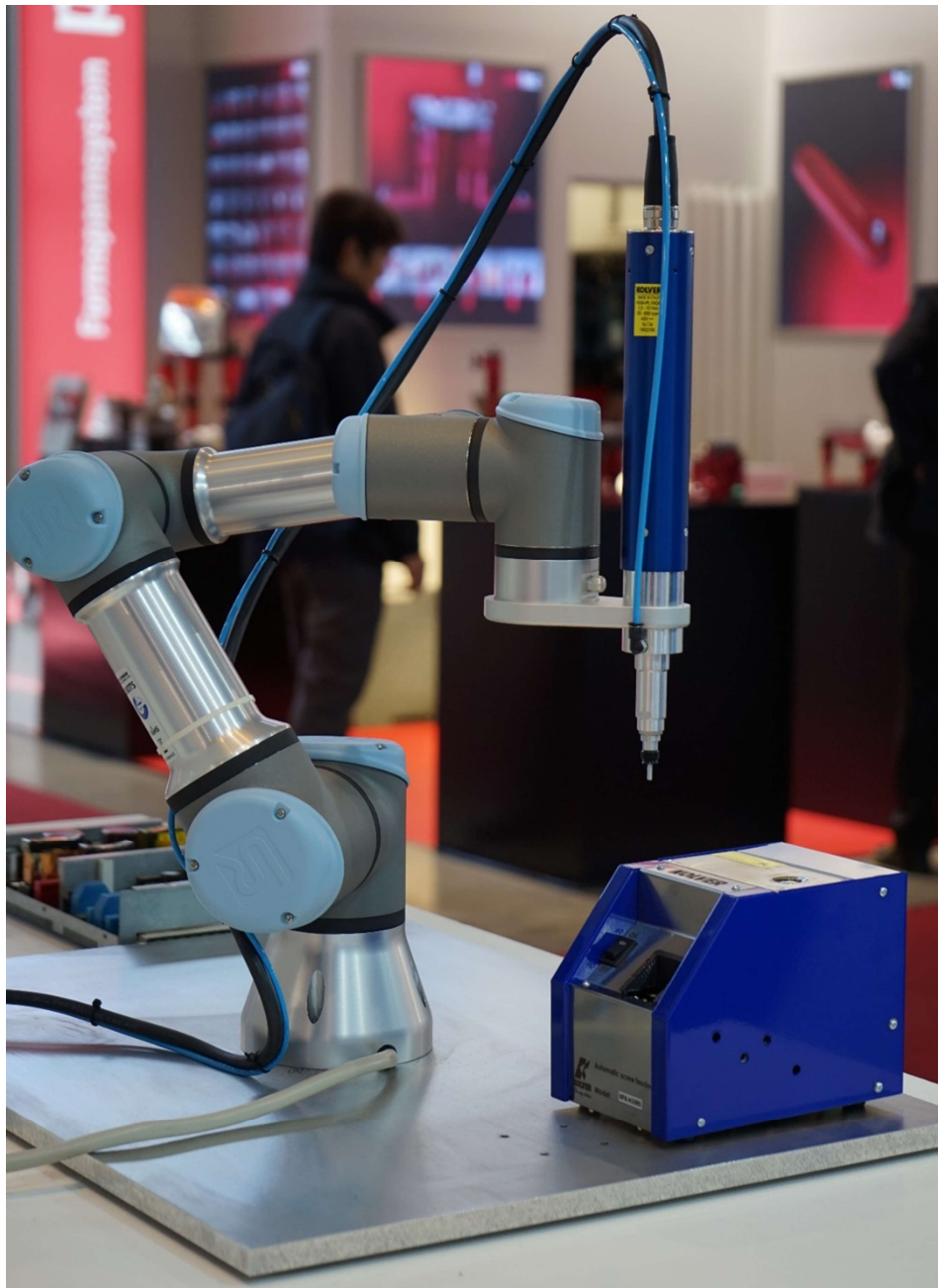
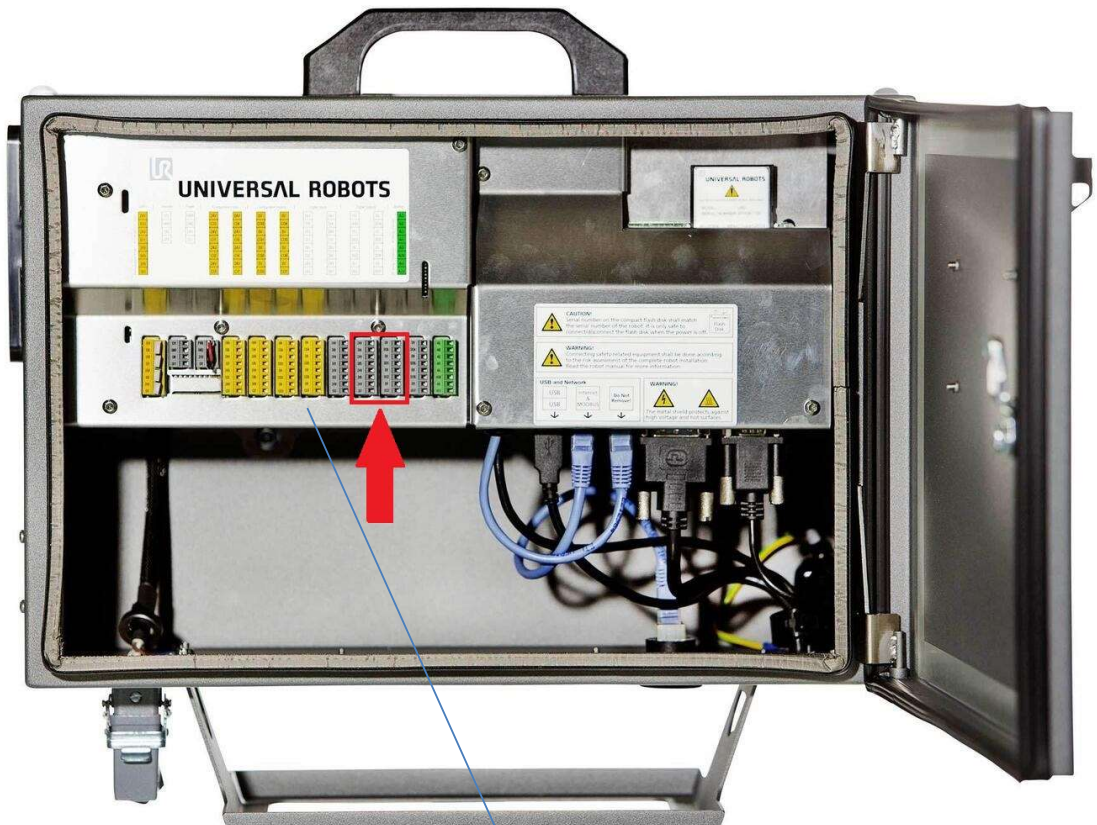




Connections Kolver units with UR Robot



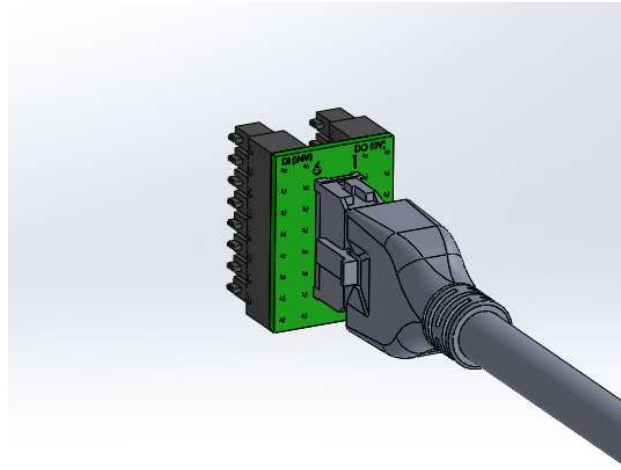
Connection UR robot side



| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|-----|---------------|------|--------------|-----|----------------------------|----|-----|-----|-----------------------------|----|----|-----|-----------------------|----|----|-----|------------------------|----|----|----------------|---------------|-----|----|-----|
| Safety | | Remote | | Power | | Configurable Inputs | | | | Configurable Outputs | | | | Digital Inputs | | | | Digital Outputs | | | | Analog | | | |
| Emergency Stop | 24V | 12V | GND | PWR | 24V | 24V | 0V | 0V | 24V | 24V | 0V | 0V | 24V | 24V | 0V | 0V | 24V | 24V | 0V | 0V | Analog Inputs | AG | A10 | AG | A11 |
| | E10 | 24V | ON | GND | 24V | 24V | 0V | 0V | 24V | 24V | 0V | 0V | 24V | 24V | 0V | 0V | 24V | 24V | 0V | 0V | | AG | A00 | AG | A01 |
| Safeguard Stop | E11 | OFF | 0V | 0V | 24V | 24V | 0V | 0V | 24V | 24V | 0V | 0V | 24V | 24V | 0V | 0V | 24V | 24V | 0V | 0V | Analog Outputs | AG | A10 | AG | A11 |
| | S10 | DI11 | DI10 | DI9 | DI8 | 24V | 0V | 24V | 24V | 24V | 0V | 0V | 24V | 24V | 0V | 0V | 24V | 24V | 0V | 0V | | AG | A00 | AG | A01 |
| | S11 | | | | | | | | | | | | | | | | | | | | | | | | |

CONNECT TO PCB KOLVER 856610

PCB code 856610 + Cable code 872488



Wiring connections between Kolver units and UR Robot

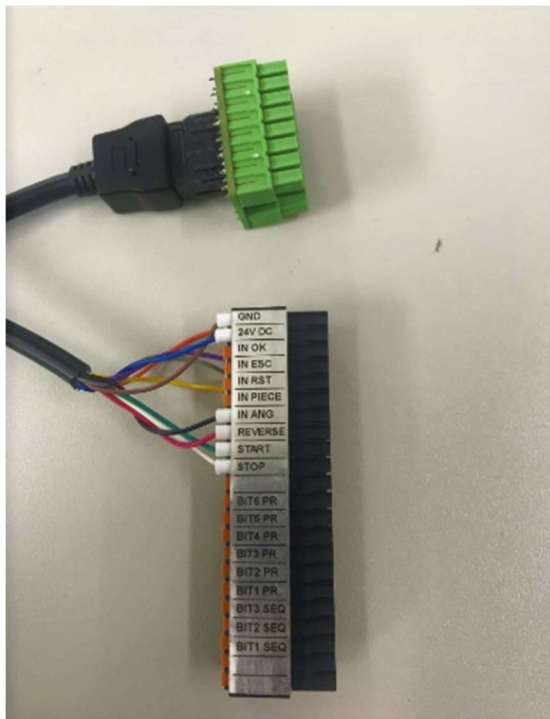
| CN3 K-Ducer pin | CN1 EDU 2AE Series pin | Function | UR Robot Digital inputs/output Sockets | Kolver cable 872488 Wire colour |
|--------------------|------------------------------|-------------|--|---------------------------------------|
| 21 | 1 | 24V | 24V All | Blue |
| 22-44 | 2 | GND | 0V All | Orange |
| 40 | 3 | NOK/ERROR | DI 6 | Yellow |
| 41 | 5 | OK/SCREW OK | DI 4 | Gray |
| 42 | 4 | MOTOR ON | DI 5 | Violet |
| 13 | 7 | STOP MOTOR | DO 2 | White |
| 14 | 9 | START | DO 0 | Green |
| 15 | 8 | REVERSE | DO 1 | Red |
| 16 | 6 | T&A INPUT | DO 3 | Black |

K-DUCER CABLE CONNECTION KIT CODE 020078

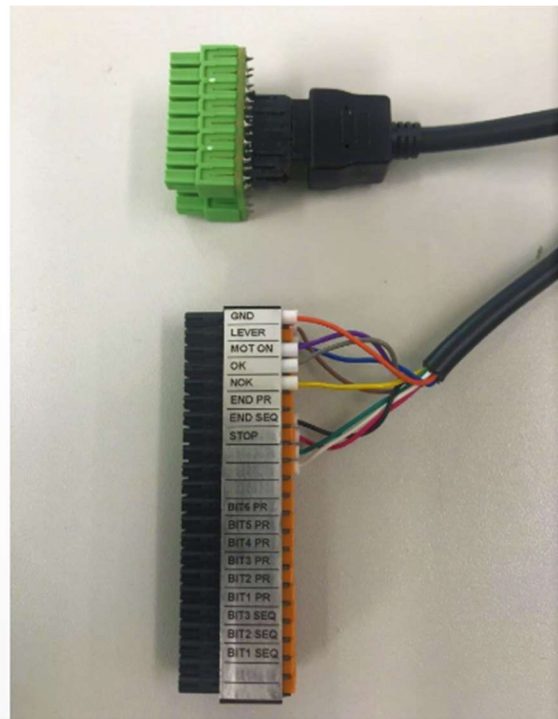
Spare parts

| Code | Part |
|--------|-------------------------------|
| 856610 | PCB UR ROBOT INPUT SIDE |
| 872488 | CABLE CONNECTION UR ROBOT 1MT |
| 872526 | CONNECTOR 44 PIN I/O KDU |

Input view



Output view

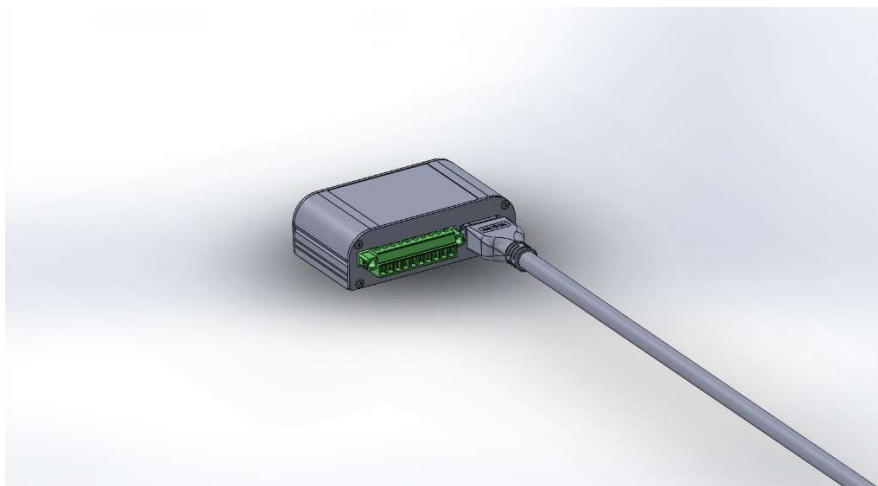


2AE SERIES CABLE CONNECTION KIT CODE 020077

| Code | Part |
|--------|-------------------------------|
| 020076 | INTERFACE 2AE NPN-PNP |
| 856610 | PCB UR ROBOT INPUT SIDE |
| 872488 | CABLE CONNECTION UR ROBOT 1MT |

CONNECTION EDU 2AE SERIES UNITS SIDE CODE 020076

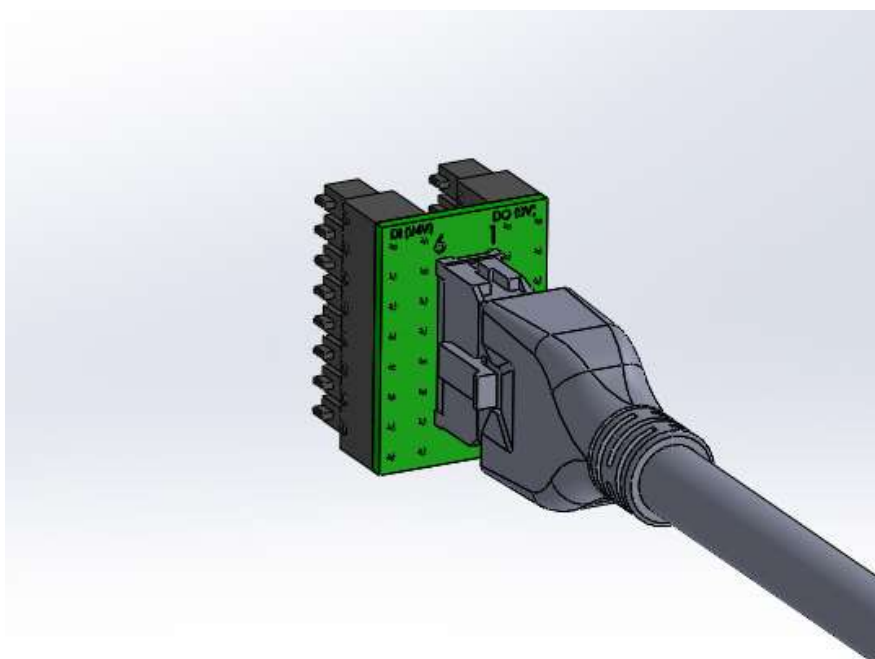
Insert the 10pin male connector into the CN1 connector on the rear panel of the Kolver units



CONNECTION UR ROBOT SIDE

Insert the PCB code 856610 into the digital input/output of the UR connector and connect the cable code 872488

Connect the cable also into the Interface 2AE NPN-PNP code 020076

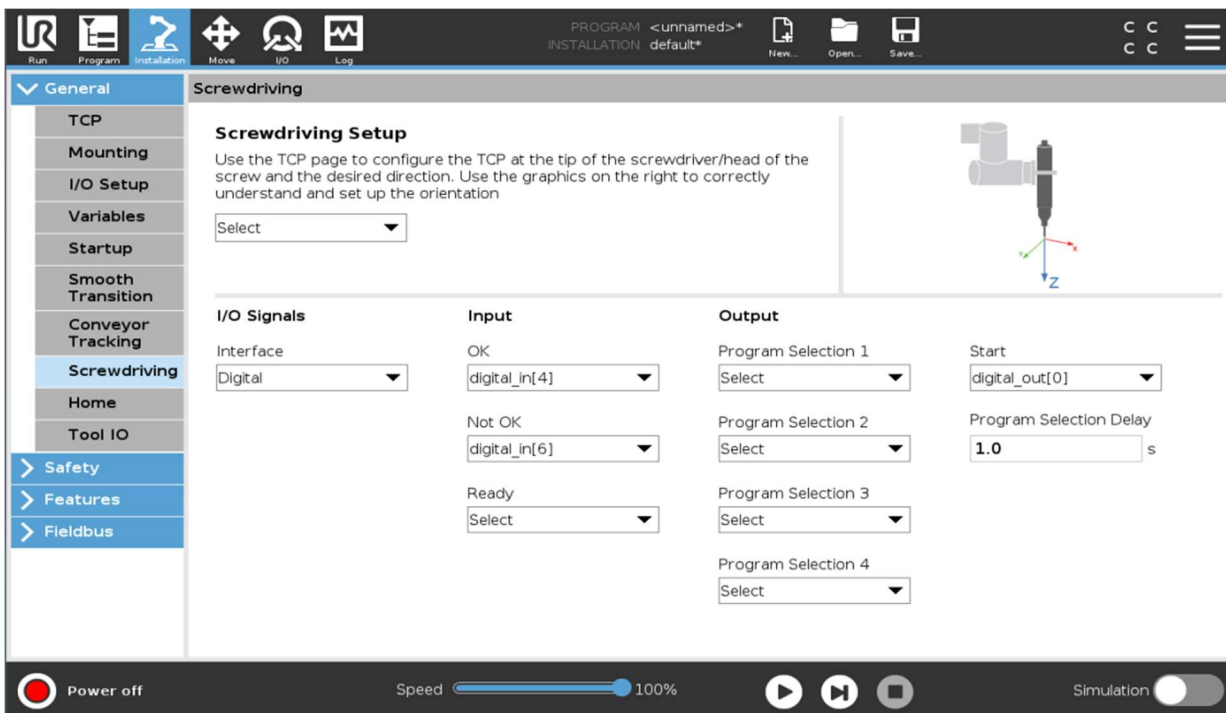


Screwdriving program node configuration

After setting up the “Tool Center Point” appropriately for your screwdriver (following UR manual instructions), navigate to the installation pane and setup the screwdriving program as follows:

- ❖ I/O Signals
 - Interface: Digital
- ❖ Input available
 - OK: digital_in [4]
 - Not OK: digital_in [6]
 - Motor ON: digital in [5]
- ❖ Output available
 - Start: digital_out [0]
 - Reverse: digital_out [1]
 - Stop: digital_out [2]
 - T&A Input: digital_out [2]

Screwdriving installation node



Then, configure a UR program according to your needs.

In the example below, we have a simple screwdriving program with force control and two “Until” conditions, one for “Screw OK” and one for “Error: not OK”.

An experienced UR user will be able to program the robot in this fashion to suit their automation needs.

Screwdriving program node

PROGRAM kducer*
INSTALLATION default

Run Program Installation Move I/O Log

New... Open... Save...

Basic
Advanced
Loop
SubProg
Assignment
If
Script
Event
Thread
Switch
Timer
Screwdriving
Home
Templates

1 Robot Program
2 Screwdriving
3 Until OK
4 'Add actions for screw OK'
5 Error: Not OK
6 'Add actions for screw error'

Command Graphics Variables

Screwdriving

Screwdriver: **User-Defined**

Direction

Tighten
 Loosen

Enable Starting Point
 Enable Machine Error Handler

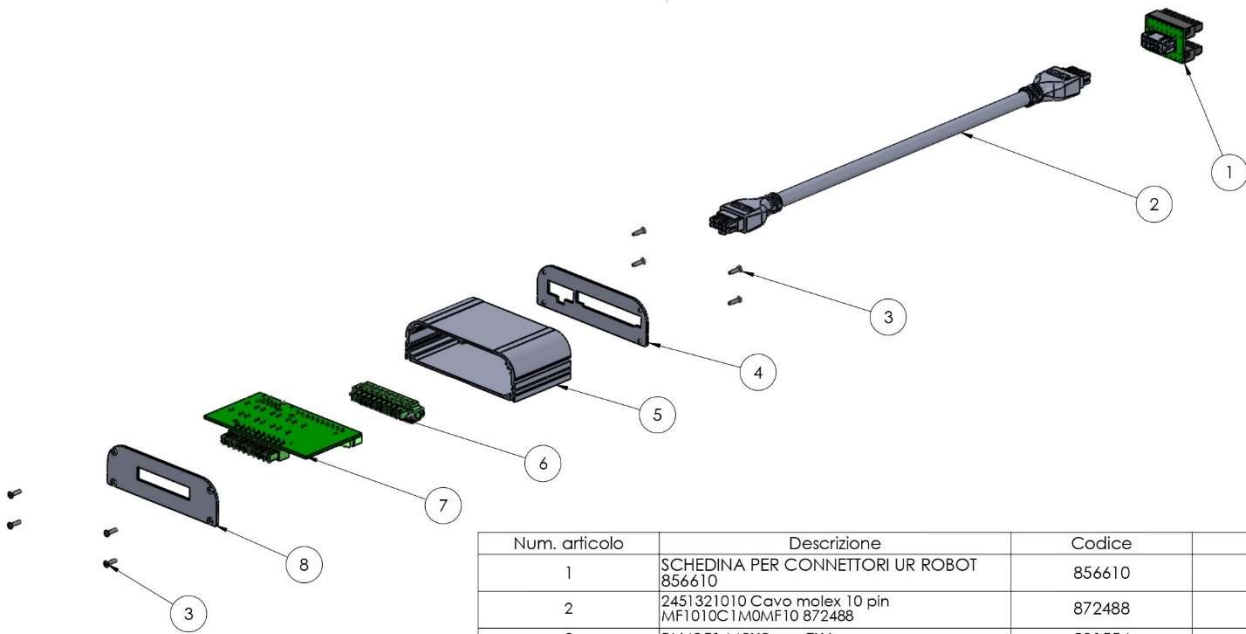
Process

Follow the screw using Force

Force N
Speed limit mm/s

+ Add Until

Power off Speed 100% Simulation



| Num. articolo | Descrizione | Codice | Quantità |
|---------------|---|---------|----------|
| 1 | SCHEDINA PER CONNETTORI UR ROBOT 856610 | 856610 | 1 |
| 2 | 2451321010 Cavo malex 10 pin MF1010C1M0MF10 872488 | 872488 | 1 |
| 3 | BN4851 M2X8mm TX6 | 231554 | 8 |
| 4 | Pannello interfaccia UR robot scheda girata 811728 | 8711728 | 1 |
| 5 | Scatola sdoppiatore Cod 811720 | 811720 | 1 |
| 6 | CONNETTORE PHONIX 10PIN F EDU1AE- EDU1BR 800109 | 800109 | 1 |
| 7 | SCHEDA INTERFACCIA NPN-PNP E UR ROBOT 856609 | 856609 | 1 |
| 8 | Pannello conn 10 pin interfaccia UR robot scheda girata 811727 | 811727 | 1 |