

# MOTOMAN HC20DT

## Human-Collaborative Robot 6 integrated Sensors

MOTOMAN HC20DT is a 6 axes human-collaborative robot with a payload of up to 20 kg. Operator's safety is assured by a Power and Force Limit technology that stops the robot in case of contact with an operator.

The robot arm can be hand guided by an operator and robot positions and gripper operation can be registered via

“Teach” and “Tool” buttons. These features offer time saving during the robot programming. The robot's arm geometry was designed to avoid pinch points (finger).

The MOTOMAN HC20DT robot can operate without additional protective measures like a safety fence, depending on the risk assessment. This saves space and costs.

### KEY BENEFITS

#### Controller

- Fully industrial robot controller YRC1000 and YRC1000micro

#### High safety

- Contact force between operator and robot is limited to a safe level
- Safety by Design: rounded edges without pinch points (finger protections)
- Internal cable routing
- Safety standards – applications for industrial robots: ISO 10218-1 (5.10.5 Power and Force Limiting)
- Complies to ISO TS 15066
- Safety functions industrial robot controller: ISO 13849-1, PLd, Cat. 3
- Functional Safety Unit included
- Safe Force/Torque Sensors in all 6 links

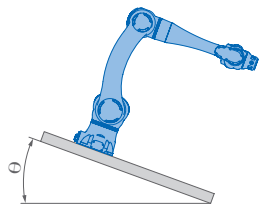
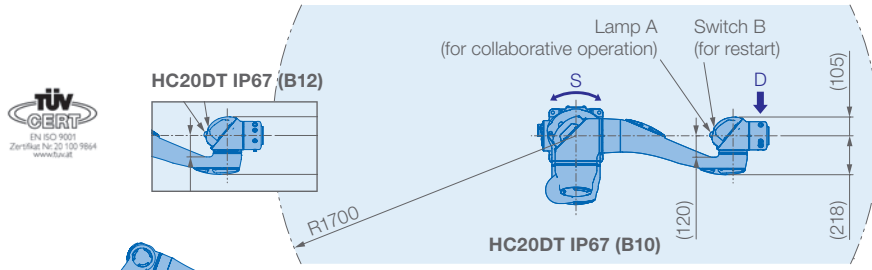
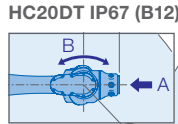
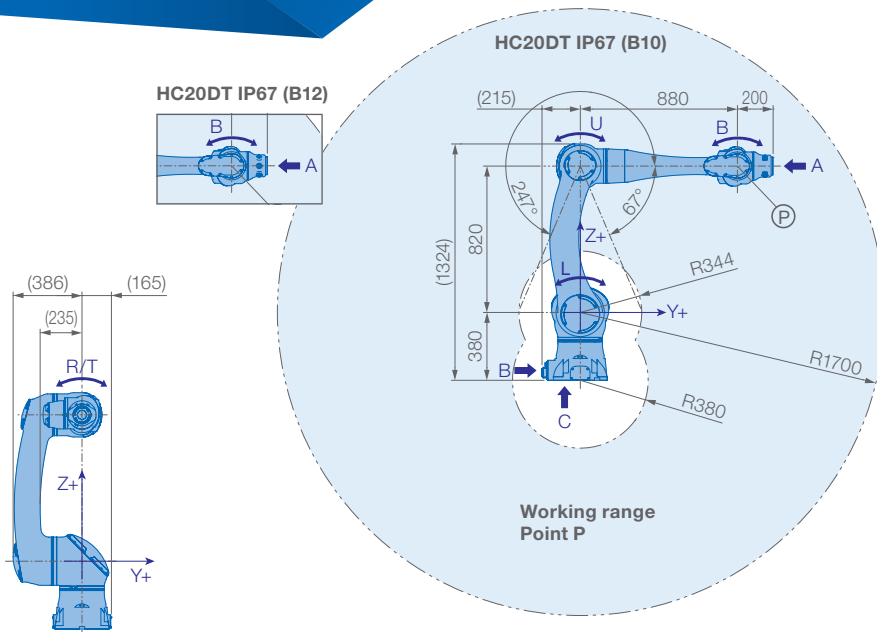
#### Easy teaching

- Move the robot arm directly via hand guiding function: easy teaching mode with a switch box

#### Safety and Speed

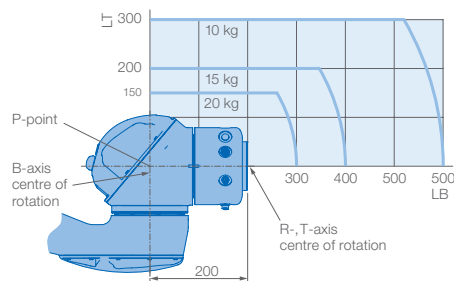
- Depending on the application, the MOTOMAN HC20DT can be switched between safe/collaborative mode in phases of man-robot-interaction, and returning into high speed when absence of the operator is detected by additional safety devices



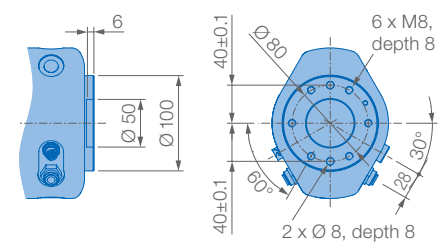


| Robot installation angle $\theta$ [deg.] | S-axis operating range [deg.] |
|--|-------------------------------|
| $0 \leq \theta \leq 30$                  | no limit                      |
| $30 < \theta \leq 35$                    | $\pm 60$ max.                 |
| $35 < \theta \leq 45$                    | $\pm 45$ max.                 |
| $45 < \theta \leq 90$<br>wall mounting   | $\pm 30$ max.                 |

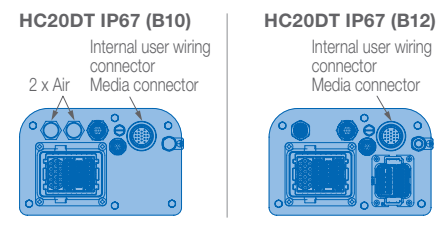
### Allowable wrist load



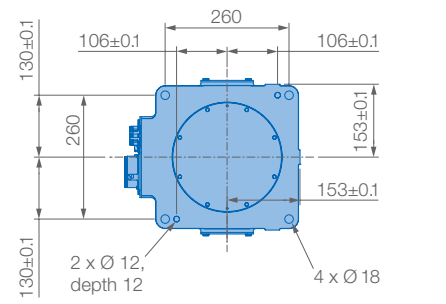
### View A



### View B

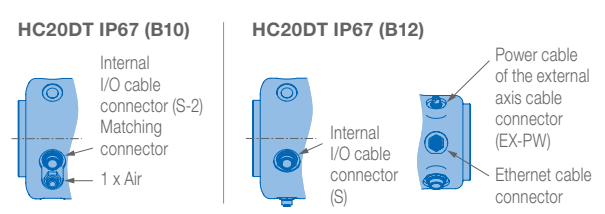


### View C



Mounting options: Floor, ceiling, wall, tilt\*  
 IP Protection: IP67  
 \* tilt with condition of angle – see table left side

### View D



| Specifications HC20DT IP67 (B10 + B12) |                          |                     |                       |  |                             |            |
|--|--------------------------|---------------------|-----------------------|--|-----------------------------|------------|
| Axes                                   | Maximum motion range [°] | Maximum speed [°/s] | Allowable moment [Nm] | Allowable moment of inertia [kg · m <sup>2</sup> ] | Controlled axes             | 6          |
| S                                      | $\pm 180$                | 80                  | –                     | –  | Max. payload [kg]           | 20         |
| L                                      | $\pm 180$                | 80                  | –                     | –  | Repeatability [mm]          | $\pm 0.05$ |
| U                                      | +247/–67                 | 120                 | –                     | –  | Max. working range R [mm]   | 1700       |
| R                                      | $\pm 210$                | 130                 | 58.8                  | 4.0  | Temperature [°C]            | 0 to +40   |
| B                                      | $\pm 180$                | 180                 | 58.8                  | 4.0  | Humidity [%]                | 20 – 80    |
| T                                      | $\pm 210$                | 180                 | 29.4                  | 2.0  | Weight [kg]                 | 140        |
|  |                          |                     |                       |  | Power supply, average [kVA] | 1.5        |

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