

UR20

Technical Specification

The UR20, the first of our next-generation high performance cobots, has been redesigned from the ground up to provide up to 30% more speed and torque, advanced motion control capabilities, and first-class user experience.

UR cobots bring incredible versatility and unparalleled ease of use to your applications. The UR20 is no exception - its 20 kg payload and 1750 mm reach make it an ideal match for applications ranging from palletizing to machine loading.

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* Preliminary Specification.
 Subject to change.

UR20*

Specification

| | | |
|--|---|--|
| Payload | 20 kg (44.1 lbs) at full CoG offset and in the entire workspace | |
| Reach | 1750 mm (68.9 in) | |
| Degrees of Freedom | 6 rotating joints | |
| Programming | 12 inch touchscreen with PolyScope graphical user interface | |
| Power, Consumption, Maximum Average | 1500 W | |
| Power, Consumption, Typical with Moderate Settings (approximate) | 500 W | |
| Safety | 17 configurable safety functions | |
| Certifications | EN ISO 13849-1, PLd Category 3, and EN ISO 10218-1, UL1740 | |

Performance

| Force Sensing, Tool Flange | Force, x-y-z | Torque, x-y-z |
|----------------------------|--------------|---------------|
| Range | 200 N | 20.0 Nm |
| Precision | 5.5 N | 0.2 Nm |
| Accuracy | 10 N | 1 Nm |

Movement

| Pose Repeatability per ISO 9283 | ± 0.05 mm | |
|---------------------------------|---------------|---------------|
| Axis Movement | Working range | Maximum speed |
| Base | ± 360° | ± 120°/s |
| Shoulder | ± 360° | ± 120°/s |
| Elbow | ± 360° | ± 150°/s |
| Wrist 1 | ± 360° | ± 210°/s |
| Wrist 2 | ± 360° | ± 210°/s |
| Wrist 3 | ± 360° | ± 210°/s |
| Typical TCP speed | 2 m/s | |

Features

| IP Classification | IP54 | |
|-------------------------------|---------------------------------|--|
| ISO 14644-1 Class Cleanroom | 5 | |
| Noise | Less than 65 dB(A) | |
| Robot Mounting | Any Orientation | |
| I/O Ports | | |
| Digital In | 2 | |
| Digital Out | 2 | |
| Analog In | 2 | |
| Tool I/O Power Supply Voltage | 12/24 V | |
| Tool I/O Power Supply | 2 A (Dual pin) 1 A (Single pin) | |

Physical

| | | |
|-----------------------------|------------------------------------|--|
| Footprint | Ø 245 mm 6 x M10 60° 105 mm center | |
| Materials | Aluminum, Plastic, Steel | |
| Tool Flange | EN ISO-9409-1-80-6-M8 | |
| Connector Type | M8 M8 8-pin | |
| Cable Length (Robot Arm) | 6 m (236 in) | |
| Weight Including Cable | 64 kg (141.1 lbs) | |
| Operating Temperature Range | 0-50°C (32-122°F) | |
| Humidity | 90%RH (non-condensing) | |

Control Box

Features

| IP Classification | IP44 | |
|-----------------------------|--------------------------|--|
| ISO 14644-1 Class Cleanroom | 6 | |
| Operating Temperature Range | 0-50°C | |
| Humidity | 90%RH (non-condensing) | |
| I/O Ports | | |
| Digital In | 16 | |
| Digital Out | 16 | |
| Analog In | 2 | |
| Analog Out | 2 | |
| Quadrature Digital Inputs | 4 | |
| I/O Power Supply | 24V 2A | |
| Communication | | |
| | 500 Hz Control frequency | |
| | Modbus TCP | |
| | PROFINET | |
| | Ethernet/IP | |
| | USB 2.0, USB 3.0 | |
| Power Source | 100-240VAC, 47-440Hz | |

Physical

| | | |
|------------------------------|--|--|
| Control Box Size (W x H x D) | 460 mm x 449 mm x 254 mm (18.2 in x 17.6 in x 10 in) | |
| Weight | 12 kg (26.5 lbs) | |
| Materials | Powder Coated Steel | |

The control box is also available in an OEM version

3-Position Enabling Teach Pendant

Features

| | | |
|----------------------------|--|--|
| IP Classification | IP54 | |
| Included in Certifications | EN ISO 10218-1:2011 EN ISO 13849-1:2015 | |
| Humidity | 90% RH (non-condensing) | |
| Display Resolution | 1280x800 pixels | |

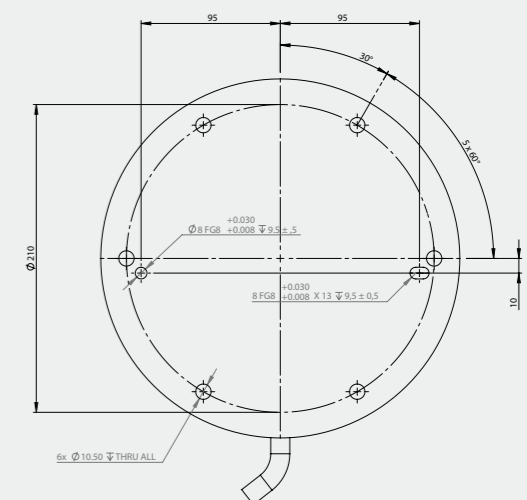
Physical

| | | |
|--------------------------------|--|--|
| Materials | Plastic | |
| Teach Pendant Size (W x H x D) | 300 mm x 231 mm x 50 mm (11.8 in x 9.1 in x 1.97 in) | |
| Weight | 1.8 kg (3.961 lbs) including 1 m of teach pendant cable | |
| Cable Length | 4.5 m (177.17 in) | |

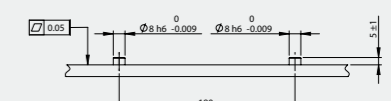


Recommended hole pattern for Robot Base

Bottom View of Robot Base



Mounting Plate with Pins for Robot Base



UNLESS OTHERWISE SPECIFIED: Dimensions are in millimeters.
 Tolerance ± 0.1mm ± 0.5°