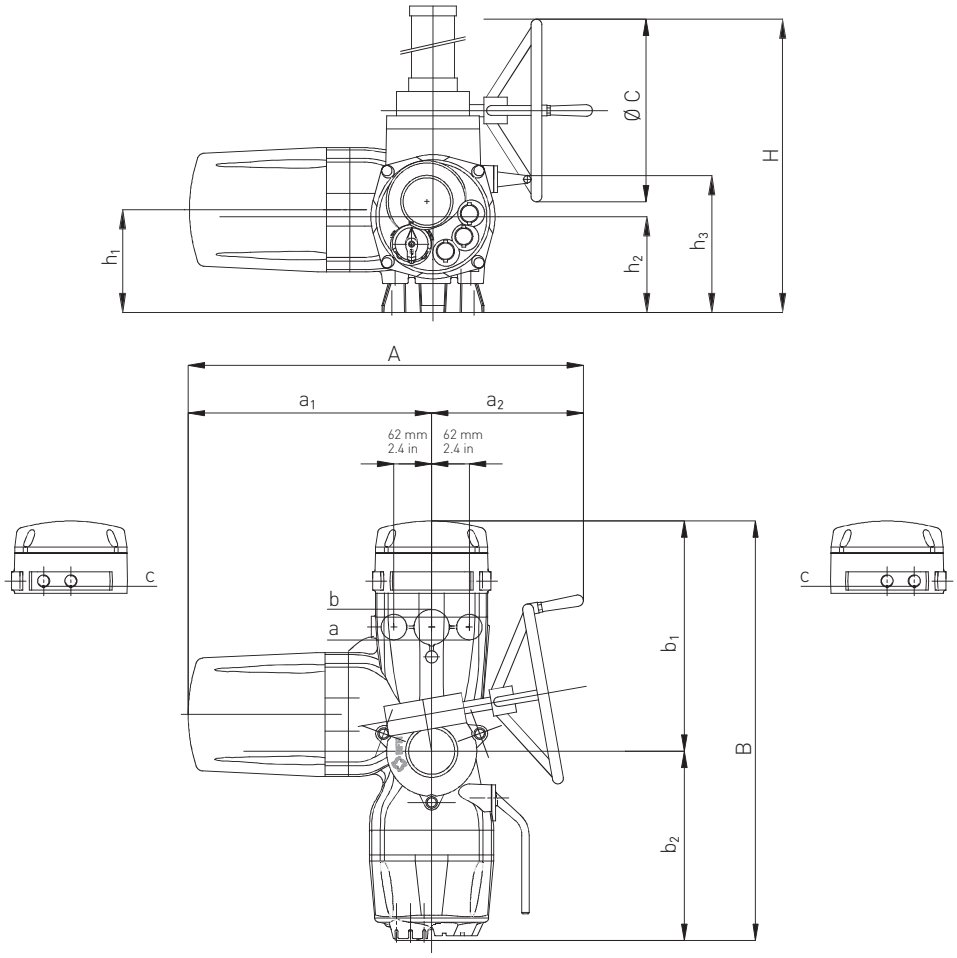
ICON 2000 SERIES WITH DETACHABLE PROFIBUS - METRIC (mm / kg)

Model	A	a_1	a_2	B	b_1	b_2	Ø C	F	H	h_1	h_2	h_3	Mass (kg)
ICON-010	484	325	159	627	339	288	300	F10	332	142	152	209	38
ICON-020	597	347	159	645	349	296	500	F14	380	161	161	239	51
ICON-030	699	399	159	687	379	308	600	F14	436	175	175	269	76
ICON-040	815	455	159	752	384	368	720	F16	486	196	191	291	92
ICON-050	958	528	159	816	432	387	860	F25	560	223	218	336	116

ICON 2000 SERIES WITH DETACHABLE PROFIBUS - IMPERIAL (in / lb)

Model	A	a_1	a_2	B	b_1	b_2	Ø C	F	H	h_1	h_2	h_3	Mass (lb)
ICON-010	19.1	12.8	6.3	24.7	13.3	11.3	11.8	F10	13.1	5.6	6.0	8.2	83.8
ICON-020	23.5	13.7	6.3	25.4	13.7	11.7	19.7	F14	15.0	6.3	6.3	9.4	112.4
ICON-030	27.5	15.7	6.3	27.0	14.9	12.1	23.6	F14	17.2	6.9	6.9	10.6	167.6
ICON-040	32.1	17.9	6.3	29.6	15.1	14.5	28.3	F16	19.1	7.7	7.5	11.5	202.8
ICON-050	37.7	20.8	6.3	32.1	17.0	15.2	33.9	F25	22.0	8.8	8.6	13.2	255.7

OVERALL DIMENSIONS - OPTIONAL PROFIBUS MODULE WITH REDUCED MANUAL OVERRIDE



Standard cable entries:
a = 2 x 1" NPT
b = 1 x 1" NPT
c = 4 x ½" NPT
Metric options available on request

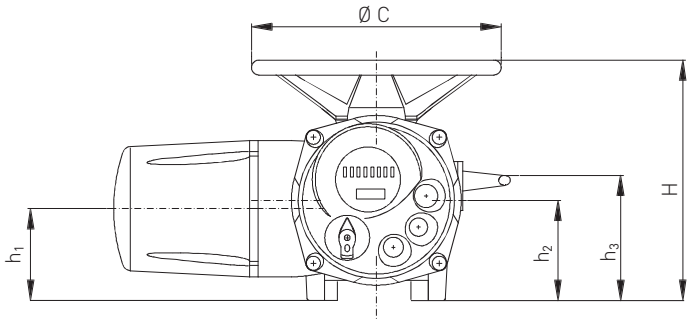
ICON 2000 SERIES WITH REDUCED MANUAL OVERRIDE AND DETACHABLE PROFIBUS - METRIC (mm / kg)

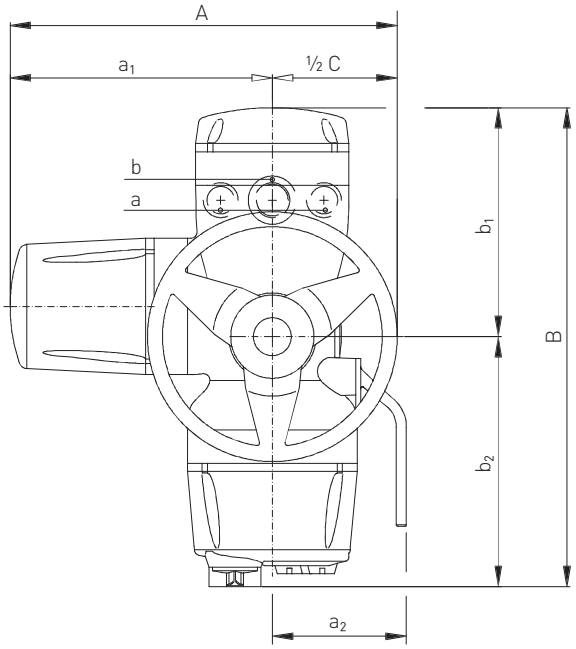
												Manual override	
Model	**A**	**a_1**	**a_2**	**B**	**b_1**	**b_2**	**Ø C**	**H**	**h_1**	**h_2**	**h_3**	**R**	**Mass (kg)**
ICON-030	648	399	249	687	379	308	300	500	175	175	269	10 / 1	84
ICON-040	723	455	268	752	384	368	400	574	196	191	291	13 / 1	100
ICON-050	799	528	271	816	429	387	500	685	223	218	336	17 / 1	124

ICON 2000 SERIES WITH REDUCED MANUAL OVERRIDE AND DETACHABLE PROFIBUS - IMPERIAL (in / lb)

												Manual override	
Model	**A**	**a_1**	**a_2**	**B**	**b_1**	**b_2**	**Ø C**	**H**	**h_1**	**h_2**	**h_3**	**R**	**Mass (lb)**
ICON-030	25.5	15.7	9.8	27.0	14.9	12.1	11.8	19.7	6.9	6.9	10.6	10 / 1	185.2
ICON-040	28.5	17.9	10.6	29.6	15.1	14.5	15.7	22.6	7.7	7.5	11.5	13 / 1	220.5
ICON-050	31.5	20.8	10.7	32.1	16.9	15.2	19.7	27.0	8.8	8.6	13.2	17 / 1	273.4

OVERALL DIMENSIONS - STANDARD WITHOUT COUPLING AND INSERT BUSH





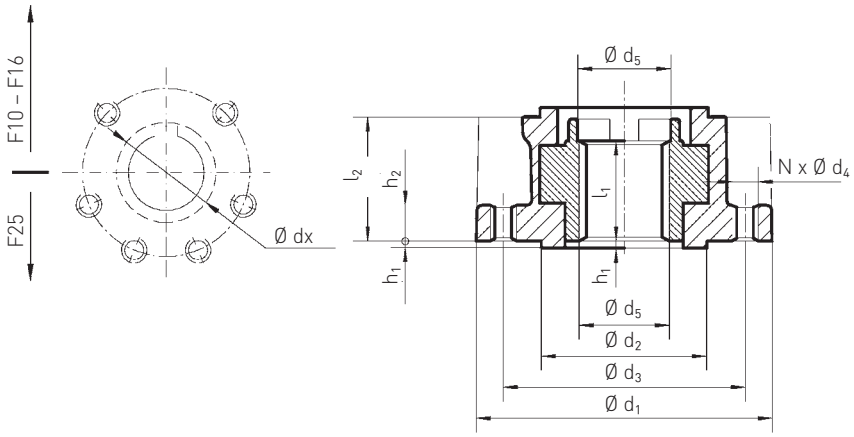
Standard cable entries:
a = 2 x 1" NPT
b = 1 x 1" NPT
Metric options available on request

ICON 2000 SERIES WITHOUT COUPLING AND INSERT BUSH - METRIC (mm / kg)

Model	A	a_1	a_2	B	b_1	b_2	Ø C	H	h_1	h_2	h_3	Mass (kg)
ICON-010	484	325	159	561	273	288	300	290	100	110	168	30
ICON-020	597	347	159	579	283	296	500	323	110	110	189	42
ICON-030	699	399	159	621	313	308	600	365	110	110	205	65

ICON 2000 SERIES WITHOUT COUPLING AND INSERT BUSH - IMPERIAL (in / lb)

Model	A	a_1	a_2	B	b_1	b_2	Ø C	H	h_1	h_2	h_3	Mass (lb)
ICON-010	19.1	12.8	6.3	22.1	10.7	11.3	11.8	11.4	3.9	4.3	6.6	66.1
ICON-020	23.5	13.7	6.3	22.8	11.1	11.7	19.7	12.7	4.3	4.3	7.4	92.6
ICON-030	27.5	15.7	6.3	24.4	12.3	12.1	23.6	14.4	4.3	4.3	8.1	143.3



ICON 2000 COUPLINGS TYPE A - METRIC (mm)

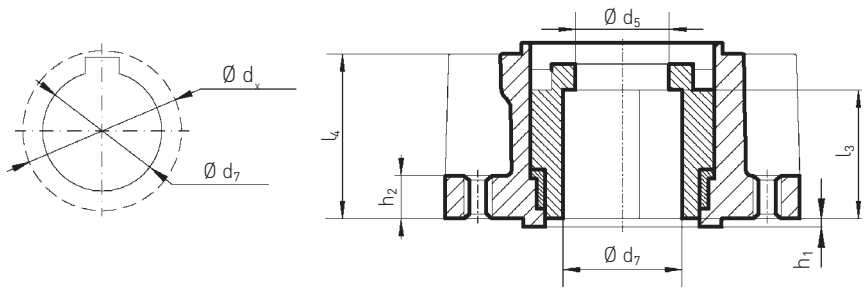
Model	**010**	**020**	**030**	**040**	**050**
ISO 5210	**F10**	**F10**	**F10**	**F10**	**F10**
F_{nom} (kN)	40	100	150	180	300
F_{max} (kN)	60	150	225	270	450
Ø d_1	125	175	175	210	300
Ø d_2 f_8	70	100	100	130	200
Ø d_3	102	140	140	165	254
Ø d_4	M10	M16	M16	M20	M16
Ø d_5	33	46	62	68	78
Ø d_6 max	32	45	60.5	65	77
Ø d_6 not machined*	18*	19	26	30	35
Ø d_x max	32	45	60.5	65	77
l_1	40	55	70	75	95
l_2	51	68	84	94	120
h_1	3	4	4	5	5
h_2	15	24	24	30	24
N	4	4	4	4	8
Mass (kg)	2	8	8	15	28

NOTES TO COUPLINGS TYPE A

Ø d_6 = Max threaded stem acceptance
Ø d_x = The maximum accepted diameter described by the key
F_{nom} = The max thrust applicable to the ICON 2000 block type 'A' in dynamic conditions with torque control set at 100%
F_{max} = The max thrust applicable to the ICON 2000 block type 'A' in static conditions with manual override or with motor in stall torque
* = Not applicable in case of insert bush blind

ICON 2000 COUPLINGS TYPE A - IMPERIAL (in)

Model	**010**	**020**	**030**	**040**	**050**
ISO 5210	**F10**	**F14**	**F14**	**F16**	**F25**
F_{nom} (lbf)	8,992	22,480	33,720	40,464	67,440
F_{max} (lbf)	13,488	33,720	50,580	60,696	101,160
Ø d_1	4.9	6.9	6.9	8.3	11.8
Ø d_2 f_8	2.8	3.9	3.9	5.1	7.9
Ø d_3	4.0	5.5	5.5	6.5	10.0
Ø d_4	M10	M16	M16	M20	M16
Ø d_5	1.30	1.81	2.44	2.68	3.07
Ø d_6 max	1.26	1.77	2.38	2.56	3.01
Ø d_6 not machined*	0.71*	0.75	1.02	1.18	1.38
Ø d_x max	1.26	1.77	2.38	2.56	3.01
l_1	1.6	2.2	2.8	3.0	3.7
l_2	2.0	2.7	3.3	3.7	4.7
h_1	0.12	0.16	0.16	0.20	0.20
h_2	0.6	0.9	0.9	1.2	0.9
N	4	4	4	4	8
Mass (lb)	4.4	17.6	17.6	33.1	61.7



Flange dimensions as per type A

ICON 2000 COUPLINGS TYPE B1/B2 - METRIC (mm)

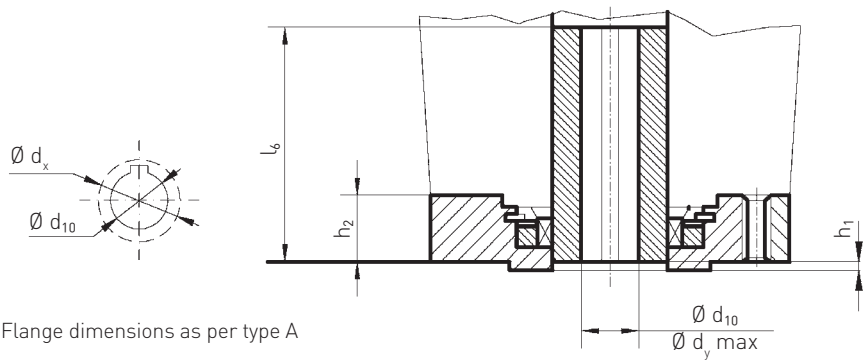
Model	**010**	**020**	**030**	**040**	**050**
ISO 5210	**F10**	**F14**	**F14**	**F16**	**F25**
Ø d_5	33	46	62	68	78
B1Ø d_7 H9	42	60	60	80	100
B2Ø d_7 max	42	60	60	80	100
Ø d_x max	50	71	71	94	116
l_3	45	65	65	80	110
l_4	56	85	84	105	155
Mass (kg)	2	7	7	14	26

ICON 2000 COUPLINGS TYPE B1/B2 - IMPERIAL (in)

Model	**010**	**020**	**030**	**040**	**050**
ISO 5210	**F10**	**F14**	**F14**	**F16**	**F25**
Ø d_5	1.3	1.8	2.4	2.7	3.1
B1Ø d_7 H9	1.7	2.4	2.4	3.1	3.9
B2Ø d_7 max	1.7	2.4	2.4	3.1	3.9
Ø d_x max	2.0	2.8	2.8	3.7	4.6
l_3	1.8	2.6	2.6	3.1	4.3
l_4	2.2	3.3	3.3	4.1	6.1
Mass (lb)	4.4	15.4	15.4	30.9	57.3

NOTES TO COUPLINGS TYPE B1/B2

Ø d_7 = With standard keyway according to ISO 773
Ø d_x = The maximum accepted diameter described by the key



Flange dimensions as per type A

ICON 2000 COUPLINGS TYPE B3/B4 - METRIC (mm)

Model	**010**	**020**	**030**	**040**	**050**
ISO 5210	**F10**	**F14**	**F14**	**F16**	**F25**
B3Ø d_{10} H9	20	30	30	40	50
B4Ø d_y max	22	32	46	50	58
Ø d_x	26	40	55	60	68
l_6	100	120	130	150	180
Mass (kg)	1	6	6	12	20

ICON 2000 COUPLINGS TYPE B3/B4 - IMPERIAL (in)

Model	**010**	**020**	**030**	**040**	**050**
ISO 5210	**F10**	**F14**	**F14**	**F16**	**F25**
B3Ø d_{10} H9	0.8	1.2	1.2	1.6	2.0
B4Ø d_y max	0.9	1.3	1.8	2.0	2.3
Ø d_x	1.0	1.6	2.2	2.4	2.7
l_6	3.9	4.7	5.1	7.1	7.1
Mass (lb)	2.2	13.2	13.2	26.5	44.1

NOTES TO COUPLINGS TYPE B3/B4

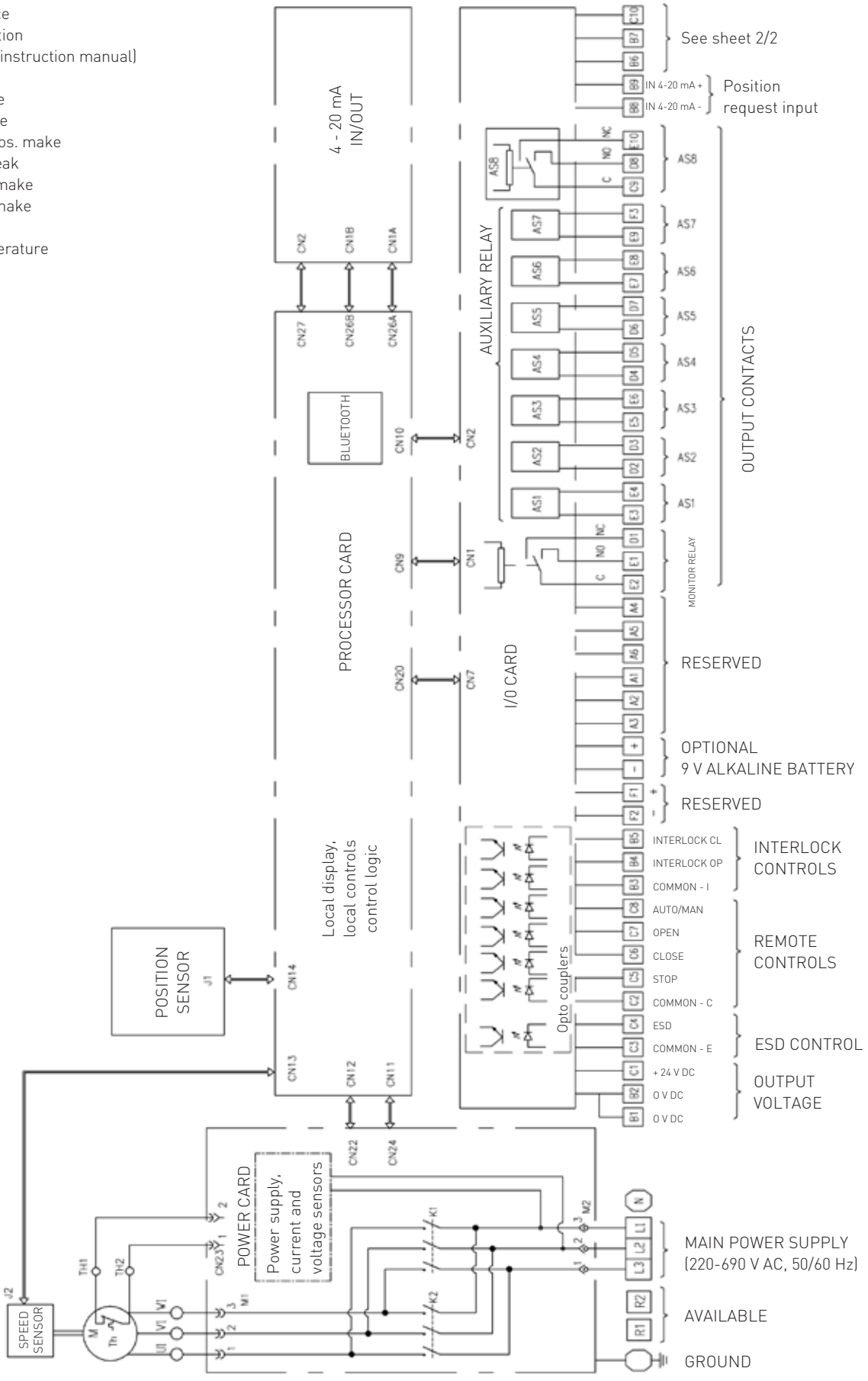
Flange dimensions as per type A

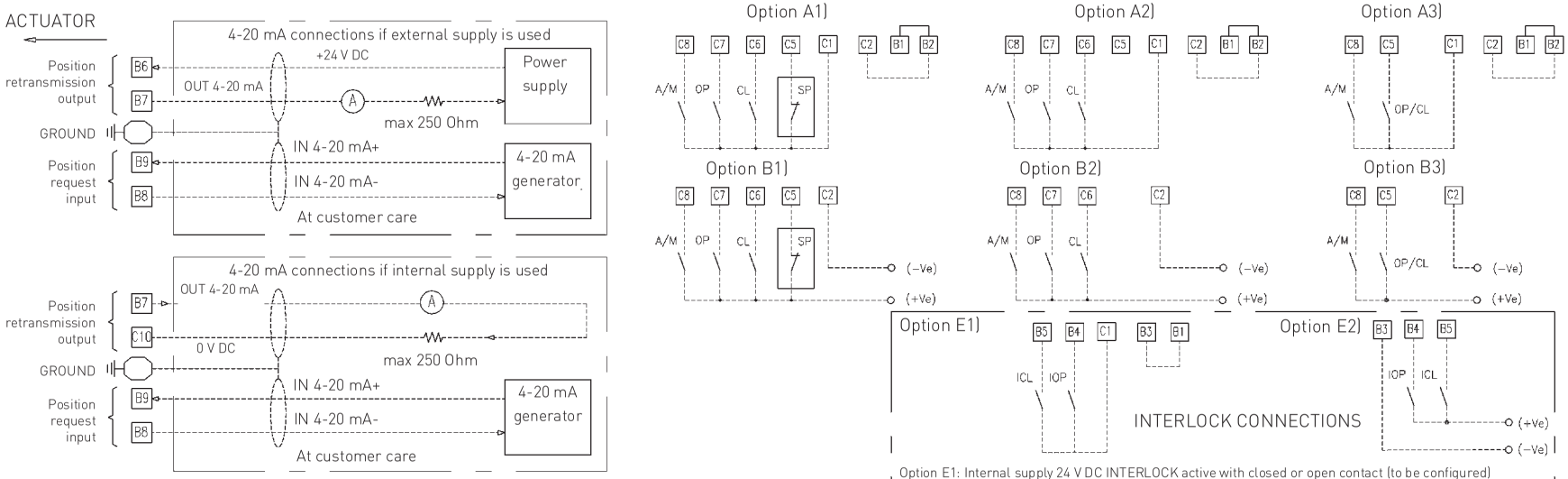
Ø d_{10} = With standard keyway according to ISO 773

Ø d_x = The maximum accepted diameter described by the key

On/Off or Inching service
Default relay configuration
(may be modified - see instruction manual)

AS1 = Open limit / make
AS2 = Close limit / make
AS3 = Selec.REMOTE pos. make
AS4 = Over-torque / break
AS5 = Motor running / make
AS6 = Position <10% / make
AS7 = ESD / make
AS8 = Motor over temperature





See instruction handbook to configure options A1, A2, A3, B1, B2, B3.
For 4-20mA connections see MAN 618/5, optional modules PSM1 and APTM1.

Remote STOP control SP can be configured to perform the STOP action when the contact is open (break) or closed (make).

Option E1: Internal supply 24 V DC INTERLOCK active with closed or open contact (to be configured)
Option E2: External supply 20-125 V DC or 20-120 V AC (50/60 Hz) INTERLOCK active with closed or open contact (to be configured)
See instruction handbook to configure INTERLOCK signal type

Option D1: Internal supply 24 V DC ESD active with closed or open contact (to be configured)
Option D2: External supply 20-125 V DC or 20-120 V AC (50/60 Hz) ESD active with closed or open contact (to be configured)
See instruction manual to configure ESD signal type, ESD action and priority.
If customers wish to have the thermostat by-passed during ESD operation, it should be noted that any certification for the actuator enclosure in hazardous areas will be invalidated.

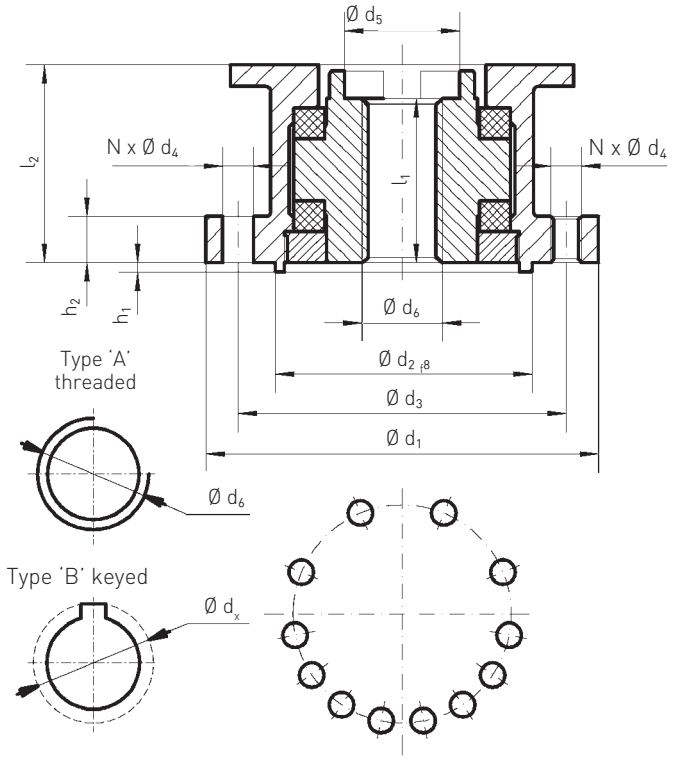
Notes:
1) B1-B2 : Internally linked
2) C1 : +24 V DC not regulated, max 4 W
3) Control signal levels:
Minimum 'ON' >20 V DC or 20 V AC (50/60 Hz)
Maximum 'ON' <125 V DC or 120 V AC (50/60 Hz)
Maximum 'OFF' <3 V DC or AC
Mimimum signal duration >500 ms
Total current drawn for remote controls <25 mA
Total current drawn for ESD controls <15 mA
4) Monitor relay:
Voltage free, change-over contact- max voltage 250 V AC or 30 V DC - max current 5 A/min voltage 5 V DC - min. current 10 mA
See instruction manual to view or configure the switching conditions of relay
-E2/D1 contact is closed when the configured condition occurs
5) AS1, AS2, AS3, AS4, AS5, AS6, AS7: Voltage- free contact. Max voltage 250 V AC or 30 V DC - max current 5 A / min voltage 5 V DC - min current 10 mA
Contact can be configured to make or break on condition. See Instruction manual to view or configure switching conditions of relays.
6) AS8 : Voltage free, change-over contact- max voltage 250 V AC or 30 V DC - max current 5 A/min. voltage 5 V DC - min. current 10 mA
See instruction manual to view or configure the switching conditions of relay
-C9/D8 contact is closed when the configured condition occurs
7) A1, A2, A3, : Internal supply 24 V DC
8) B1, B2, B3 : External supply 20-125 V DC or 20-120 V AC (50/60 Hz)
9) Controls mode :
Option A1/B1 : 4 wires latched (SP configuration = BREAK)
Option A2/B2 : 3 wires push to run
: 3 wires latched with instant reverse
Option A3/B3 : 2 wires open contact opens
: 2 wires open contact closes
10) A/M Open: Remote/Auto Actuator control by 4-20 mA input signal
A/M Closed: Remote/Man Actuator control by remote push-buttons

KEY	
M	= Three phase motor
Th	= Motor thermostat
OP	= OPEN control
CL	= CLOSE control
SP	= STOP control
K1	= Opening/Closing contactor
K2	= Opening/Closing contactor

For application on valves when a side-mounted multiturn actuator is requested. Penstocks are another typical application for this type of reducer.

BGR MULTITURN ACTUATOR PERFORMANCE

Model BGR	Nom. torque (100%) (Nm)	Min. torque (40%) (Nm)	RPM** (50 Hz)	RPM** (60 Hz)
BGR-3-010/360-**	360	144	5	6
BGR-3-010/360-**	360	144	8	10
BGR-3-010/360-**	360	144	11	13
BGR-3-010/360-**	360	144	16	19
BGR-3-010/360-**	360	144	32	38
BGR-7-020/720-**	720	288	5	6
BGR-7-020/720-**	720	288	8	10
BGR-7-020/720-**	720	288	11	13
BGR-7-020/720-**	720	288	16	19
BGR-7-020/720-**	720	288	32	39
BGR-15-030/1440-**	1440	576	5	6
BGR-15-030/1440-**	1440	576	8	10
BGR-15-030/1440-**	1440	576	11	13
BGR-15-030/1440-**	1440	576	16	19
BGR-15-030/1440-**	1440	576	32	39
BGR-30-040/2880-**	2880	1152	5	6
BGR-30-040/2880-**	2880	1152	8	10
BGR-30-040/2880-**	2880	1152	11	13
BGR-30-040/2880-**	2880	1152	16	19
BGR-30-040/2880-**	2880	1152	32	38
BGR-60-050/5760-**	5760	2304	5	6
BGR-60-050/5760-**	5760	2304	8	10
BGR-60-050/5760-**	5760	2304	11	13
BGR-60-050/5760-**	5760	2304	16	19
BGR-60-050/5760-**	5760	2304	32	38



ICON 2000 SERIES BGR - METRIC (mm)

Model	**BGR 3**	**BGR 7**	**BGR 15**	**BGR 30**	**BGR 60**
ISO 5210	**F14**	**F16**	**F25**	**F30**	**F35**
F_{nom} (kN)	150	180	300	440	700
F_{max} (kN)	225	270	450	660	1050
Ø d_1	175	210	300	350	415
Ø d_2 f_8	100	130	200	230	260
Ø d_3	140	165	254	298	356
Ø d_4	M16	M20	M16	22	33
Ø d_5	62	68	78	78	97
Ø d_6 max (d_x)	60.5	65	77	77	96
Ø d_6 min	-	-	-	51	55
l_1	70	75	95	110	144
l_2	84	94	120	134	172
h_1	4	5	5	5	5
h_2	24	30	24	30	40
N	4	4	8	8	8
Mass (kg)	8	15	28	48	75

NOTES TO COUPLINGS TYPE A

Type 'A' = The block having the capability to transmit both a torque and a thrust

Ø d_x = The maximum accepted diameter described by the key

l_1 x1.10 = Minimum threaded valve stem protrusion

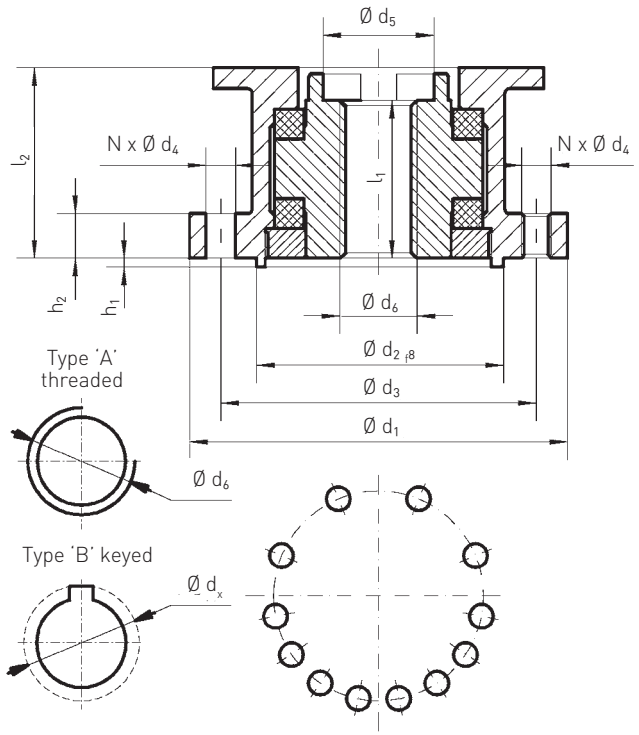
F_{nom} = The max thrust applicable to the BGR block type 'A' in dynamic conditions with torque control set at 100%

F_{max} = The max thrust applicable to the BGR block type 'A' in static conditions with manual override or with motor in stall torque

For application on valves when a multiturn actuator is required and torque exceeds 1440 Nm. The spur gear reducer and its thrust block are designed for the most severe duties.

SGR MULTITURN ACTUATOR PERFORMANCE

Model SGR	Nom. torque (100%) (Nm)	Min. torque (40%) (Nm)	RPM** (50 Hz)	RPM** (60 Hz)
SGR-160-030/1750-**	1750	700	26	31
SGR-160-030/2150-**	2150	860	21	26
SGR-160-030/2880-**	2880	1152	8	10
SGR-160-030/2880-**	2880	1152	16	19
SGR-250-030/3600-**	3600	1440	12	15
SGR-250-040/3600-**	3600	1440	24	29
SGR-250-030/4800-**	4800	1920	5	6
SGR-250-030/4800-**	4800	1920	9	11
SGR-250-040/4800-**	4800	1920	18	22
SGR-250-050/4800-**	4800	1920	36	43
SGR-400-030/7500-**	7500	3000	6	7
SGR-400-040/7500-**	7500	3000	12	14
SGR-400-050/7500-**	7500	3000	24	29
SGR-400-040/9600-**	9600	3840	5	6
SGR-400-040/9600-**	9600	3840	9	11
SGR-400-050/9600-**	9600	3840	18	22
SGR-640-050/9600-**	9600	3840	18	22
SGR-640-040/15000-**	15000	6000	6	7
SGR-640-050/16000-**	16000	6400	11	13
SGR-640-050/19200-**	19200	7680	5	6
SGR-640-050/19200-**	19200	7680	9	11
SGR-1000-050/22000-**	22000	8800	8	9
SGR-1000-050/28000-**	28000	11200	6	7
SGR-1000-050/37000-**	37000	14800	2	3
SGR-1000-050/37000-**	37000	14800	5	6
SGR-1600-050/40000-**	40000	16000	4	5
SGR-1600-050/48000-**	48000	19200	3	4
SGR-1600-050/57000-**	57000	22800	3	4



ICON 2000 SERIES SGR - METRIC (mm / kg)

Model	SGR 160	SGR 250	SGR 400	SGR 640	SGR 1000	SGR 1600
ISO 5210	F30	F35	F35	---	---	---
F_{nom} (kN)	440	700	1200	2250	3200	4500
F_{max} (kN)	660	1050	1800	3375	4800	6750
Ø d_1	350	415	415	475	500	620
Ø d_2 f_8	230	260	260	300	330	400
Ø d_3	298	356	356	406	425	520
Ø d_4	22	33	33	39	M36	M45
Ø d_5	78	97	109	130	156	188
Ø d_6 max (d_x)	77	96	108	127	153	180
Ø d_6 min	51	55	60	75	90	95
l_1	110	144	178	216	252	307
l_2	134	172	201	250	290	354
h_1	5	5	5	8	8	8
h_2	30	40	45	45	50	58
N	8	8	8	16	16	16
Mass (kg)	48	75	105	150	195	250

NOTES TO COUPLINGS TYPE A

Type 'A' = The block having the capability to transmit both a torque and a thrust

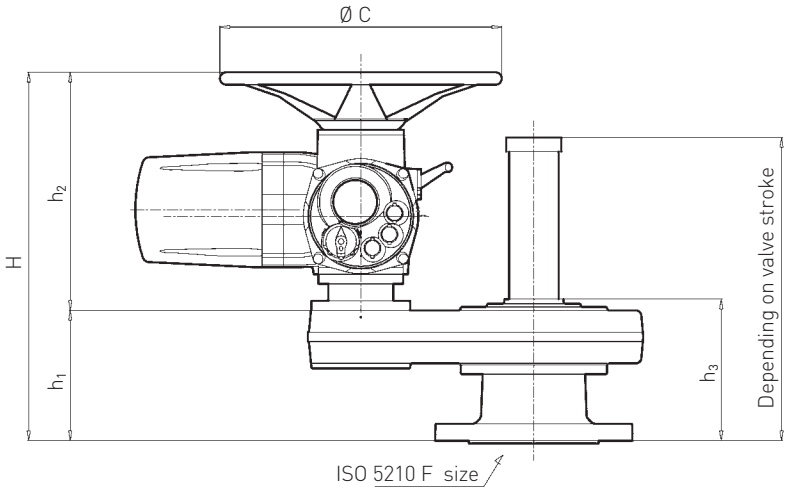
Ø d_x = The maximum accepted diameter described by the key

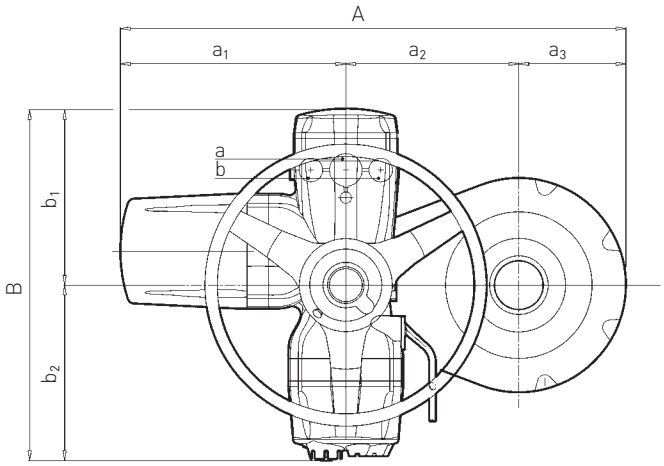
l1 x1.10 = Minimum threaded valve stem protrusion

F_{nom} = The max thrust applicable to the SGR block type 'A' in dynamic conditions with torque control set at 100%

F_{max} = The max thrust applicable to the SGR block type 'A' in static conditions with manual override or with motor in stall torque

SPUR GEAR REDUCER DIMENSIONS - STANDARD MANUAL OVERRIDE

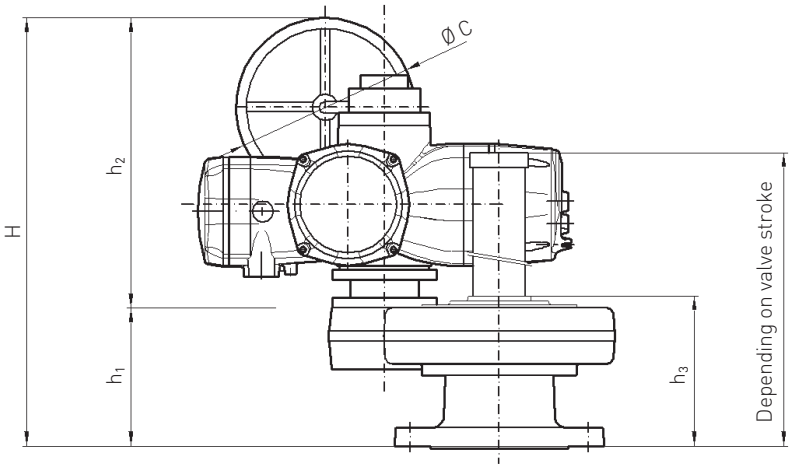


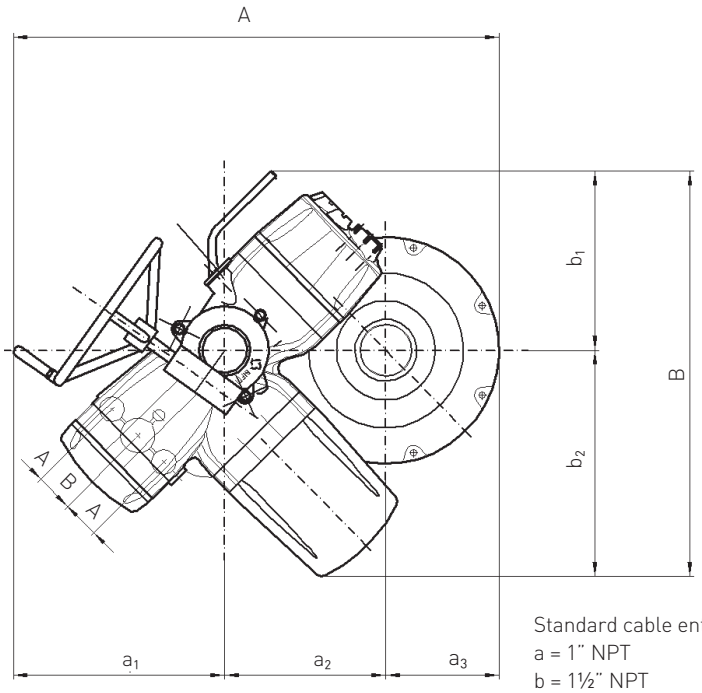


Standard cable entries:
a = 1" NPT
b = 1½" NPT

ICON 2000 SERIES SGR OVERALL DIMENSIONS - METRIC (mm / kg)

Model	A	a_1	a_2	a_3	B	b_1	b_2	ØC	F	H	h_1	h_2	h_3	Mass (kg)
SGR-160-030	859	399	270	190	625	313	312	400	F30	617	231	380	251	127
SGR-250-030	927	399	319	227	625	313	312	500	F35	684	315	380	345	154
SGR-250-040	983	445	319	227	690	318	372	500	F35	724	280	420	310	170
SGR-250-050	1036	508	319	227	775	363	392	500	F35	684	280	380	310	194
SGR-400-030	980	399	373	208	625	313	312	500	F35	736	356	380	383	232
SGR-400-040	1036	455	373	208	690	318	372	500	F35	776	356	420	383	248
SGR-400-050	1089	508	373	208	775	363	392	500	F35	866	356	510	383	272
SGR-640-040	1098	455	405	237	690	318	372	600	spec.	838	418	420	460	288
SGR-640-050	1151	508	405	238	755	363	392	600	spec.	928	418	510	460	312
SGR-1000-050	1264	508	456	300	755	363	392	600	spec.	968	458	510	500	417
SGR-1600-050	1560	508	602	450	755	363	392	600	spec.	1040	522	510	564	752





Standard cable entries:
a = 1" NPT
b = 1½" NPT

ICON 2000 SERIES SGR OVERALL DIMENSIONS WITH REDUCED MANUAL OVERRIDE - METRIC (mm / kg)

Model	A	a_1	a_2	a_3	B	b_1	b_2	Ø C	H	h_1	h_2	h_3	Mass (kg)
SGR-160-030	814	354	270	190	679	300	379	300	717	231	486	251	135
SGR-250-030	880	354	319	227	678	302	376	300	748	315	448	345	162
SGR-250-040	942	416	319	227	742	310	432	400	828	280	528	310	178
SGR-250-050	1012	484	319	227	809	334	475	500	977	280	677	310	202
SGR-400-030	934	354	373	208	678	302	376	300	817	356	461	383	240
SGR-400-040	995	415	373	208	741	311	430	400	884	356	528	383	256
SGR-400-050	1064	484	373	208	809	334	475	500	1033	356	677	383	280
SGR-640-040	1057	415	405	238	743	311	432	400	947	418	528	460	296
SGR-640-050	1124	482	405	238	807	335	472	500	1091	418	673	460	320
SGR-1000-050	1240	484	456	300	809	334	475	500	1132	458	674	500	425
SGR-1600-050	1535	483	602	450	808	334	474	500	1196	522	674	564	760

For application on any type of quarter turn valves (ball, butterfly, plug...).
The worm gear is designed to meet AWWA C-540 and other major standards.

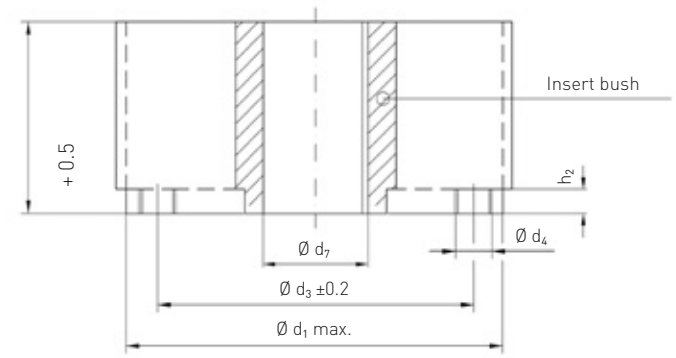
ICON 2000 SERIES WGR ACTUATOR PERFORMANCE WITH THREE PHASE MOTOR

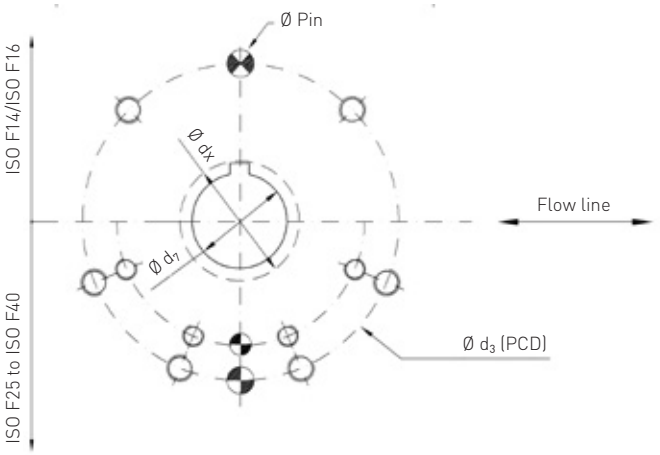
Model WGR	Nom. torque (100%) (Nm)	Min. torque (40%) (Nm)	Max. torque (Nm)	Op. time/90°** (secs at 50 Hz)	Op. time/90°** (secs at 60 Hz)
WGR-110/330-**	330	132	500	63	52
WGR-110/330-**	330	132	500	42	35
WGR-110/330-**	330	132	500	31	26
WGR-110/330-**	330	132	500	21	17
WGR-110/330-**	330	132	500	16	13
WGR-110/330-**	330	132	500	10	9
WGR-100-010/1000-**	1000	400	1500	63	52
WGR-100-010/1000-**	1000	400	1500	42	35
WGR-100-010/1000-**	1000	400	1500	31	26
WGR-100-010/1000-**	1000	400	1500	21	17
WGR-100-010/1000-**	1000	400	1500	16	13
WGR-100-010/1000-**	1000	400	1500	10	9
WGR-200-010/2000-**	2000	800	3000	125	104
WGR-200-010/2000-**	2000	800	3000	83	69
WGR-200-010/2000-**	2000	800	3000	63	52
WGR-200-010/2000-**	2000	800	3000	42	35
WGR-200-010/2000-**	2000	800	3000	31	26
WGR-200-010/2000-**	2000	800	3000	21	17
WGR-200-010/2000-**	2000	800	3000	10	9
WGR-400-010/4000-**	4000	1600	6000	155	118
WGR-400-010/4000-**	4000	1600	6000	103	78
WGR-400-010/4000-**	4000	1600	6000	78	59
WGR-400-010/4000-**	4000	1600	6000	52	39
WGR-400-010/4000-**	4000	1600	6000	39	29
WGR-400-010/4000-**	4000	1600	6000	26	20
WGR-400-010/4000-**	4000	1600	6000	13	10
WGR-800-020/8000-**	8000	3200	12000	250	208
WGR-800-020/8000-**	8000	3200	12000	167	139
WGR-800-020/8000-**	8000	3200	12000	125	104
WGR-800-020/8000-**	8000	3200	12000	83	69
WGR-800-020/8000-**	8000	3200	12000	63	52
WGR-800-020/8000-**	8000	3200	12000	42	35
WGR-800-020/8000-**	8000	3200	12000	21	17

ICON 2000 SERIES WGR ACTUATOR PERFORMANCE WITH THREE PHASE MOTOR

Model WGR	Nom. torque (100%) (Nm)	Min. torque (40%) (Nm)	Max. torque (Nm)	Op. time/90°** (secs at 50 Hz)	Op. time/90°** (secs at 60 Hz)
WGR-1600-020/16000-**	16000	6400	24000	466	389
WGR-1600-020/16000-**	16000	6400	24000	311	259
WGR-1600-020/16000-**	16000	6400	24000	233	194
WGR-1600-020/16000-**	16000	6400	24000	155	130
WGR-1600-020/16000-**	16000	6400	24000	117	97
WGR-1600-020/16000-**	16000	6400	24000	78	65
WGR-1600-020/16000-**	16000	6400	24000	39	32
WGR-3200-020/32000-**	32000	12800	48000	623	519
WGR-3200-020/32000-**	32000	12800	48000	467	389
WGR-3200-020/32000-**	32000	12800	48000	311	259
WGR-3200-020/32000-**	32000	12800	48000	233	195
WGR-3200-020/32000-**	32000	12800	48000	156	130
WGR-3200-020/32000-**	32000	12800	48000	78	65
WGR-3200-030/32000-**	32000	12800	48000	42	35
WGR-6300-020/63000-**	63000	25200	94500	700	583
WGR-6300-020/63000-**	63000	25200	94500	525	438
WGR-6300-020/63000-**	63000	25200	94500	350	292
WGR-6300-020/63000-**	63000	25200	94500	175	146
WGR-6300-030/63000-**	63000	25200	94500	96	80
WGR-6300-040/63000-**	63000	25200	94500	48	40

WORM GEAR REDUCER TYPE WGR DRIVE SLEEVE DIMENSIONS



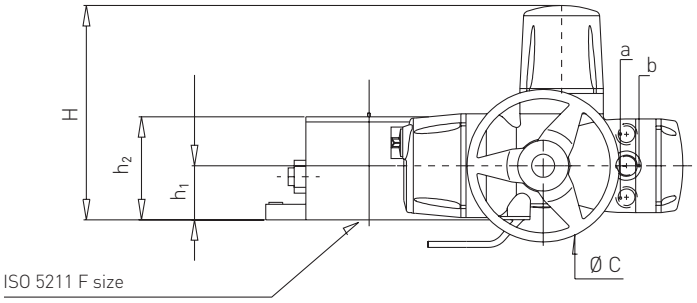


ICON 2000 SERIES WGR - METRIC (mm)

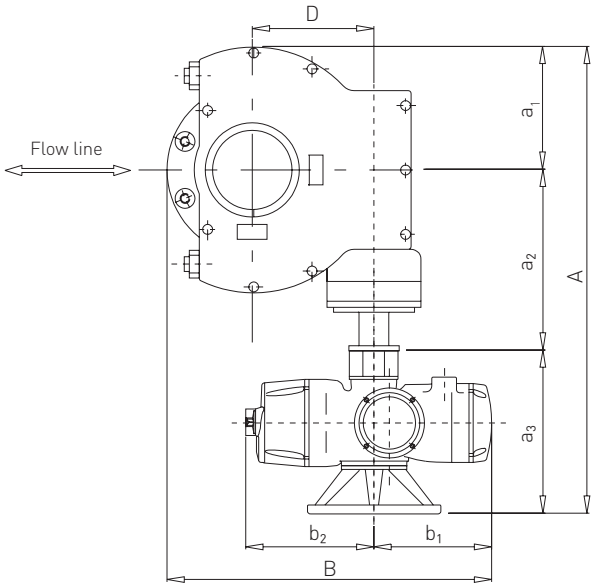
Model	ISO 5211	Ø d_1	Ø d_3	Ø d_4	N°	H	h_2	Ø Pin	d_7 max stem acceptence insert bush Ø d_7	Ø d_x
WGR-100	F14	175	140	M16	4	100	16	16	42	51
WGR-200	F16	210	165	M20	4	105	20	16	65	76
WGR-400	F16	210	165	M20	4	105	20	16	65	76
WGR-800	F25	300	254	M16	8	115	20	20	90	104
WGR-800	F30	350	298	M20	8	115	20	20	90	104
WGR-1600	F25	300	254	M16	8	140	24	20	103	120
WGR-1600	F30	350	298	M20	8	140	30	20	103	120
WGR-3200	F30	350	298	M20	8	165	30	20	120	139
WGR-3200	F35	415	356	M30	8	165	30	20	120	139
WGR-6300	F40	475	406	M36	8	250	35	30	170	194

NOTES

1. Insert bush supplied by Biffi with unmachined bore. Machining of bore upon request
2. Fixing bolts or rods supplied by Biffi only on request, minimum material class required 8.8 UNI37409, ASTM A320-L7
3. Any other coupling can be supplied on request
4. Flanges for models WGR-800, 1600 and 3200 have double PCD



Standard cable entries:
a = 1" NPT
b = 1½" NPT



ICON 2000 SERIES WGR OVERALL DIMENSIONS - METRIC (mm / kg)

Model	A	a_1	a_2	a_3	B	b_1	b_2	Ø C	D	F	H	h_1	h_2	Mass (kg)
WGR-100-010	519	90	139	290	421	273	292	300	86	F14	367	62	115	40
WGR-200-010	560	123	147	290	466	273	292	300	119	F16	381	53	125	52
WGR-400-010	662	123	269	270	491	273	292	500	119	F16	390	53	125	69
WGR-800-020	820	150	302	368	562	283	300	500	130	F25	397	60	135	85
WGR-1600-020	871	160	343	368	594	283	300	500	162	F25/F30	412	75	165	130
WGR-3200-020	943	250	325	368	700	283	300	500	243	F30/F35	427	90	180	166
WGR-3200-030	989	250	325	414	743	313	312	600	243	F30/F35	453	90	180	174
WGR-6300-020	1053	305	380	368	820	283	300	500	303	F40	472	135	270	509
WGR-6300-030	1099	305	380	414	844	313	312	600	303	F40	498	135	270	517
WGR-6300-040	1163	305	380	478	886	318	372	720	303	F40	596	135	270	527

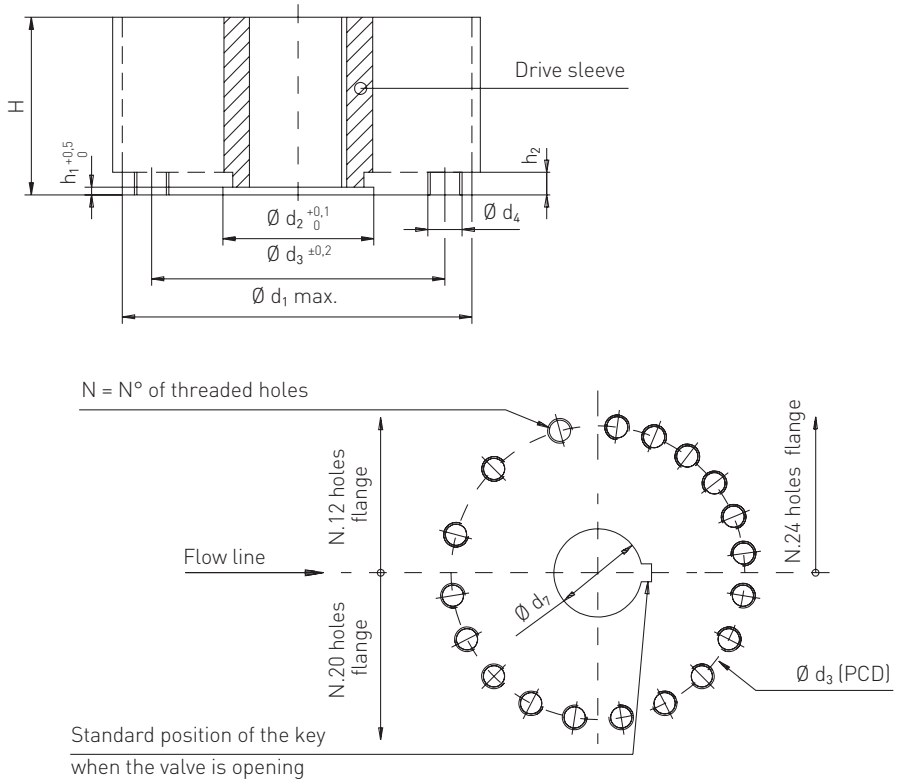
Scotch yoke reducer for application on valves requiring high torques at stroke limits (Open/Close). Also used on quarter turn valves when very high torques are required.

ICON 2000 SERIES ELGA ACTUATOR PERFORMANCE WITH THREE PHASE MOTOR[4]

Model [1]	Nom. torque[2] (100%) (Nm) Break to open	Running	End to open	Max. torque[3] (Nm)	Op. time/ 90°** (50 Hz)	Op. time/ 90°** (60 Hz)	ICON 2000 model	Motor power (kW) (at 50 Hz)	Motor power (kW) (at 60 Hz)
ELGA-14KR-020/94000-**	94000	54300	82000	141000	865	721	ICON-020/180-24(29)	0.286	0.343
ELGA-14KR-020/94000-**	94000	54300	82000	141000	577	481	ICON-020/180-36(43)	0.367	0.440
ELGA-14KR-020/94000-**	94000	54300	82000	141000	433	361	ICON-020/180-48(58)	0.526	0.631
ELGA-14KR-020/94000-**	94000	54300	82000	141000	288	240	ICON-020/180-72(86)	0.789	0.947
ELGA-14KR-020/94000-**	94000	54300	82000	141000	144	120	ICON-020/180-144(173)	1.470	1.764
ELGA-14KR-030/94000-**	94000	54300	82000	141000	69	58	ICON-030/360-144(173)	3.368	4.042
ELGA-14KR-040/94000-**	94000	54300	82000	141000	42	35	ICON-040/720-144(173)	5.818	6.982
ELGA-18KR-020/133000-**	133000	77000	116000	199500	1330	1108	ICON-020/180-24(29)	0.286	0.343
ELGA-18KR-020/133000-**	133000	77000	116000	199500	887	739	ICON-020/180-36(43)	0.367	0.440
ELGA-18KR-020/133000-**	133000	77000	116000	199500	665	554	ICON-020/180-48(58)	0.526	0.631
ELGA-18KR-020/133000-**	133000	77000	116000	199500	443	369	ICON-020/180-72(86)	0.789	0.947
ELGA-18KR-020/133000-**	133000	77000	116000	199500	222	185	ICON-020/180-144(173)	1.470	1.764
ELGA-18KR-030/133000-**	133000	77000	116000	199500	133	111	ICON-030/360-144(173)	3.368	4.042
ELGA-18KR-040/133000-**	133000	77000	116000	199500	57	48	ICON-040/720-144(173)	5.818	6.982
ELGA-32KR-030/266000-**	266000	156000	238000	399000	1272	1060	ICON-030/360-36(43)	0.789	0.947
ELGA-32KR-030/266000-**	266000	156000	238000	399000	954	795	ICON-030/360-48(58)	1.123	1.348
ELGA-32KR-030/266000-**	266000	156000	238000	399000	636	530	ICON-030/360-72(86)	1.470	1.764
ELGA-32KR-030/266000-**	266000	156000	238000	399000	318	265	ICON-030/360-144(173)	3.368	4.042
ELGA-32KR-040/266000-**	266000	156000	238000	399000	181	151	ICON-040/720-144(173)	5.818	6.982
ELGA-32KR-050/266000-**	266000	156000	238000	399000	75	63	ICON-050/1440-144(173)	11.636	13.963
ELGA-50KR-030/334000-**	334000	197000	300000	501000	1280	1067	ICON-030/360-36(43)	0.789	0.947
ELGA-50KR-030/334000-**	334000	197000	300000	501000	960	800	ICON-030/360-48(58)	1.123	1.348
ELGA-50KR-030/334000-**	334000	197000	300000	501000	640	533	ICON-030/360-72(86)	1.470	1.764
ELGA-50KR-030/334000-**	334000	197000	300000	501000	320	267	ICON-030/360-144(173)	3.368	4.042
ELGA-50KR-040/334000-**	334000	197000	300000	501000	152	127	ICON-040/720-144(173)	5.818	6.982
ELGA-50KR-050/334000-**	334000	197000	300000	501000	65	54	ICON-050/1440-144(173)	11.636	13.963

NOTES

1. The ** are to be replaced by operating time value at selected frequency (50 or 60 Hz)
2. Nominal output torque settable from 40% (minimum torque) to 100% of indicated value
3. Theoretic max output torque. The actual max output torque is a function of speed and motor power supply and may vary from 1.3 to 2 times nominal output torque
4. The performance table above relates to ON/OFF S2-15' or INCHING S4-25%-60 starts/hour duties (IEC34-1)



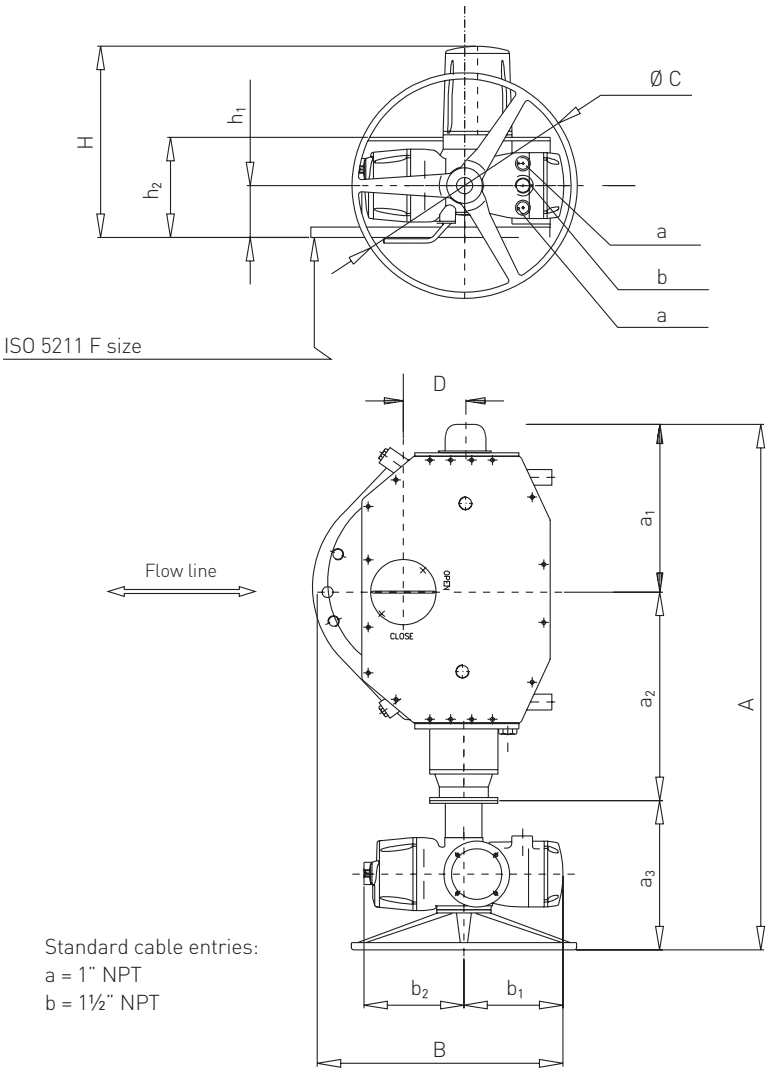
ICON 2000 SERIES ELGA - METRIC (mm)

Model	**Elga 14**	**Elga 18**	**Elga 32**	**Elga 50**
ISO 5211[2]	**F48**	**F60**	**F60**	**SPECIAL**
Ø d_1	580	680	780	800
Ø d_2[5]	250	290	290	315
Ø d_3	483	603	603	698
Ø d_4[6]	M36	M36	M36	M36
h_1[5]	10	12	12	10
h_2	29	32	32	32
N	12	20	20	24
H	340	350	400	430
d_7 max stem accept. - rectangular key UNI/DIN[3]	Ø200	Ø220	Ø230	Ø255
d_7 max stem accept. - square key[4]	Ø175	Ø190	Ø200	Ø225
d_7 max stem accept. - square stem	150	170	175	190

NOTES

1. Drive sleeve supplied by Biffi with unmachined bore. Machining of bore upon request
2. Different values of flange dimensions can be supplied on request
3. Keyway for rectangular key, according to DIN 6885 SH.1 or BS 4235 or UNI 6604 or equivalent
4. Keyway for square key according to ANSI B17.1-1967 or equivalent
5. Female spigot supplied as a standard. Male spigot supplied on request
6. Fixing bolts or rods supplied by Biffi only on request, minimum material class required 8.8 UNI37409, ASTM A320-L7

ELGA OVERALL DIMENSIONS



ICON 2000 SERIES ELGA OVERALL DIMENSIONS - METRIC (mm / kg)

Model	A	a_1	a_2	a_3	B	b_1	b_2	Ø C	D	F	H	h_1	h_2	Mass (kg)
14KR-020	1619	536	778	305	772	283	300	500	200	F48	463	166	320	650
14KR-030	1653	536	778	339	793	313	312	600	200	F48	476	166	320	660
14KR-040	1712	536	778	398	835	318	372	720	200	F48	627	166	320	670
18KR-020	1727	583	839	305	852	283	300	500	230	F60	542	195	383	800
18KR-030	1761	583	839	339	873	313	312	600	230	F60	595	195	383	810
18KR-040	1820	583	839	398	915	318	372	720	230	F60	656	195	383	820
32KR-030	1.964	663	1.124	339	863	313	312	600	270	F60	632	232	464	960
32KR-040	2.064	663	1.164	398	1005	318	372	720	270	F60	693	232	464	970
32KR-050	2.185	663	1.244	478	1049	363	392	860	270	F60	750	232	464	980
50KR-030	2.340	710	1.291	339	1003	313	312	600	300	SPEC.	633	233	561	1180
50KR-040	2.439	710	1.331	398	1045	318	372	720	300	SPEC.	694	233	561	1190
50KR-050	2.599	710	1.411	478	1089	363	392	860	300	SPEC.	751	233	561	2000

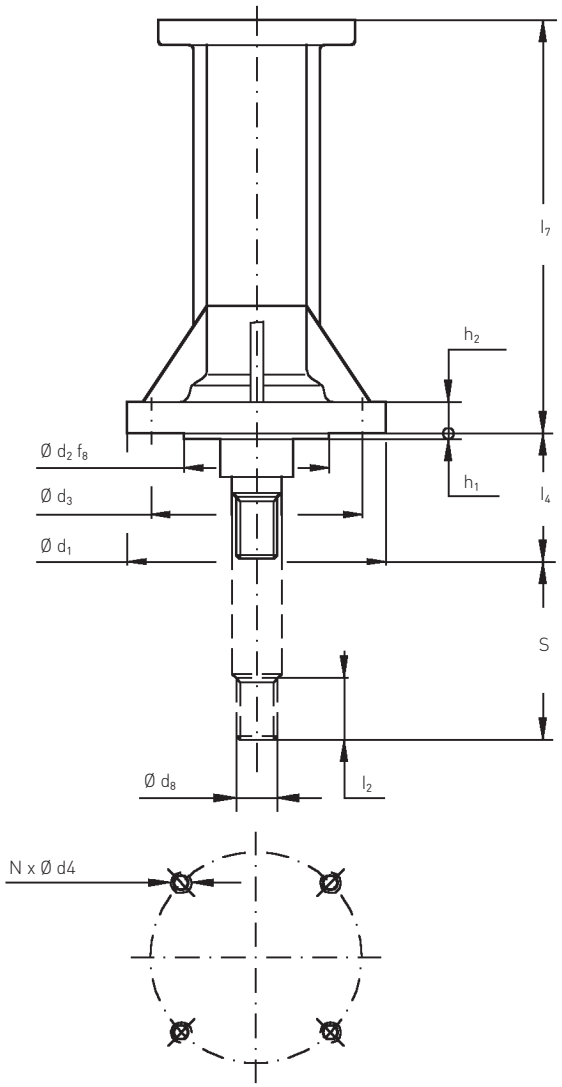
For specific application on linear valves (gate, globe...) with non-threaded stem, generally to replace piston or diaphragm pneumatic actuators.

ICON 2000L LINEAR ACTUATOR PERFORMANCE WITH THREE PHASE MOTOR[3]

Model[1]	Nominal thrust[2] (100%) (kN)	Min. thrust (40%) (kN)	Linear speed[4] ** (mm/secs) (at 50 Hz)	Linear speed[4] ** (mm/secs) (at 60 Hz)	Motor power (kW) (at 50 Hz)	Motor power (kW) (at 60 Hz)	R
ICON-010L/10-**	10	4	0.6	0.7	0.030	0.036	40:1
ICON-010L/10-**	10	4	0.9	1.1	0.046	0.055	40:1
ICON-010L/10-**	10	4	1.2	1.4	0.071	0.085	20:1
ICON-010L/10-**	10	4	1.4	1.7	0.106	0.127	20:1
ICON-010L/10-**	10	4	2.2	2.6	0.142	0.170	20:1
ICON-010L/10-**	10	4	3.6	4.3	0.213	0.256	20:1
ICON-010L/40-**	40	16	0.6	0.7	0.071	0.085	40:1
ICON-010L/40-**	40	16	0.9	1.1	0.106	0.127	40:1
ICON-010L/40-**	40	16	1.2	1.4	0.122	0.146	20:1
ICON-010L/40-**	40	16	1.4	1.7	0.184	0.221	20:1
ICON-010L/40-**	40	16	2.2	2.6	0.286	0.343	20:1
ICON-010L/40-**	40	16	3.6	4.3	0.367	0.440	20:1
ICON-020L/60-**	60	24	0.8	1.0	0.122	0.146	40:1
ICON-020L/60-**	60	24	1.2	1.4	0.184	0.221	40:1
ICON-020L/60-**	60	24	1.6	1.9	0.286	0.343	40:1
ICON-020L/60-**	60	24	2.4	2.9	0.367	0.440	40:1
ICON-020L/60-**	60	24	3.2	3.8	0.526	0.631	20:1
ICON-020L/60-**	60	24	4.8	5.8	0.789	0.947	20:1
ICON-030L/90-**	90	36	1.0	1.2	0.526	0.631	80:1
ICON-030L/90-**	90	36	1.5	1.8	0.500	0.600	40:1
ICON-030L/90-**	90	36	2.0	2.4	0.526	0.631	40:1
ICON-030L/90-**	90	36	3.0	3.6	0.789	0.947	40:1
ICON-030L/90-**	90	36	4.0	4.8	1.123	1.348	20:1
ICON-030L/90-**	90	36	6.0	7.2	1.470	1.764	40:1
ICON-040L/150-**	150	60	1.6	1.9	1.123	1.348	80:1
ICON-040L/150-**	150	60	2.4	2.9	0.840	1.008	40:1
ICON-040L/150-**	150	60	3.2	3.8	1.123	1.348	40:1
ICON-040L/150-**	150	60	4.8	5.8	1.684	2.021	40:1
ICON-040L/150-**	150	60	6.4	7.7	1.939	2.327	20:1
ICON-040L/150-**	150	60	9.6	11.5	3.368	4.042	40:1

NOTES

1. The ** are to be replaced by linear speed value at selected frequency (50 or 60 Hz)
2. Nominal output thrust settable from 40% (minimum thrust) to 100% of indicated value
3. The performance table below relates to ON/OFF S2-15' or INCHING S4-25%-60 starts/hour duties (IEC34-1)
4. Referred to Running thrust = 40% nominal thrust
5. Modular duty version available on request



ICON 2000L LINEAR ACTUATOR - METRIC (mm / kg)

Model	**010L**	**020L**	**030L**	**040L**
ISO 5210 / DIN3358	**F10**	**F14**	**F14**	**F16**
F_{nom} (kN)	40	60	80	150
F_{max} (kN)	60	90	135	225
Ø d_1	125	175	175	210
Ø d_2 f_8	70	100	100	130
Ø d_3	102	140	140	165
Ø d_4	M10	M16	M16	M20
Ø d_8 (left)	M20x1.5	M36x3	M36x3	M42x3
h_1	3	4	4	4
h_2	15	24	24	30
l_7	265	375	480	580
l_2	25	55	55	65
l_4	35	60	60	80
N	4	4	4	4
S (max stroke)	100	160	200	300
Mass (kg)	10	18	22	28

NOTES

1. The stem is drawn in fully retracted position.
2. The stem end (Ø d_8) is left hand thread
3. Only axial loads are permitted
4. F_{nom} = the maximum thrust applicable to the linear thrust block in dynamic conditions with torque control set at 100%

   F_{max} = the maximum thrust applicable to the linear thrust block in static conditions with manual override or with motor in stall torque