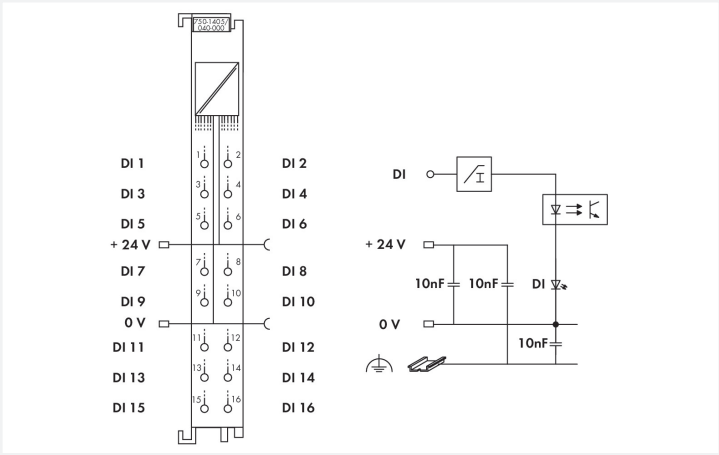
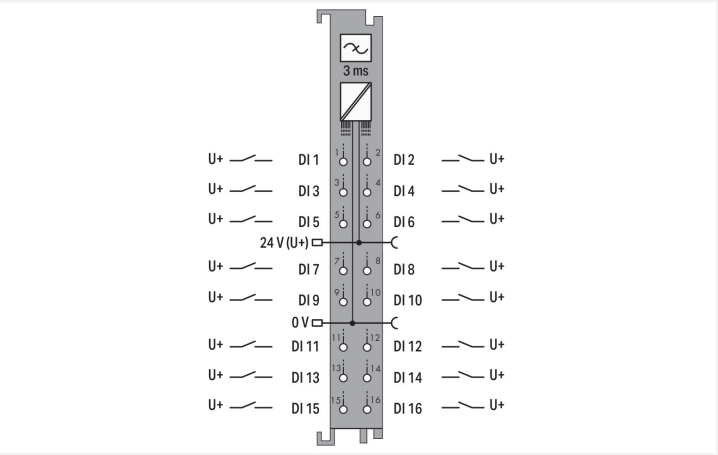
# Data Sheet | Item Number: 750-1405/040-000

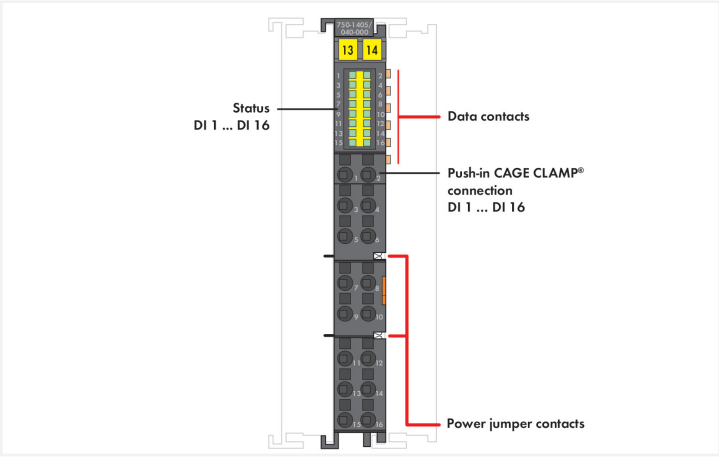
16-channel digital input; 24 VDC; 3 ms; Extreme

https://www.wago.com/750-1405/040-000

Color: ■ dark gray




This digital input module features 16 channels in a width of just 12 mm (0.47 inch).
It receives binary control signals from digital field devices (e.g., sensors, encoders, switches or proximity sensors).
The module features Push-in CAGE CLAMP® connections enabling solid conductors to be connected by simply pushing them in.
Each input channel has a noise-rejection RC filter with 3.0 ms time constant.
A green LED indicates the signal state of each channel.
Field and system levels are electrically isolated.
An operating tool with a 2.5 mm blade (210-719) is required to open the Push-in CAGE CLAMP® connections.

**The device is ideal for operation in extreme environments thanks to:**

- An extended temperature range
- Greater immunity to impulse voltages and electromagnetic interference
- Higher vibration and shock resistance



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## Technical data

| | |
|---|---|
| Number of digital inputs | 16 |
| Total number of channels (module) | 16 |
| Signal type | Digital |
| Signal type (voltage) | 24 VDC |
| Sensor connection | 16 x (1-wire) |
| Input characteristic | high-side switching<br>Type 1 |
| Input filter (digital) | 3 ms |
| Input current per channel for signal (0) typ. | 0.6 mA |
| Input current per channel for signal (1) typ. | 2.3 mA |
| Input current per channel for signal (1) min. | 2.1 mA |
| Input current per channel for signal (1) max. | 2.4 mA |
| Voltage range for signal (0) | −3 … +5 VDC |
| Voltage range for signal (1) | 15 … 30 VDC |
| Delay time T_on from 0 to 1 | 300 µs |
| Delay time T_off from 1 to 0 | 400 µs |
| Input data width (internal) max. | 16 bits |
| Supply voltage (system) | 5 VDC; via data contacts |
| Current consumption (5 V system supply) | 25 mA |
| Supply voltage (field) | 24 VDC (-25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Derating must be observed! |
| Dielectric strength | 510 VAC / 775 VDC; per EN 60870-2-1 |
| Indicators | LED (1-16) green: Status DI 1 … DI 16 |
| Number of incoming power jumper contacts | 2 |
| Number of outgoing power jumper contacts | 2 |
| Current carrying capacity (power jumper contacts) | 10 A |
| Rated impulse withstand voltage | 1 kV |
| Derating | Derating (supply voltage):<br>Ambient temperatures under laboratory conditions: (-25 … +30 %);<br>for -40 … +55 °C: 24 V (-25 … +20 %);<br>for +55 … +70 °C: 24 V (-25 … +10 %);<br>Lower limit in all temperature ranges: -27.5 % (including 15 % residual ripple) |

## Connection data

| | |
|---|---|
| Connection technology: inputs/outputs | 16 x Push-in CAGE CLAMP® (inputs) |
| Connectable conductor materials | Copper |
| Connection type 1 | Input |
| Solid conductor | 0.25 … 1.5 mm² / 24 … 16 AWG |
| Fine-stranded conductor | 0.25 … 1.5 mm² / 24 … 16 AWG |
| Strip length | 8 … 9 mm / 0.31 … 0.35 inches |

## Physical data

| | |
|---|---|
| Width | 12 mm / 0.472 inches |
| Height | 100 mm / 3.937 inches |
| Depth | 69 mm / 2.717 inches |
| Depth from upper-edge of DIN-rail | 61.8 mm / 2.433 inches |


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## Mechanical data

| | |
|---|---|
| Mounting type | DIN-35 rail |

## Material data

| | |
|---|---|
| Color | dark gray |
| Housing material | Polycarbonate; polyamide 6.6 |
| Fire load | 0.835 MJ |
| Weight | 46.5 g |
| Conformity marking | CE |

## Environmental requirements

| | |
|---|---|
| Ambient temperature (operation) | -40 … +70 °C |
| Ambient temperature (storage) | -40 … +85 °C |
| Protection type | IP20 |
| Pollution degree | 2 per IEC 61131-2 |
| Operating altitude | without temperature derating: 0 … 2000 m; with temperature derating: 2000 … 5000 m (0.5 K/100 m); 5000 m (max.) |
| Mounting position | Horizontal left, horizontal up, vertical top and vertical bottom |
| Relative humidity (without condensation) | 95 % |
| Relative humidity (with condensation) | Short-term condensation per Class 3K7/IEC EN 60721-3-3 and E-DIN 40046-721-3 (except for wind-driven precipitation, water and ice formation) |
| Vibration resistance | per IEC 60068-2-6 (acceleration: 5g), EN 60870-2-2, IEC 60721-3-1, -3, EN 50155; EN 61373 |
| Shock resistance | per IEC 60068-2-27 (15g/11 ms/half-sine/1,000 shocks; 25g/6 ms/1,000 shocks), EN 50155, EN 61373 |
| EMC immunity to interference | per EN 61000-6-1, -2; EN 61131-2; marine applications; EN 50121-3-2; EN 50121-4, -5; EN 60255-26;<br>EN 60870-2-1; EN 61850-3; IEC 61000-6-5; IEEE 1613; VDEW: 1994 |
| EMC emission of interference | per EN 61000-6-3, -4, EN 61131-2, EN 60255-26, marine applications, EN 60870-2-1, EN 61850-3, EN 50121-3-2, EN 50121-4, -5 |
| Exposure to pollutants | per IEC 60068-2-42 and IEC 60068-2-43 |
| Permissible $H_2S$ contaminant concentration at a relative humidity 75 % | 10 ppm |
| Permissible $SO_2$ contaminant concentration at a relative humidity 75 % | 25 ppm |

## Commercial data

| | |
|---|---|
| Product Group | 15 (I/O System) |
| PU (SPU) | 1 pcs |
| Packaging type | Box |
| Country of origin | DE |
| GTIN | 4050821460206 |
| Customs tariff number | 85389099990 |

## Product classification

| | |
|---|---|
| UNSPSC | 32151705 |


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## Environmental Product Compliance

| | |
|---|---|
| CAS-No. | 1303-86-2<br>1317-36-8<br>7439-92-1 |
| REACH Candidate List Substance | Diboron trioxide<br>Lead<br>Lead monoxide<br>Perfluorobutane sulfonic acid (PFBS) and its salts |
| RoHS Compliance Status | Compliant,With Exemption |
| RoHS Exemption | 7(c)-I |
| SCIP notification number (Bulgaria) | ba6e58a2-b424-4c71-b3ea-b127ee8646f6 |
| SCIP notification number (Czech Republic) | 3da071de-5e04-4fe3-82e3-8bd40b50aa5c |

## Approvals / Certificates

### General approvals

| Approval | Standard | Certificate Name |
|---|---|---|
| EAC<br>GZO Almaty Standart | TP TC 020/2011 | EAC CoC 03083 |
| KC<br>National Radio Research Agency | Article 58-2, Clause 3 | MSIP-REM-W43-DIM750 |
| UL<br>Underwriters Laboratories Inc. (ORDINARY LOCATIONS) | UL 508 | E175199 |

### Declarations of conformity and manufacturer's declarations

| Approval | Standard | Certificate Name |
|---|---|---|
| EU-Declaration of Conformity<br>WAGO GmbH & Co. KG | - | - |
| UK-Declaration of Conformity<br>WAGO GmbH & Co. KG | - | - |

### Approvals for marine applications

| Approval | Standard | Certificate Name |
|---|---|---|
| ABS<br>American Bureau of Shipping | - | 22-2208829-PDA |
| DNV<br>DNV GL SE | - | TAA00000Y7 |
| LR<br>Lloyds Register | - | LR22276776TA |
| PRS<br>Polski Rejestr Statków | - | TE/1099/880590/23 |

### Approvals for hazardous areas

| Approval | Standard | Certificate Name |
|---|---|---|
| ATEX<br>TUEV Nord Cert GmbH | EN 60079-0 | TUEV 17 ATEX 193969X (II 3 G Ex ec IIC T4 Gc) |
| CCC<br>CNEX | CNCA-C23-01 | 2020312310000214 (Ex ec IIC T4 Gc) |
| IECEx<br>TUEV Nord Cert GmbH | IEC 60079-0 | IECEx TUN 16.0046X (Ex ec IIC T4 Gc) |
| UKEx<br>WAGO GmbH & Co. KG | EN 60079-0 | UKCA_WAGO22UKEX005X_ec |
| UL<br>Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS) | UL 121201 | E198726 |


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## Downloads

### Environmental Product Compliance

**Compliance Search**

| | |
|---|---|
| Environmental Product Compliance 750-1405/040-000 | |

### Documentation

**Manual**

| | | | |
|---|---|---|---|
| Product Manual 16DI 24 V DC 3. ms /XTR | V 1.3.0 19.08.2019 | pdf 2685.21 KB | |

**System Description**

| | | |
|---|---|---|
| Overview on WAGO-I/O-SYSTEM 750 approvals | pdf 770.48 KB | |
| 750 XTR Series I/O-System – General Product Information | pdf 726.09 KB | |

**Bid Text**

| | | | |
|---|---|---|---|
| 750-1405/040-000 | 19.02.2019 | xml 6.97 KB | |
| 750-1405/040-000 | 28.10.2015 | doc 34.50 KB | |

**Instruction Leaflet**

| | | | |
|---|---|---|---|
| CCC Ex (Additional information) | 26.04.2023 | pdf 144.58 KB | |

### CAD/CAE-Data

**CAD data**

| |
|---|
| 2D/3D Models 750-1405/040-000 |

**CAE data**

| |
|---|
| EPLAN Data Portal 750-1405/040-000 |
| WSCAD Universe 750-1405/040-000 |
| ZUKEN Portal 750-1405/040-000 |

## 1 Compatible Products

### 1.1 Optional Accessories

#### 1.1.1 DIN-rail

##### 1.1.1.1 Mounting accessories

Item No.: 210-196
Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored

Item No.: 210-198
Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; copper-colored

Item No.: 210-508
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; galvanized; similar to EN 60715; silver-colored

Item No.: 210-197
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715; silver-colored

Item No.: 210-506
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; similar to EN 60715; silver-colored

Item No.: 210-114
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored

Item No.: 210-118
Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored

Item No.: 210-115
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 18 mm; silver-colored


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### 1.1.1.1 Mounting accessories

Item No.: 210-112
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 25 mm; silver-colored

Item No.: 210-504
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715; silver-colored

Item No.: 210-113
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored

Item No.: 210-505
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; according to EN 60715; silver-colored

## 1.1.2 Marking

### 1.1.2.1 Group marker carrier

Item No.: 750-107
Group marker carrier

### 1.1.2.2 Marker

Item No.: 2009-145/000-006
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; blue

Item No.: 2009-145/000-007
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; gray

Item No.: 2009-145/000-023
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; green

Item No.: 2009-145/000-012
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; orange

Item No.: 2009-145/000-005
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; red

Item No.: 2009-145/000-024
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; violet

Item No.: 2009-145
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white

Item No.: 2009-145/000-002
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; yellow

Item No.: 248-501/000-006
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; blue

Item No.: 248-501/000-007
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; gray

Item No.: 248-501/000-023
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; green

Item No.: 248-501/000-017
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; light green

Item No.: 248-501/000-012
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; orange

Item No.: 248-501/000-005
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; red

Item No.: 248-501/000-024
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; violet

Item No.: 248-501
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; white

Item No.: 248-501/000-002
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; yellow

### 1.1.2.3 Marker carrier

Item No.: 750-103
Group marker carrier


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## 1.1.3 Shield termination

### 1.1.3.1 Shield clamping saddles

Item No.: 790-108
Shield clamping saddle; 11 mm wide; diameter of compatible conductor; 3 … 8 mm

Item No.: 790-208
Shield clamping saddle; 12.4 mm wide; 3 … 8 mm

Item No.: 790-116
Shield clamping saddle; 19 mm wide; diameter of compatible conductor; 7 … 16 mm

Item No.: 790-216
Shield clamping saddle; 21.8 mm wide; 6 … 16 mm

Item No.: 790-124
Shield clamping saddle; 27 mm wide; diameter of compatible conductor; 6 … 24 mm

Item No.: 790-220
Shield clamping saddle; 30 mm wide; 6 … 20 mm

Item No.: 790-140
Shield clamping saddle; diameter of compatible conductor

## 1.1.4 Supply module

### 1.1.4.1 Supply module

Item No.: 750-612/040-000
Power Supply; 0 … 230 V AC/DC; Extreme

Item No.: 750-602/040-000
Power Supply; 24 VDC; Extreme

## 1.1.5 System enclosure

### 1.1.5.1 System enclosure

Item No.: 850-825
IP65 enclosure; Aluminium (RAL 7032); WxHxD (160x100x160 mm); 9 x M12, 4 x M20

Item No.: 850-826
IP65 enclosure; Aluminium (RAL 7032); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip

Item No.: 850-827
IP65 enclosure; Aluminium (RAL 7032); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip

Item No.: 850-828
IP65 enclosure; Aluminium (RAL 7032); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip

Item No.: 850-826/002-000
IP65 enclosure; Aluminium (RAL 7035); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip

Item No.: 850-827/002-000
IP65 enclosure; Aluminium (RAL 7035); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip

Item No.: 850-828/002-000
IP65 enclosure; Aluminium (RAL 7035); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip

Item No.: 850-834
IP65 enclosure; Polyester (RAL 7032); WxHxD (164x100x164 mm); 9 x M12, 4 x M20

Item No.: 850-835
IP65 enclosure; Polyester (RAL 7032); WxHxD (244x100x164 mm); 4 x M20, 4 x M16, 14 x M12 cable grip

Item No.: 850-836
IP65 enclosure; Polyester (RAL 7032); WxHxD (324x100x164 mm); 4 x M20, 8 x M16, 17 x M12 cable grip

Item No.: 850-814/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (200x120x200 mm); without flange plate

Item No.: 850-815/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (300x120x200 mm); without flange plate

Item No.: 850-816/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (400x120x200 mm); without flange plate

Item No.: 850-817/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (600x120x200 mm); without flange plate


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## 1.1.6 Tool

### 1.1.6.1 Operating tool

Item No.: 210-719
Operating tool; Blade: 2.5 x 0.4 mm; with a partially insulated shaft


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