

MPX1400

SMALL ROBOT OPTIMIZED FOR PAINTING

KEY BENEFITS

Large global install base backed by Yaskawa's experience and reliability

Straight wrist with 5 kg payload capacity

Easy-to-use touch screen teach pendant

MotoSim® EG-VRC 2017 (or later) simulation software product (optional)

SPECIFICATIONS

5 kg wrist payload

1,256 mm horizontal reach

1,852 mm vertical reach

±0.1 mm repeatability

APPLICATION

Coating

Dispensing

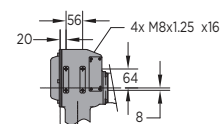
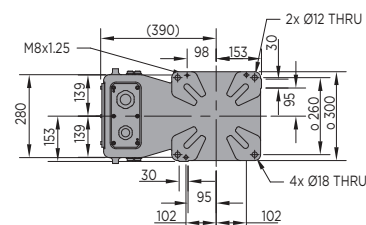
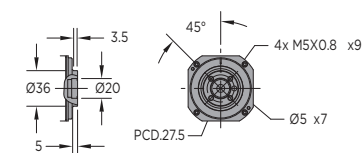
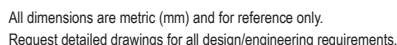


- High-speed, six-axis MPX1400 robot is ideal for painting of smaller components.
- Offers superior performance and creates smooth, consistent finish with outstanding efficiency for painting and dispensing applications.
- Wrist payload of 5 kg and high allowable moment ratings are well-suited for mounting a variety of spray guns and small bells.
- Small footprint, slim arm design allows for minimum installation space.
- Reduced interference envelope enables painting of workpieces closer to the robot.
- Broad motion range enables painting multiple small parts simultaneously, as well as items such as instrument panels and headlamp assemblies.
- Optional location (back or bottom) for manipulator cable connection reduces interference with walls.
- Factory Mutual approved for Class I, Div. 1 use in hazardous environments.
- Versatile design can be floor, wall or ceiling mounted for layout flexibility.

DX200-FM CONTROLLER

- Includes application-specific software for paint applications.
- Supports paint hardware configurations including: trigger delays, air calibrations and valve timing programs.
- Accommodates paint control instructions such as spray start/stop and painting condition files.
- Supports standard networks (such as EtherNet, EtherNet IP, CC-Link, and DeviceNet), enabling connection to paint equipment controllers and production line controllers.
- Intrinsically safe pendant (optional).
- The DX200-FM is available with Category 3 Performance Level d (PLd) Functional Safety Unit (FSU), which supports safety-rated speed control, safety-rated soft axis and space limiting, and safety-rated monitor stop. In addition to enabling safe operation in smaller spray booths with adjacent manual operations, these safety functions can be utilized to save costs and reduce floorspace requirements.

MPX1400 ROBOT



SPECIFICATIONS

MPX1400 SPECIFICATIONS		
Structure		Vertical jointed-arm type
Controlled Axes		6
Payload		5 kg
Vertical Reach		1,852 mm
Horizontal Reach		1,256 mm
Repeatability		±0.1 mm
Maximum Motion Range	S-Axis (Turning/Sweep)	±170° (wall mounted: ±60°)
	L-Axis (Lower Arm)	+120°/-65°
	U-Axis (Upper Arm) (relative angle of lower arm)	+205°/-165°
	R-Axis (Wrist Roll)	±190°
	B-Axis (Bend/Pitch/Yaw)	±145°
	T-Axis (Wrist Twist)	±360°
Maximum Speed		1.5 m/s
Approximate Mass		120 kg
Brakes		All axes
Power Consumption		1.5 kVA
Allowable Moment	R-Axis	12 N · m
	B-Axis	12 N · m
	T-Axis	7 N · m
Allowable Moment of Inertia	R-Axis	0.3 kg · m ²
	B-Axis	0.3 kg · m ²
	T-Axis	0.1 kg · m ²
Mounting		Floor, Wall, Ceiling

INTRINSICALLY SAFE PENDANT SPECIFICATIONS (OPTIONAL)	
Dimensions (mm)	235 (w) x 203 (h) x 78 (d)
Mass	1.3 kg
Material	Reinforced plastics
Operation Device	Select keys, axes keys, numerical/application keys, emergency stop button, enable switch
Display	5.7-inch monochrome LCD, backlit white LED, touch panel 320 x 240 pixels (Alphanumeric characters, Chinese characters, Japanese letters, others)
IEC Protection Class	IP54
Cable Length	Standard: 8 m, Optional 20 m Max: 50 m (with optional extension cable)

DX200-FM CONTROLLER SPECIFICATIONS (WITH STANDARD PENDANT)	
Structure	Free-standing, enclosed type
Dimensions (mm)	600 (w) x 1349 (h) x 520 (d) with transformer
Approximate Mass	250 kg with transformer
Cooling System	Indirect cooling
Ambient Temperature	During operation: 0° C to 40° C During transit and storage: -10° C to +45° C
Relative Humidity	90% max. non-condensing
Primary Power Requirements	3-phase, 240/480/575 VAC at 50/60 Hz Optional external transformer allows 240/480/575 VAC at 50/60 Hz
Grounding	Grounding resistance: ≤100 ohms Separate ground required
Digital I/O	Specialized signals: 28 inputs and 7 outputs General signals: 40 inputs and 40 outputs (Specialized allocation: 24 inputs and 4 outputs; General allocation: 16 inputs and 16 outputs) Max. I/O (optional): 4,096 inputs and 4,096 outputs
Position Feedback	By absolute encoder
Drive Units	Servo packs for AC servo motors
Accel/Decel	Software servo control
Program Capacity	JOB: 200,000 steps; 10,000 instructions Concurrent I/O ladder: 20,000 steps
Fieldbus Options	CC Link, DeviceNet, Ethernet, EtherNet/IP, EtherCAT, PROFINET
Ethernet	10 Base T/100 Base TX
E-Stop	Controlled stop
Safety	Dual-channel Emergency Stop Pushbuttons, 3-position Enable Switch, Meets ANSI/RIA R15.06-1999 and Canadian safety standards
Pendant Dim. (mm)	169 (w) x 314.5 (h) x 50 (d)
Pendant Mass	0.99 kg
Pendant Playback Buttons	Teach, Play, Remote, Servo On, Start, Hold, Emergency Stop, Edit Lock (Play Mode enabled on controller)