xylem

Let's Solve Water
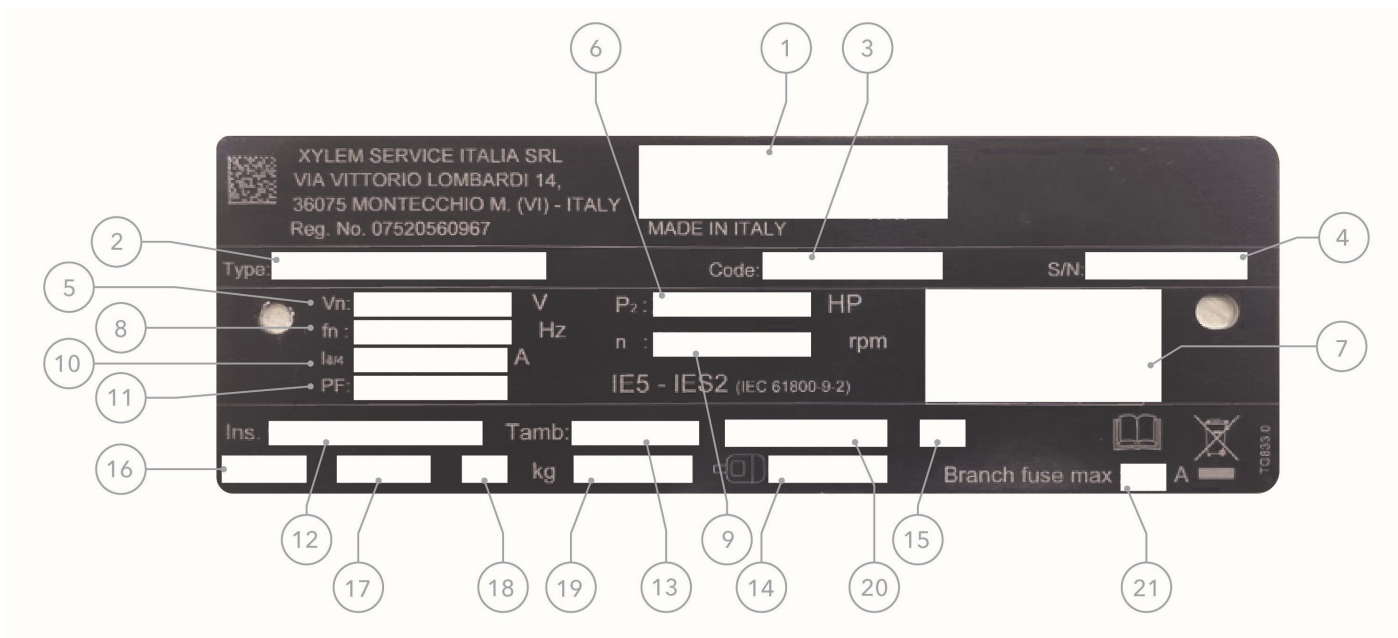

hydrovar® X Smart Motor
Specifications
EXM143-145/4.020BH4
2 HP, 1200-2000 RPM, 3PH, 60HZ, 380-480V
143-145 Frame, TEFC

hydrovar X Nameplate Legend

1. Certification markings (CE, UKCA, UL Recognized)
2. Motor type
3. Motor code
4. Unique motor serial number
5. Voltage range
6. Output power (kW / HP)
7. Full load rated PDS efficiency (motor and drive combined efficiency)
8. Frequency compatibility
9. Full load rated speed
10. Full load rated current range
11. Power factor
12. Insulation class
13. Ambient operating temperature
14. Non-drive end bearing
15. Service factor
16. IP environmental protection rating
17. NEMA environmental protection rating
18. Weight
19. Drive end bearing
20. Duty cycle rating
21. Circuit protection requirement

hydrovar X Nameplate Information (representative example)*

XYLEM SERVICE ITALIA SRL
VIA VITTORIO LOMBARDI 14,
36075 MONTECCHIO M. (VI) - ITALY
Reg. No. 07520560967

CE UKCA

MADE IN ITALY

Type: EXM143-145/4.020BH4   Code: S/N:

Vn: 3~ 380-480 V P_2: 1.5   kW/ 2   HP

fn: 50/60 Hz   n: 1500 - 2000   rpm

$I_{4/4}$: 4.0-3.8 A

PF: 0.57   IE5 - IES2 (IEC 61800-9-2)

Ins. Cl. 155 (F)   DV155-J   Tamb: -20 - 50°C   S1 - Continuous   SF1

IP 55   ENC.4   kg   6306 -ZZ   6305 -ZZ   Branch fuse max :0   A

PDS Eff. 460V	4/4
1500 rpm	82.2
1800 rpm	85.1
2000 rpm	86.7

*This is a representative example of the actual data that will be displayed on the Nameplate for the motor combination featured in this document.

hydrovar X Data Plate Legend
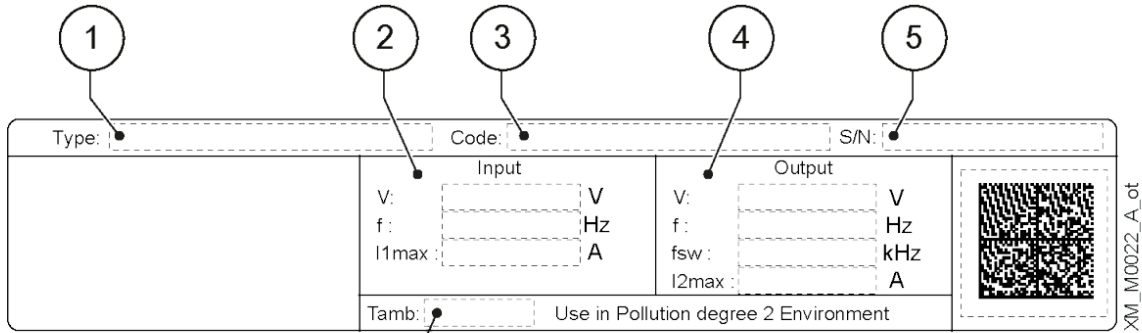
1. Model
2. Input operating limits
3. Identification code
4. Output operating limits
5. Serial number
6. Room temperature range

hydrovar X Data Plate Information (representative) image*

*Data Plate contains values for the motor combinations specified in this document.

hydrovar® X EXM143-145/4.020BH4 – 2 HP, 1200-2000 RPM, 3PH, 60HZ, 380-480V, 143-145, TEFC

Motor Type: EXM143-145/4.020BH4

NEMA Frame	Part Number	Weight lbs (kg)
143-145T	130635530	54 (24)
143-145TC	130635570	54 (25)
143-145JM	130635610	56 (25)
143-145JM (footed)	130637890	56 (25)

Combined Motor and Drive Specifications

Description	Value			
Motor HP	2			
Enclosure	TEFC			
Frame Material	Cast Iron/Aluminum			
Nominal Voltage @ Frequency	460V @ 60Hz			
XP Class	None			
XP Division	Not Applicable			
Agency Approvals	UL	CE		
	FCC	UKCA		
Insulation Class	F			
Bearing Grease Type	Polymer 400			
Lifting Lugs	Standard			
Voltage	380-480 V (+/- 10%)			
Phase	3			
Input Current (380-480V)	4.0-3.8 A			
Power Factor	0.57			
Enclosure Rating	IP55			
	NEMA4			
Tamb	-4 to +122° F			
	-20 to +50° C			
DE Bearing	6306-ZZ			
ODE Bearing	6305-ZZ			
Duty Cycle	S1			

hydrovar® X EXM143-145/4.020BH4 – 2 HP, 1200-2000 RPM, 3PH, 60HZ, 380-480V, 143-145, TEFC

Combined Motor and Drive Performance (Nominal Voltage)[1]

Rated Speed	Torque (lb.ft)	Efficiency 100%	Efficiency 75%	Efficiency 50%	Sound Pressure dB(A)[2]
2000 RPM	5.28	86.7	86.4	85.3	50
1800 RPM	5.87	85.1	85.9	85.6	48
1500 RPM	7.04	82.2	83.2	83.0	48

[1]Motor may operate below 1500 RPM at partial load. Efficiency represents PDS (power-drive-system) efficiency.

[2]Sound power measured at 1m distance in no-load condition according to ISO 9614-2 and sound pressure values determined according to the ISO 11203 method. Sound pressure tolerance is +/- 2 dB for all voltages.

Drive Features and Specifications

Description	Value
Display	Graphic color display
Communication Protocols	MODBUS® RTU BACnet MS/TP
Mobile App	Bluetooth®
Control Modes	Actuator, Constant pressure, Proportional pressure, Proportional quadratic pressure,Constant flow, Constant temperature, Constant level
RS485 Ports	2
Analog Inputs	4
Analog Input Configuration	0-20 mA / 4-20 mA / 0-10V / 2-10V
Digital Inputs*	5
Analog Outputs	1
Analog Output Configuration	0-20 mA / 4-20 mA / 0-10V / 2-10V
Relay Output (Form C)*	2
10V Supply	1
Leakage Current	< 3.5 mA
Storage Temperature	-40 to +158° F -40 to +70° C
Altitude (without derating)	0 to 3281 ft [0-1000 m]
Humidity	Max 95% non-condensing

* See Auxiliary Connections data on the next page for more detail.

hydrovar X with Feet

hydrovar® X EXM143-145/4.020BH4 – 2 HP, 1200-2000 RPM, 3PH, 60HZ, 380-480V, 143-145, TEFC

Auxiliary Connections
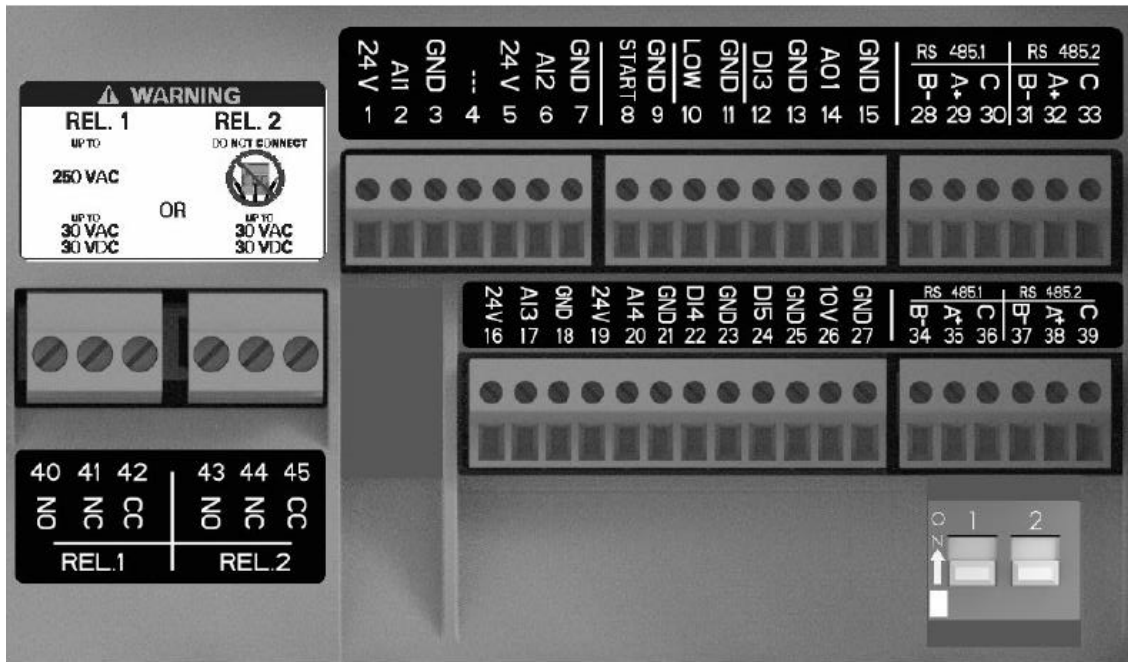
XM_M0020_A_ph

Position number	Name	Description	Default setting
1	Analog input 1	Power supply +24 VDC, max. 60 mA (total, terminals 1 + 5)	Pressure sensor 1
2		Configurable Analog input 1	
3		Electronic GND	
4	Reserved	For internal use, do not connect	-
5	Analog input 2	Power supply +24 VDC, max. 60 mA (total, terminals 1 + 5)	Not selected
6		Configurable Analog input 2	
7		Electronic GND	
8	External start/stop	Digital start/stop input, internal pull-up +24 VDC, contact current 6 mA	-
9		Electronic GND	
10	External lack of water	Low water level digital input, internal pull-up +24 VDC, contact current 6 mA	-
11		Electronic GND	
12	Digital Input 3	Configurable digital input 3, internal pull-up +24 VDC, contact current 6 mA	Emergency start at maximum speed
13		Electronic GND	
14	Analog output	Configurable Analog output	Motor Speed
15		Electronic GND	
16	Analog input 3	Power supply +24 VDC, max. 60 mA (total, terminals 16 and 19)	Not selected
17		Configurable Analog input 3	
18		Electronic GND	

Auxiliary Connections (Continued)

Position number	Name	Description	Default Setting
19	Analog input 4	Power supply +24 VDC, max. 60 mA (total, terminals 16 and 19)	Not selected
20		Configurable Analog input 4	
21		Electronic GND	
22	Digital input 4	Configurable digital input 4, internal pull -up +24 VDC, contact current 6mA	Not selected
23		Electronic GND	
24	Digital input 5	Configurable digital input 4, internal pull -up +24 VDC, contact current 6mA	Not selected
25		Electronic GND	
26	10 VDC power supply	Power supply +10 VDC, max. 3 mA	-
27		Electronic GND	
28	Communication Bus 1	RS485 port 1: RS485-1B N (-)	Multipump
29		RS485 port 1: RS485-1A P (+)	
30		RS485 port 1: RS485-COM	
31	Communication Bus 2	RS485 port 2: RS485-2B (-)	MODBUS
32		RS485 port 2: RS485-2A P (+)	
33		RS485 port 2: RS485-COM	
34	Communication Bus 1	RS485 port 1: RS485-1B N (-)	Multipump
35		RS485 port 1: RS485-1A P (+)	
36		RS485 port 1: RS485-COM	
37	Communication Bus 2	RS485 port 2: RS485-2B N (-)	MODBUS
38		RS485 port 2: RS485-2A P (+)	
39		RS485 port 2: RS485-COM	
40	Relay 1	Configurable relay 1: normally open	Error Reporting
41		Configurable relay 1: normally closed	
42		Configurable relay 1: normally contact	
43	Relay 2	Configurable relay 2: normally open	Motor start
44		Configurable relay 2: normally closed	
45		Configurable relay 2: normally contact	

hydrovar X Smart Motor Drawings

clockwise rotation standard (view from back of motor)

[THE DIMENSIONS IN BRACKETS ARE IN INCHES]

hydrovar® X Smart Motor	
Revision 1	11/16/2023
Motor Frame	143-145T
Part Number	130635530
Voltage [V]	380-480
Power [HP]	2
Weight [lbs (kg)]	54 (24)

hydrovar X Smart Motor Drawings

clockwise rotation standard (view from back of motor)

Standard TC frame motors are non-footed.

[THE DIMENSIONS IN BRACKETS ARE IN INCHES]
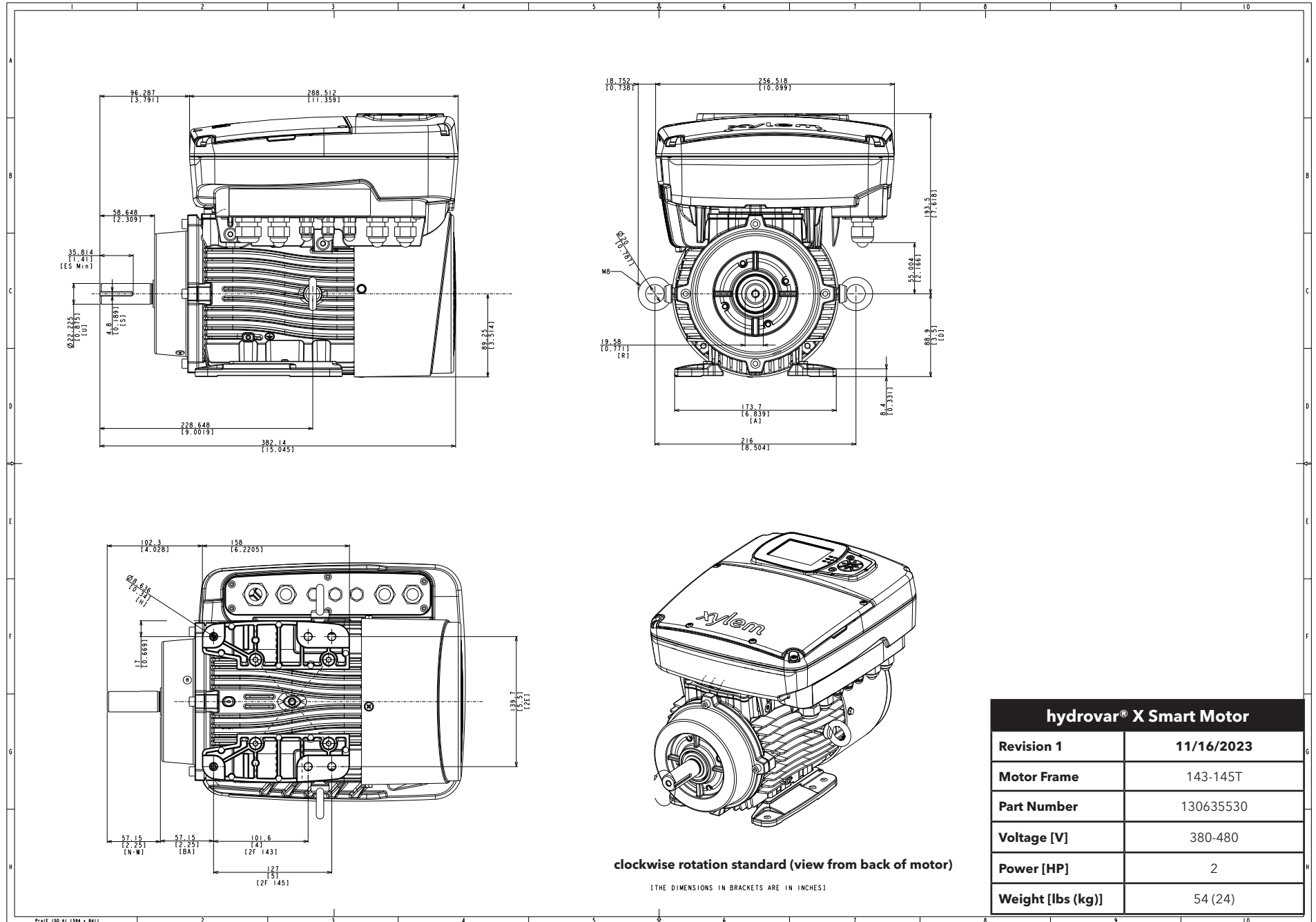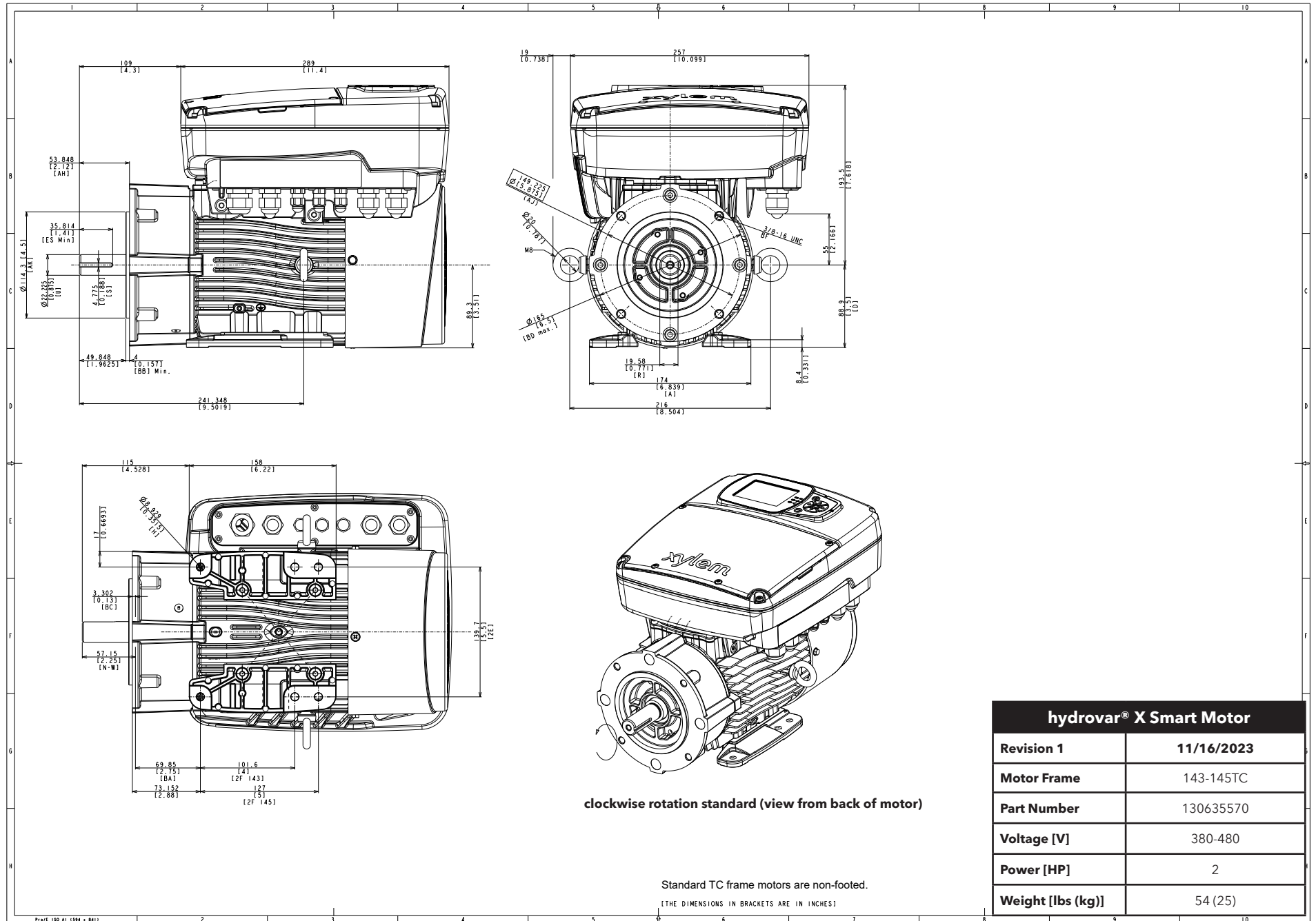
hydrovar® X Smart Motor	
Revision 1	11/16/2023
Motor Frame	143-145TC
Part Number	130635570
Voltage [V]	380-480
Power [HP]	2
Weight [lbs (kg)]	54 (25)

hydrovar X Smart Motor Drawings

clockwise rotation standard (view from back of motor)

[THE DIMENSIONS IN BRACKETS ARE IN INCHES]
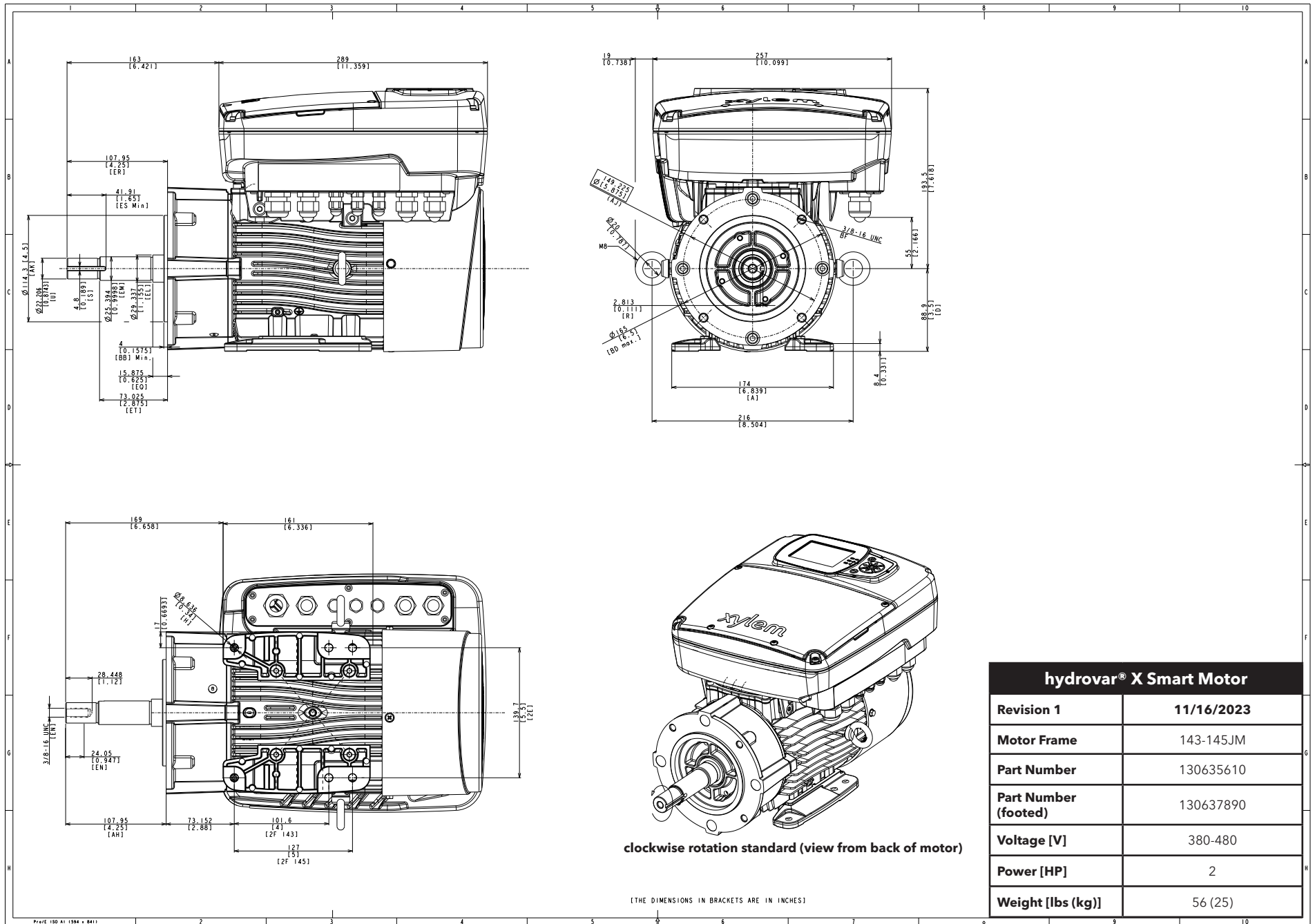
hydrovar® X Smart Motor	
Revision 1	**11/16/2023**
Motor Frame	143-145JM
Part Number	130635610
Part Number (footed)	130637890
Voltage [V]	380-480
Power [HP]	2
Weight [lbs (kg)]	56 (25)

hydrovar® X EXM143-145/4.020BH4 – 2 HP, 1200-2000 RPM, 3PH, 60HZ, 380-480V, 143-145, TEFC

NOTES

Xylem |ˈzīləm|

1) The tissue in plants that brings water upward from the roots;
2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

For more information on how Xylem can help you, go to www.xylem.com

Xylem Product Cybersecurity
Xylem values your system security and the availability of your critical services. For more information on Xylem cybersecurity practices or to contact the cybersecurity team please visit www.Xylem.com/security.

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Let's Solve Water

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