

|                                                                                  |                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>VIA MAESTRI DEL<br/>LAVORO,30<br/>(ZONA INDUSTRIALE)<br/>56021 CASCINA (PI)<br/>ITALY</p> <p>CAPITALE SOCIALE<br/>100.000,00 €</p> <p>C.F. E P.I. 01252870504</p> | <p> +39 050 711131</p> <p> +39 050 711472</p> <p> <a href="mailto:isacsrl@isacsrl.it">isacsrl@isacsrl.it</a></p> <p> <a href="http://www.isacsrl.it/">http://www.isacsrl.it/</a></p> |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# SWCNCCOST1 and SWCNCCOST2

## Costantino CNC

### Reduced Data sheet

Version: 1

Date: 19.01.2026

|                                                                                  |                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>VIA MAESTRI DEL<br/>LAVORO,30<br/>(ZONA INDUSTRIALE)<br/>56021 CASCINA (PI)<br/>ITALY</p> <p>CAPITALE SOCIALE<br/>100.000,00 €</p> <p>C.F. E P.I. 01252870504</p> | <p> +39 050 711131</p> <p> +39 050 711472</p> <p> <a href="mailto:isacsrl@isacsrl.it">isacsrl@isacsrl.it</a></p> <p> <a href="http://www.isacsrl.it/">http://www.isacsrl.it/</a></p> |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Overview



Costantino SoftCNC is the ISAC SoftCNC to be used as SoftPLC, Motion Controller, CNC and Robot Controller. The same kernel fits many different automation control applications.

Features to be used in applications can be activated by options as described in the Catalogue.

Costantino can use third-party Industrial PC or use ISAC Central Units.

Customers that purchase ISAC Central Units have already a license of Costantino included in the hardware purchase.

|                                                                                  |                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | VIA MAESTRI DEL<br>LAVORO,30<br>(ZONA INDUSTRIALE)<br>56021 CASCINA (PI)<br>ITALY<br><br>CAPITALE SOCIALE<br>100.000,00 €<br><br>C.F. E P.I. 01252870504 |  +39 050 711131<br><br> +39 050 711472<br><br> <a href="mailto:isacsrl@isacsrl.it">isacsrl@isacsrl.it</a><br><br> <a href="http://www.isacsrl.it/">http://www.isacsrl.it/</a> |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Part Number

### Codes

| Code       | Description                                                         |
|------------|---------------------------------------------------------------------|
| SWCNCCOST1 | SoftCNC for cartesian kinematics.                                   |
| SWCNCCOST2 | SoftCNC for cartesian and non-cartesian kinematics, motion control. |

### Alternative codes

Consider to use that is a more recent SWCNCCOST6.

### Product status

#### SWCNCCOST1

|                          |                  |
|--------------------------|------------------|
| Item                     | Value            |
| Status                   | Spare parts only |
| In production since:     | Jan 2012         |
| Phasing out phase ended: | Jan 2025         |

#### SWCNCCOST2

|                      |                                                 |
|----------------------|-------------------------------------------------|
| Item                 | Value                                           |
| Status               | Phasing out                                     |
| In production since: | Jan 2016                                        |
| Phasing out timing:  | Started June 2025, finished not before Jan 2028 |

|                                                                                  |                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>VIA MAESTRI DEL<br/>LAVORO,30<br/>(ZONA INDUSTRIALE)<br/>56021 CASCINA (PI)<br/>ITALY</p> <p>CAPITALE SOCIALE<br/>100.000,00 €</p> <p>C.F. E P.I. 01252870504</p> | <p> +39 050 711131</p> <p> +39 050 711472</p> <p> <a href="mailto:isacsrl@isacsrl.it">isacsrl@isacsrl.it</a></p> <p> <a href="http://www.isacsrl.it/">http://www.isacsrl.it/</a></p> |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Requirements

### Hardware

- Processors compatible with with Intel 6<sup>th</sup> generation and above. In particular, tests covered those processors:
  - i3, i5, i7 7th generation
  - i5 10<sup>th</sup> generation
  - Intel J1900
- At least 4GB RAM. Recommended 8GB RAM divided in 2 banks
- Solid State Drive with at least 400MB free
- At least 2 Ethernet ports connected in PCI or PCI express bus. Highly recommended to use Intel I210 Network Controller

Refer to TDU004 for a list of tested compatible hardware.

### OS

Windows 10 IoT, 64 bit version

|                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>VIA MAESTRI DEL LAVORO,30<br/>(ZONA INDUSTRIALE)<br/>56021 CASCINA (PI)<br/>ITALY</p> <p>CAPITALE SOCIALE<br/>100.000,00 €</p> <p>C.F. E P.I. 01252870504</p> | <p> +39 050 711131</p> <p> +39 050 711472</p> <p> <a href="mailto:isacsrl@isacsrl.it">isacsrl@isacsrl.it</a></p> <p> <a href="http://www.isacsrl.it/">http://www.isacsrl.it/</a></p> |
|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Technical data summary

|                                           |                                                                                                                |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Features                                  | CNC Costantino                                                                                                 |
| No of axes per channel                    | 128                                                                                                            |
| Gantry                                    | Yes                                                                                                            |
| Management Independent axis               | Yes                                                                                                            |
| Management Tangent Axis                   | Yes                                                                                                            |
| Management Virtual Axis                   | Yes                                                                                                            |
| Management continuos unidirectional Axes  | Yes                                                                                                            |
| Management Rollover Axes                  | Yes                                                                                                            |
| Number of Channels                        | Up to 8                                                                                                        |
| Management of axes sharing among channels | Yes                                                                                                            |
| Servo drive hardware Interface Supported  | EtherCAT, Mechatrolink I & II, CANopen, Pulse / Direction , Analogic                                           |
| N° I/O                                    | Up to 32.000                                                                                                   |
| PLC Programming                           | Language IEC 61131-3, Ansi C                                                                                   |
| CNC Programming                           | ISO + Parametric                                                                                               |
| Part Program max size                     | 2 Gbyte                                                                                                        |
| HMI Programmable                          | Yes                                                                                                            |
| PLC / HMI SDK                             | Phoenix Contact Multiprog, Integrated part-program editor, advanced programming aid in SIMON. using OPPCSIMU05 |

|                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>VIA MAESTRI DEL LAVORO,30<br/>(ZONA INDUSTRIALE)<br/>56021 CASCINA (PI)<br/>ITALY</p> <p>CAPITALE SOCIALE<br/>100.000,00 €</p> <p>C.F. E P.I. 01252870504</p> | <p> +39 050 711131</p> <p> +39 050 711472</p> <p> <a href="mailto:isacsrl@isacsrl.it">isacsrl@isacsrl.it</a></p> <p> <a href="http://www.isacsrl.it/">http://www.isacsrl.it/</a></p> |
|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                      |                                                                                                                                               |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Features                             | CNC Costantino                                                                                                                                |
| DXF Converter                        | Yes                                                                                                                                           |
| Number Origin                        | 20 + 4 offset                                                                                                                                 |
| PCS to MCS trasformation             | Roto-traslation, strech matrixes.<br>Mirroring in any axis direction.                                                                         |
| Work interruption and Resume         | From saved stack, from any Auxiliary Function issued.<br>Disambiguation of line using graphical tools.<br>Path retrace                        |
| Min Interpolation time               | 500 $\mu$ s                                                                                                                                   |
| Look Ahead (movement blocks)         | Up to 1024                                                                                                                                    |
| Throughput 3 axes                    | 20k blocks/secondo                                                                                                                            |
| Cycle Time PLC                       | $\geq 1$ ms                                                                                                                                   |
| Tool Management                      | 150 Tools<br>(multi Cutting , family, wear , life , geometry)<br>Radius and Length Compensation (fixed, statistical wearing during machining) |
| Features for Lathe and Mill machines | Yes, same product can do both                                                                                                                 |
| Jerk Control                         | For each Axis and in trajectory                                                                                                               |
| Velocity Feed Forward                | Yes                                                                                                                                           |
| Torque Feed Forward                  | Yes                                                                                                                                           |
| Anti-mechanics resonance Filters     | Yes                                                                                                                                           |

|                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>VIA MAESTRI DEL LAVORO,30<br/>(ZONA INDUSTRIALE)<br/>56021 CASCINA (PI)<br/>ITALY</p> <p>CAPITALE SOCIALE<br/>100.000,00 €</p> <p>C.F. E P.I. 01252870504</p> | <p> +39 050 711131</p> <p> +39 050 711472</p> <p> <a href="mailto:isacsrl@isacsrl.it">isacsrl@isacsrl.it</a></p> <p> <a href="http://www.isacsrl.it/">http://www.isacsrl.it/</a></p> |
|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                               |                                                                              |
|-----------------------------------------------|------------------------------------------------------------------------------|
| Features                                      | CNC Costantino                                                               |
| Super finishing                               | Yes                                                                          |
| RTCP                                          | Rotative/ Birotative Head /Tilting and Rotating Table                        |
| Supported Robotic Kinematic                   | Scara/Delta/ Puma                                                            |
| Interpolator Type                             | Linear, circular, helicoidal, NURBS, Spline                                  |
| Collision Control                             | Yes                                                                          |
| Digital Twin                                  | Yes (requires SIMON)                                                         |
| High Speed Machining                          | Yes                                                                          |
| Rototraslation 3D                             | Yes                                                                          |
| Motion Control                                | Yes – PLCOPEN – MC - Part 1                                                  |
| Volumetric Compensation                       | Yes                                                                          |
| PLC multi-task real time                      | Yes                                                                          |
| Package CNC + servo driver + Inverter + Cable | Yes                                                                          |
| Advanced Diagnostic Tools                     | Yes                                                                          |
| Remote Assistance                             | Yes                                                                          |
| Integrate Functional Safety                   | FSOE                                                                         |
| IIOT                                          | OPC UA server                                                                |
| PC-Based                                      | Yes                                                                          |
| Pc Compatibility                              | Yes, UEFI or Legacy BIOS.<br>≥2 cores required<br>≥2 Ethernet ports required |
| Operating System                              | Windows 10 IoT + RTOS                                                        |



VIA MAESTRI DEL  
LAVORO,30  
(ZONA INDUSTRIALE)  
56021 CASCINA (PI)  
ITALY

CAPITALE SOCIALE  
100.000,00 €

C.F. E P.I. 01252870504

 +39 050 711131

 +39 050 711472

 [isacsrl@isacsrl.it](mailto:isacsrl@isacsrl.it)

 <http://www.isacsrl.it/>

|                                                                                  |                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>VIA MAESTRI DEL<br/>LAVORO,30<br/>(ZONA INDUSTRIALE)<br/>56021 CASCINA (PI)<br/>ITALY</p> <p>CAPITALE SOCIALE<br/>100.000,00 €</p> <p>C.F. E P.I. 01252870504</p> | <p> +39 050 711131</p> <p> +39 050 711472</p> <p> <a href="mailto:isacsrl@isacsrl.it">isacsrl@isacsrl.it</a></p> <p> <a href="http://www.isacsrl.it/">http://www.isacsrl.it/</a></p> |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Reference documents

### Use manuals

usertplcen\_15.pdf

SPARTACUseEN73.pdf

TDU004\_PCs for Costantino Software