MindConnect IoT2050
Product Sheet

MindConnect IoT2050 is a device for transferring data and allows connectivity to MindSphere. Different protocols are supported to collect data. The device supports transmission of data through a secure internet connection to MindSphere to enable cloud-based applications and services. MindConnect IoT2050 can only be used in conjunction with MindSphere.

Prerequisites	
Subscription	A valid MindSphere Capability Package (Basic/Standard/Premium) subscription is required.

Functions	
Field protocol – S7	Siemens S7 Put/Get Access (for all S7 PLCs as non-symbolic addressing).
Field protocol – OPC UA	OPC UA Client (Data Access).
Field protocol – Modbus	Connections to Modbus devices via TCP/RTU.
Field protocol – EtherNet/IP	Connections to EtherNet/IP devices.
Advanced driver extension	Support more protocols as an add-on.
System adapter	Read device specific parameter like memory consumption.
Arduino shield	Arduino connector to IO Module 5x DI 2x AI 2x DI.
Configuration of data collection	With Asset Configuration tool in MindSphere.
Data buffering	Up to 500 MB buffering space for collected data.
Local webserver	Support at local diagnose and easy onboarding.
Proxy Support	Yes
DHCP Support	Yes
Security	Connection outbound via HTTPS on port 443 to MindSphere only. No incoming connection accepted. SSL/TLS encryption of data in transit to MindSphere.

Installation Type/Mounting	
Mounting	DIN rail, wall mounting, portrait mounting.
Design	IoT Gateway, Built-in unit.

Supply Voltage

Type of supply voltage	12..24 V DC
Current consumption	Max. 1.7 A
Mains buffering	
Mains/voltage failure stored energy time	5 ms

Processor

Processor type	TI ARM SoC, 64 Bit, 4 cores

Mass storage

eMMc	16 GB

Memory

Type of memory	DDR4 RAM
Main memory	2 GB

Hardware Configuration

Slots	
Free slots	1x Arduino (available only on conjunction with MindSphere). 1x mPCIe (available only in conjunction with MindSphere).

Interfaces

USB port	2x USB 2.0
Serial interface	1x COM ports (RS 232, RS 485, RS 422) (available only in conjunction with MindSphere).
Industrial Ethernet	
Industrial Ethernet interface	2x GB Ethernet RJ45 with TSN.

Monitoring Functions

Watchdog	Yes
Status LEDs	Yes
Fan	No

Electromagnetic Compatibility

Immunity regarding conducted interference on the supply lines	± 2 kV according to IEC 61000-4-4; burst ± 1 kV according to IEC 61000-4-5; asymmetrical surge
Noise immunity on signal lines	± 1 kV according to IEC 61000-4-4; burst; length < 30 m ± 2 kV according to IEC 61000-4-4; burst; length > 30 m ± 2 kV according to IEC 61000-4-5; surge; length > 30 m
Immunity to discharges of static electricity	± 4 kV contact discharge in accordance with IEC 61000-4-2 ± 8 kV air discharge in accordance with IEC 61000-4-2
Immunity to RF interference	10 V/m, 80 MHz to 1 GHz, 80% AM in accordance with IEC 61000-4-3

	3 V/m, 1.4 to 6 GHz, 80% AM in accordance with IEC 61000-4-3 10 V, 150 KHz to 80 MHz, 80% AM in accordance with IEC 61000-4-6.
General	If there are voltage peaks on power supply lines, use a protective device in the form of a varistor (MOV) UMOV = U-rated x 1.2 (BLITZDUCTOR BVT AVD 24 (918 422) or compatible).

Degree and Class of Protection

IP (at the front)	IP20 according to IEC 60529.

Standards, Approvals, Certificates

CE mark	CE markings for European countries.
cULus	Test mark of the Underwriters Laboratories for USA and Canada.
KC approval	Approved for Korea.
RCM	Approved for New Zealand and Australia.
CCC	Approved for China.
China RoHs	EFUP (Environment Friendly Use Period) marking for China.
BIS	Approved for India.
EAC	Marking for the Eurasian Customs Union.
FM	Test mark of Factory Mutual Research.
FCC	Marking of Federal Communications Commission for the USA.
EMC	This product meets the requirements of EU Directive 2014/30/EU "Electromagnetic Compatibility".

Climatic Ambient Conditions[1]

Ambient temperature	
Ambient temperature during operation	Rail mounting Vertical: 0 to 50 °C Horizontal: 0 to 40 °C Wall mounting Vertical: 0 to 45 °C Horizontal: 0 to 40 °C
Storage / transport	-20 to 70 °C
Gradient	
Operation	Max. 10 °C/h
Storage	20 °C/h, no condensation
Relative humidity	
Standard	Tested in accordance with IEC 60068-2-78, IEC 60068-2-30 tested in accordance with IEC 60068-2-78, IEC 60068-2-30.
Operation	5 to 85% at 30°C, no condensation.
Storage / transport	5 to 95 % at 25/55 °C, no condensation.
Atmospheric pressure, Altitude	
Operation	1080 to 795 hPa, corresponds to an elevation of -1000 m to 2000 m.
Storage / transport	1080 to 660 hPa, corresponds to an elevation of -1000 to 3500 m.

[1] Checked in accordance with IEC 60068-2-1, IEC 60068-2-2 and IEC 60068-2-14.

Mechanical Ambient Conditions

Vibration resistance

Standard	Tested in accordance with IEC 60068-2-6.
Operation	Vibration load 1g, 10 cycles per axle: 5 to 8.4 Hz, Deflection 3.5 mm 8.4 to 200 Hz, acceleration 9.8 m/s2
Storage / transport	5 to 8.4 Hz: Deflection 3.5 mm 8.4 Hz to 500 Hz: Acceleration 9.8 m/s2

Impact resistance

Standard	Tested in accordance with IEC 60068-2-27.
Operation	150 m/s2, 11 ms
Storage / transport	250 m/s2, 6 ms

Software

MindConnect Software	Pre-installed MindConnect IoT2050 Software.

Dimensions

Width	142 mm
Height	100 mm
Depth	37 mm

Security Information

General	In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept.

Third Party Terms

General	Third-Party Terms for MindConnect IoT2050 are available via the following web link: https://support.industry.siemens.com/cs/ww/en/view/109813714.

Support

Technical Support	Technical Support is defined in the General Maintenance Services Terms for Software and Hardware available at https://www.siemens.com/sw-terms/mes.

https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview