SCHILDKNECHT
SMART DATA COMMUNICATION

PORTAL.DATAEAGLE.DE

ASSEMBLY

AUTOMATION

PREDICTIVE MAINTENANCE

# IOT AND M2M SOLUTIONS
DATAEAGLE 7000 & Portal

Industry 4.0 platform
Connect machines and equipment to the cloud

A new technology and business paradigm is emerging: the Internet of Things. Interconnected devices, machinery and facilities are opening up new opportunities, but at the same time adding complexity to your business. We want to handle that complexity for you by managing the technical nitty-gritty of connecting your facilities on a global scale and giving you room to harvest the IoT opportunities, new services, business models and revenue streams.

Have a look at the Schildknecht Internet of Things platform that offers a unique combination of global connectivity, powerful security and manageable costs. Built around our DATAEAGLE 7000 series of IoT gateways, it gives you all the components and services necessary for a strong IoT solution from sensor to cloud. For optimal global operability we use mobile radio tech that offers the highest network coverage and secures independence from existing Internet infrastructures. This comes at a manageable cost as we use universal eSIM cards validated by countless providers and provides solid security to your data at any time since we use end-to-end encryption.

With the Schildknecht Internet of Things platform you can access sensor and machine data from anywhere in the world through the ERP or cloud system of your choice, giving you all relevant information at a glance. We do more than just supplying technology: our holistic approach means that we collaborate with you on vital parameters like overall efficiency and cost to develop business models. For these and many more reasons, we consider ourselves a strong partner for the IoT future of your business.

CONNECTIVITY

THINGS   IOT EDGE GATEWAY   DEVICE CLOUD   CLOUD SYSTEM
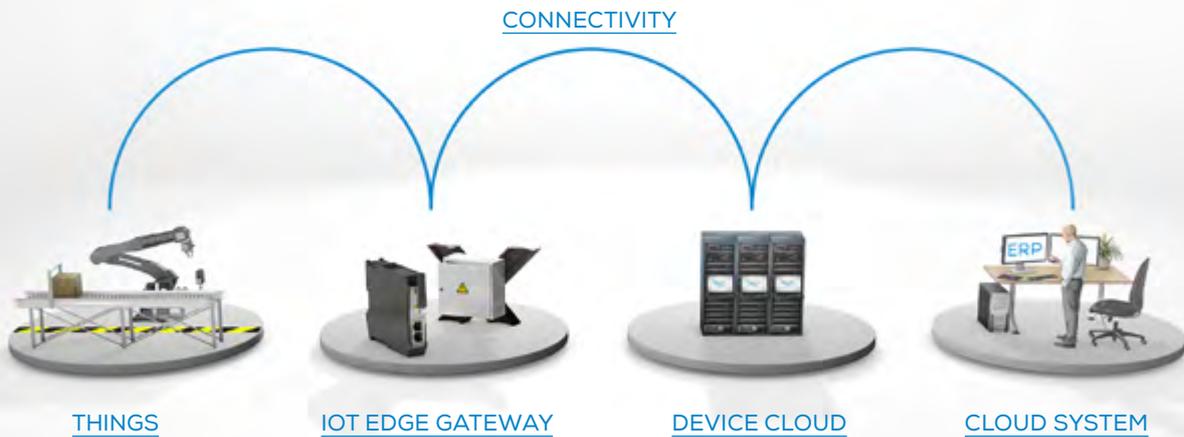
Things
IoT devices: From your things to the cloud

To connect your "things" – sensors, actuators, devices, machinery etc. – to the cloud you need a connection point, a gateway. The Schildknecht DATAEAGLE 7000 IoT edge gateway series offers versatility in connecting IoT sensors and devices at field and control level to the cloud.

No matter what interface you need, we provide it: Ethernet, Serial, Bluetooth etc. Together with our private device cloud the DATAEAGLE 7000 gateway enables you to begin your IoT experiments with only one or two data sources, while maintaining trouble-free scalability up to thousands of networked IoT devices.

We can work together to realise your ideas, starting with a Proof of Concept and quickly and cost-efficiently implementing it with our IoT gateways.

What is your Thing?

According to industry experts, 85% of existing embedded industrial devices are not presently connected. IoT is about creating full transparency and interoperability all the way from sensor to cloud. Just imagine how that could boost your business.

IoT Gateway
This is what our gateway can do – DATAEAGLE 7000

The Schildknecht IoT gateway collects sensor and machine data and passes it on through the Device Cloud to your own cloud system. And in reverse, you can send data to the edge gateway from the cloud and the gateway will pass it on to the IoT-enabled devices connected to it. With the Schildknecht IoT gateway DATAEAGLE 7000 you can analyse sensor or machine data in real-time. That makes it well suited for remote monitoring and maintenance, and for Over The Air software updates for mobile machinery. And due to our globally applicable eSIM card we can connect facilities on a truly global scale. The IoT gateway itself is designed for cost-effective operation: it pre-processes and minimizes the sensor data it receives to lower transmission costs, sending data at a flat rate, regardless of its location. And maximum data security is guaranteed through end-to-end encryption and Security by Design (security based on BSI guidelines and collaboration with TÜV)
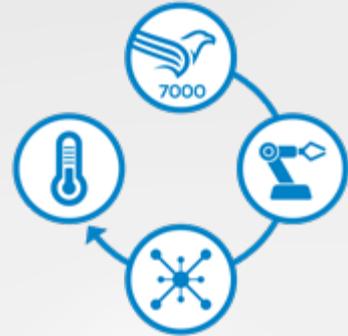
MANY INTERFACES AVAILABLE

The Schildknecht DATAEAGLE 7000 series offers you optimal cloud connectivity through a range of different interfaces:

- Ethernet: for control technology and fieldbus protocols
- Serial: for control technology and fieldbus protocols, sensors and customer specific connections
- Analogue and digital IOs: transmission of sensor and actuator data
- Bluetooth: connection to Bluetooth Smart devices, e.g. sensors and access through mobile phones
- If none of the standard IoT gateways in the DATAEAGLE 7000 series fit your needs we are ready to develop a tailor-made solution for you. We offer almost everything, from a printed circuit board to stand-alone battery powered solution in custom-made housings

### Data collector and interface between things and cloud?

The Schildknecht IoT gateway collects sensor and machine data and passes it on through the Device Cloud to your own cloud system. And in reverse, you can send data to the edge gateway from the cloud and the gateway will pass it on to the IoT-enabled devices connected to it.

IoT Connectivity
The difference between vertical and horizontal connectivity

When it comes to IoT connectivity we find it important to distinguish between different types of connectivity. At Schildknecht we like to differentiate between IoT connected devices on a vertical or a horizontal level. Vertical networking means connecting things like sensors and machinery with end users within a specific production facility or location. For this we recommend using the local Ethernet infrastructure.
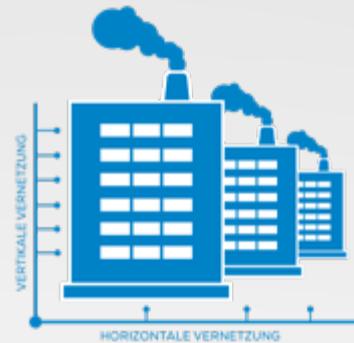
Mobile radio comes into play, when you consider horizontal networking. Horizontal networking means site-independent data communication – machine to machine – throughout the entire value chain. Things and end users will be located at different sites and some end users may even be working for different companies. In horizontal networking mobile radio is the simplest and most versatile technology to transmit data from a machine to its manufacturer. With mobile radio a lot of complexity is taken out of the equation: you can connect without having to worry about local IT infrastructure and Internet connections.

IOT CONNECTIVITY: THE ADVANTAGES OF AN INTEGRATED ESIM CARD

- Always connected to the best network: there are 400 mobile radio providers globally with unsteered roaming functionality in more than 120 countries
- Data volume is visible via the device cloud, and billing can be done over the device cloud as well the eSIM card agreement is linked to the IoT gateway and not to a specific person, making handover easy
- We have taken into account that all devices with a radio interface are subject to regional regulations
- Specific agreements secure very precise billing of the transmitted data packages. We pre-process data and reduce it to a minimum, to avoid unnecessary data transfer. In comparison, ordinary mobile phones produce much larger amounts of data. We offer a global flat rate: we call it 1World, 1SIM, 1Price.

The advantages of mobile radio

Compared to radio technologies like LoRA and Sigfox mobile radio wins because it offers global coverage. Compared to gateways with Ethernet interface – and that goes for WLAN too – mobile radio secures independence from local infrastructure. And not least, it secures independence from the internal network usage guidelines laid out by the company where your sensors or devices are located.

Device Cloud – DATAEAGLE Portal
A cloud to manage your devices

The device cloud is a crucial part of the Schildknecht Industry 4.0 platform. It monitors and manages connected devices, and ensures that they are secure and performing at their best. On top of that, the device cloud integrates with enterprise systems. The device cloud lowers operation costs of IoT networks by simplifying key functions, like deployment of new devices, remote diagnostics, updates and upgrades etc. While a gateway collects data from sensors and machinery at the edge of the network and passes it on, the device cloud works on another level. It is essential for efficient managing of IoT devices.
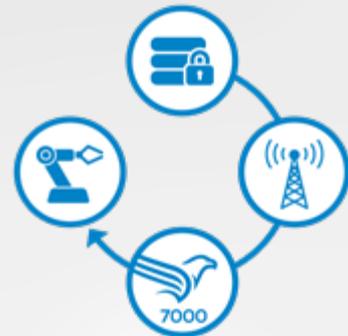
Without the device cloud we would have to perform the time consuming and costly task of connecting every single device or sensor directly to the system. The device cloud does that for us, ensuring simple scalability, and fast integration of devices into the network.

DEVICE CLOUD FUNCTIONS
• Management of IoT gateways and IoT devices
• Storing data in a data base
• Application management
• Management of eSIM cards for simple billing of mobile radio costs
• Firmware updates (OTA)
• User administration
• Alerts in case of emergency via email, text message or phone
• Restful API interface towards higher-level systems
• Graphical interface for visualization (Webserver)
• Ability to perform reporting in pdf format

What a device cloud does?

Primarily it manages the devices connected to it and the complex set of functionalities of the system, like firmware updates, eSIM cards, security alerts etc. The device cloud receives data from the IoT gateways via mobile radio, pre-processes it and passes it on to your system, communicating with it through the standardized RESTful API interface.

• LIVE TEST

Cloud System
Cloud-Systems: their role in the Internet of Things – IoT

The cloud has the general system capability of data analysis
and visualization, therefore, it can be customized for each company,
user group, project, and use case. Various public or private cloud
systems can be used accodring specific needs. Another way of
processing data is provided by a device cloud, for example, to
visualize data from things (devices) or to use them via the API
interface in another application.
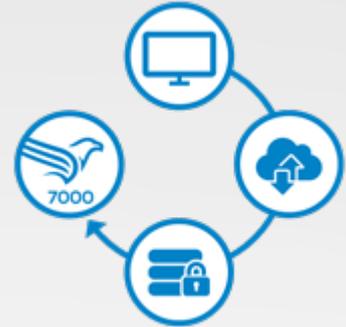
CLOUD SYSTEM: INTEGRATION VIA API INTERFACES
The interface of your system, e.g., a cloud-based ERP (enterprise resource planning) from SAP,
an app or an IoT cloud (e.g., Microsoft Azure), is a software interface - called RESTful API.
This API interface is standardized and provides easy scalability in the number of Things that deliver
data to the cloud. Through this API interface, data is delivered from a Private Device Cloud to a
cloud system (e.g., AWS - Amazon Web Services or Microsoft Azure) are delivered.

Info: A device cloud is needed because many functions must also be ensured when managing many
devices - the Things - e.g. the ability to update.

Which cloud are you using?

Many processes and applications are already
running in companies via private cloud systems.
These play an important role in the IoT –
Internet of Things.

DATAEAGLE Portal – Functions

Overview

FRONTEND

DEVELOPER
TOOLS

FRONTEND API

PROFESSIONAL
SERVICES

• PoC Shields
• Toolset Software
• Webhelp
• Sample Webserver
• Streaming Interface
• Sample Applications

• Client support
• Consulting
• System integration
• Production preparation
  & controlling

Graphic User Interface

User management

Alarms via SMS, E-Mail

Statistics

PDF reports

Invoicing

Device management

Labelling

Application management

SIM management

Templates for Device Configuration

Position & Geo services

Application Connector

Alarms via HTTP push

Application development

Business intelligence

M2M device upgrade

M2M data base

Firmware Update Over-The-Air (OTA)

Virtual devices

DATAEAGLE
M2M PLATFORM

• Custom Applications
• Cloud Account
• Prepaid
• M2M Module
• Simulation Board

• Proof of Concept
• Development support
• Module integration
• Hardware development
• OEM services

M2M UPLINK

X-MACHINE API

DEVELOPER
TOOLS

PROFESSIONAL
SERVICES

MACHINE API

3rd PARTY DEVICES

SMART PRODUCT

DATAEAGLE Portal Licenses
Secure connection to your machines

Device Cloud is a private cloud and represents the interface between IoT gateways and the cloud system of the customer or the end device (e.g. computer, tablet or smartphone). By the end-to-end connection between the things we can implement a security concept and thus guarantee the customer the best possible security of the data! You wonder why you need a Device Cloud? More information about this and the entire IoT system can be found here.

There are 4 different license models for using the DATAEAGLE portal in order to provide the appropriate functions for each application and customer.

USE CASE AND TARGET GROUP:

Operator Level 1
Dashboard

- PoC (Proof of Concept)
- Starter Package
- Customers with one or a few devices (gateways) that only need 1 dashboard

Customer Level 2
Device Management

- Small customers that have few applications and need several devices (gateways), users and dashboards
- Starter package for reseller & OEM
- Sufficient for users with an own Cloud Solution, that request the data over the API

Provider Level 3
Sub-license provider

- Customers with max. 10 projects or system integrators and OEMs
- Customers with own customers, that like to manage their own devices and accounts

Business Server Owner Level 4
Own Cloud license

- Customers, that require own server with customized URL (white label) & independent hosting
- System integrators & companies with +100 customers or projects

DATAEAGLE Portal – License Models
Functions and license models at a glance

Features	Description	Level 1	Level 2	Level 3	Level 4
Address	portal.dataeagle.com	Yes	Yes	Yes	Customized
Visualization	Dashboard	Yes	Yes	Yes	Yes
Data processing /Alerting		Yes*	Yes	Yes	Yes
Reporting	Pdf and xml export	Yes	Yes	Yes	Yes
SW-Interface	Restful API	Yes	Yes	Yes	Yes
Data storage	Historical data	Yes	Yes	Yes	Yes
Real-time data	Depending on interval	Yes	Yes	Yes	Yes
White label		-	-	-	Yes
Hosting/ Server Location	Europe	Included	Included	Included	Customized
Device management		No*	Yes	Yes	Yes
Updates (Over-the-Air)		Yes*	Yes	Yes	Yes
Number of devices	Unlimited	Yes	Yes	Yes	Yes
Device pools by project / customer		No	No	Yes	Yes
Licenses and Admins (Accounts)		No	No	Yes	Yes
Operator Level 1	Dashboard	1 Account			
Customer Level 2	Device Management	unlimited	1 Account		
Provider Level 3	Sublicense provider	unlimited	10 Accounts	1 Admin	
Business Level 4	Own server with full license	unlimited	500 Accounts	10 Admins	1 Server Admin
Upgrade functionality		Yes	Yes	Yes	Extensible
Invoicing					
eSIM management	Billing via credits	Yes	Yes	Yes	Customized
Paypal integration		No	No	No	Optional
Security					
Access	https	Yes	Yes	Yes	Yes
Encryption	AES	Yes	Yes	Yes	Yes
Encryption	Cryptochip	No	No	No	Optional
DSGVO compliance		Yes	Yes	Yes	Yes
Integrations					
Azure Active Directory	User authentication	No	No	No	Yes
More on demand					

* Adjustable by Schildknecht AG Support Team as service (Device/Sensor as a Service)

• More information about Device Cloud Licenses

DATAEAGLE 7010
Description

The DATAEAGLE 7010 series is the ideal multifunctional tool for measurement and remote control technology. The universal inputs acquire data from sensors and signal transmitters. The RS232 and RS485 interfaces enable communication with neighboring machines or control units. For the control of actuators are mA and relay outputs available. An integrated data preprocessing (microcontroller) allows to create own applications. This makes it possible to implement complex computing and control tasks. Through data preprocessing in the gateway reduces the amount of data that is sent and thus lowers costs.

In addition, the DATAEAGLE 7010 series has an integrated buffer battery, which makes it possible to send a message in the event of a power failure. In order to safely handle highly critical measurement and control tasks, the DATAEAGLE 7010 offers an additional backup connection with the LAN interface. backup connection. If the preferred transmission connection (LAN or aGSM can be selected) fails, the system automatically switches to the second connection and the functionality of the application is maintained. thus remains intact. The DATAEAGLE 7012 has 3 universal inputs.

With the DATAEAGLE 7010 extension module, the universal inputs of the DATAEAGLE 7010 can be expanded easily and cost-effectively. The expansion module has 8 universal inputs, 6 relay outputs, 2 mA outputs and one PT100/PT1000 sensor input. Up to 3 expansion modules can be connected to one DATAEAGLE 7010. The display extension is an intelligent graphic display which can be connected directly to the RS232 interface of DATAEAGLE 7010 and DATAEAGLE 7011.

Application example
Versatile use

- Alarm indication
- Direct signal capturing from sensors
- Control of actuators
- Condition Monitoring of pumps
- Pump control and Flow calculation
- Communication with machine interfaces
  via RS485 and RS232 connections

DATAEAGLE 7010
Technical data

o GENERAL

Voltage supply	12 V... 30 V DC
Connection Voltage supply	Terminal clamps
Power consumption	Typ. 1W, max. 3W
Fixing	DIN rail mounting
Protection class	IP20
Temperature range	-20...+60 °C
Conformity	CE
Weight	320 g
Width	157 mm
Height	86 mm
Depth	64 mm
Color	Grey

o RADIO TECHNOLOGY

Frequency	GSM/GPRS Quad Band
SIM	integrated SIM chip
Antenna connection	SMA Connection - 50 Ohm

o INTERFACE

Universal inputs	8 x analog or digital
	0... 20 mA, 4... 20 mA
	0... 2 V, 0... 10 V
	PWM
	Frequency
	Digital
	Day / interval counter
Ext. temperature sensor	1 PT1000/1000
Modbus	2 x RS485 (switchable master/ slave)
	Modes: RTU, ASCII
	64 in-, 64 output channels
Serial interface	1 x RS232 for connection of a digital sensor
	Modes: ASCII
	64 in-, 64 output channels
Outputs	6 x Relays (2 groups)
	2 x analog output

o ACCESSORIES

	DATAEAGLE 7010 Extension module
	Display

o ORDER NUMBER

	17010

7010 EXTENSION MODULE
Technical data

GENERAL

Voltage supply	12 V... 30 V DC
Connection Voltage supply	Terminal clamps
Power consumption	–
Fixing	DIN rail mounting
Protection class	IP20
Temperature range	–20...+60 °C
Conformity	CE
Weight	320 g
Width	157 mm
Height	86 mm
Depth	64 mm
Color	Grey

RADIO TECHNOLOGY

Frequency	–
SIM	–
Antenna connection	–

INTERFACE

Universal inputs	8 x analog or digital
	0... 20 mA, 4... 20 mA
	0... 2 V, 0... 10 V
	PWM
	Frequency
	Digital
	Day / interval counter
Ext. temperature sensor	2 PT1000/1000
Modbus	–
Serial interface	–
Outputs	6 x Relay (2 groups)
	2 x analog output

ACCESSORIES

	DATAEAGLE 7010 Extension module
	Display

ORDER NUMBER

	17100

DATAEAGLE 7011
Technical data

o GENERAL

Voltage supply	12 V ... 30 V DC
Connection Voltage supply	Terminal clamps
Power consumption	Typ. 1W, max. 3W
Fixing	DIN rail mounting
Protection class	IP20
Temperature range	-20...+60 °C
Conformity	CE
Weight	160 g
Width	104 mm
Height	85 mm
Depth	32 mm
Color	Grey

o RADIO TECHNOLOGY

Frequency	GSM/GPRS Quad band
SIM	integrated SIM-Chip
Antenna connection	SMA Connection - 50 Ohm

o INTERFACE

Universal inputs	3 x analog or digital
	0... 20 mA, 4... 20 mA
	0... 2 V, 0... 10 V
	PWM
	Frequency
	Digital
	Day / interval counter
Ext. temperature sensor	-
Modbus	1 x RS485 (switchable master/ slave)
	Modes: RTU, ASCII
	64 in-, 64 output channels
Serial interface	1 x RS232 for connection of a digital sensor
	Modes: ASCII
	64 in-, 64 output channels
Ouptputs	1 x potential-free switch contact
	1 x analog output (no galvanic isolation)

o ACCESSORIES
Display

o ORDER NUMBER
17011

DATAEAGLE 7012
Technical data

o GENERAL

Voltage supply	12 V ... 30 V DC
Connection Voltage supply	Terminal clamps
Power consumption	Typ. 1W, max. 3W
Fixing	DIN rail mounting
Protection class	IP20
Temperature range	-20...+60 °C
Conformity	CE
Weight	160 g
Width	104 mm
Height	85 mm
Depth	32 mm
Color	Grey

o RADIO TECHNOLOGY

Frequency	GSM/GPRS Quad band
SIM	integrated SIM chip
Antenna connection	SMA Connection - 50 Ohm

o INTERFACE

Universal inputs	3 x analog or digital
	0... 20 mA, 4... 20 mA
	0... 2 V, 0... 10 V
	PWM
	Frequency
	Digital
	Da / interval counter
Ext. temperature sensor	-
Modbus	-
Serial interface	-
Outputs	1 x potential-free switch contact
	1 x analog output (no galvanic isolation)

o ACCESSORIES
Display

o ORDER NUMBER
17012

DATAEAGLE 7020
Description

The [DATAEAGLE 7020](#) is a compact device for the acquisition, processing and transmission of signals. Data from analog sensors and signal generators can be acquired via 4 universal inputs. The power supply of the sensors can be provided directly by the DATAEAGLE 7020. For direct control of an actuator, the device has a potential-free switching contact.

The connected sensor or the measurement electronics can be activated and supplied via a switchable voltage output for measurement. The parameterization and programming is realized via the DATAEAGLE portal. The integrated SIM card allows worldwide use at calculated costs. The devices can be powered by a battery. The charge controller for battery operation is already integrated and also suitable for the coupling of solar panels.
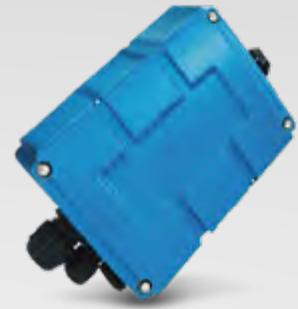
Application example
Versatile use

o Alarm indication
o Direct signal capturing from sensors
o Water level measurement
o Condition Monitoring of pumps
o Temperature monitoring
o Predictive maintenance
o Data Logging

DATAEAGLE 7020
Technical data

GENERAL

Supply	Disposable or rechargeable battery
Charging voltage	12 V... 32 V DC (max. 9 W)
Protection class	IP66
Temperature range	-20...+60 °C
Conformity	CE
Weight (without rechargeable battery)	400 g
Width	86 mm
Height	175 mm
Depth	64 mm
Color	Blue

RADIO TECHNOLOGY

Frequency	2G / 3G Penta-Band Modem
SIM	integrierted SIM-Chip
Antenna connection	FME

INTERFACE

Universal inputs	4 x analog or digital
	0... 20 mA, 4... 20 mA
	0... 2 V, 0... 10 V
	Digital
	Day / interval counter
Output	1 x switchable sensor supply:
	15,41 V max. 196 mA
	23,82 V max. 127 mA
	1 x potential-free switch contact
	1 x switchable power supply 3,3 V

ACCESSORIES (OPTIONAL)

	DIN rail mounting set
	Universal bracket
	Pipe mounting set
	Battery 13Ah
	Battery 13.2 Ah
	Battery 13.6 Ah
	Charger
	Direct DC / - and AC supply

ORDER NUMBER

	17020-V3

DATAEAGLE 7050
Description

Using [DATAEAGLE 7050](#) IoT Edge Gateway of Schildknecht AG enables transmitting data from the control unit into the cloud. Thanks to the eSIM card which is operable worldwide, systems can be networked in all over the world. Thus, IoT Edge Gateway DATAEAGLE 7050 is the optimal solution for analysing data of machines in real-time, e.g. for remote maintenance. This involves new business models for our customers in the form of services for their customers. Data analysis enables an increase in operating costs or improvement of products and services. Data preprocessing in the IoT Edge Gateway allows for data compression, providing for lower mobile radio costs at a standard rate independently of the respective place of installation.

Application example
Versatile use

- Remote Machinery Monitoring
- Applicable for many machines and fieldbusses
- Predictive Maintenance
- Condition Monitoring
- Process Data Monitoring

DATAEAGLE 7050 Compact ETHERNET

Technical data

GENERAL

Voltage supply	24 V DC
Connection voltage supply	Terminal clamps
Power consumption	200 mA
Fixing	DIN rail mounting
Protection class	IP20
Temperature range	-20...+60 °C
Conformity	CE
Weight	130 g
Width	22,5 mm
Height	99 mm
Depth	114,5 mm
Color	Black

RADIO TECHNOLOGY

2G	2G 850 MHz / 900MHz / 1800 MHz / 1900 MHz
3G EU	2G 900MHz / 1800 MHz; UMTS B1, B8
3G EU + WiFi	2G 900MHz / 1800 MHz; UMTS B1, B8; 802.11 b/g/n
3G US	2G 850 MHz / 1900 MHz; UMTS B2, B5
3G World	2G 850 MHz / 900MHz / 1800 MHz / 1900 MHz; UMTS B1, B2, B5, B6, B8, B19
4G EU	4G 2100 MHz, 1800 MHz, 2600MHz, 900MHz, 800 MHz UMTS B2, B8 2G 1800 MHz, 900 MHz
4G US	4G 1900 MHz, AWS 1700 MHz, 850 MHz, 700 MHz UMTS B2/B5
5G	In preparation

INTERFACE

Interface	RJ 45
2-port Switch	Yes
Fieldbus	EtherCAT, Ethernet/IP, Modbus TCP, ETHERNET POWERLINK, PROFINET VARAN, sercos

DATAEAGLE 7050 Compact ETHERNET
Technical data

OPTION

Bluetooth Low Energy	12006
Linux (DATAEAGLE PI)	12008

ORDER NUMBER

DATAEAGLE Compact 7050 Ethernet	17050_ETH
PROFINET IO	11180
EtherCAT	12000
Ethernet/IP	12001
Modbus TCP	12002
ETHERNET POWERLINK	12003
VARAN	12004
sercos	12005

DATAEAGLE 7050 Compact PROFIBUS

Technical data

GENERAL

Voltage supply	24 V DC
Connection voltage supply	Terminal clamps
Power consumption	200 mA
Fixing	DIN rail mounting
Protection class	IP20
Temperature range	–20...+60 °C
Conformity	CE
Weight	130 g
Width	22,5 mm
Height	99 mm
Depth	114,5 mm
Color	Black

RADIO TECHNOLOGY

2G	2G 850 MHz / 900MHz / 1800 MHz / 1900 MHz
3G EU	2G 900MHz / 1800 MHz; UMTS B1, B8
3G EU + WiFi	2G 900MHz / 1800 MHz; UMTS B1, B8; 802.11 b/g/n
3G US	2G 850 MHz / 1900 MHz; UMTS B2, B5
3G World	2G 850 MHz / 900MHz / 1800 MHz / 1900 MHz; UMTS B1, B2, B5, B6, B8, B19
4G EU	4G 2100 MHz, 1800 MHz, 2600MHz, 900MHz, 800 MHz UMTS B2, B8 2G 1800 MHz, 900 MHz
4G US	4G 1900 MHz, AWS 1700 MHz, 850 MHz, 700 MHz UMTS B2/B5
5G	In preparation

INTERFACE

Interface	9 pol. SUB-D
Fieldbus	PROFIBUS

OPTION

	Bluetooth Low Energy

ORDER NUMBER

	17050_DP

DATAEAGLE 7050 Compact CANopen

Technical data

GENERAL

Voltage supply	24 V DC
Connection voltage supply	Terminal clamps
Power consumption	200 mA
Fixing	DIN rail mounting
Protection class	IP20
Temperature range	-20...+60 °C
Conformity	CE
Weight	130 g
Width	22,5 mm
Height	99 mm
Depth	114,5 mm
Color	Black

RADIO TECHNOLOGY

2G	2G 850 MHz / 900MHz / 1800 MHz / 1900 MHz
3G EU	2G 900MHz / 1800 MHz; UMTS B1, B8
3G EU + WiFi	2G 900MHz / 1800 MHz; UMTS B1, B8; 802.11 b/g/n
3G US	2G 850 MHz / 1900 MHz; UMTS B2, B5
3G World	2G 850 MHz / 900MHz / 1800 MHz / 1900 MHz; UMTS B1, B2, B5, B6, B8, B19
4G EU	4G 2100 MHz, 1800 MHz, 2600MHz, 900MHz, 800 MHz UMTS B2, B8 2G 1800 MHz, 900 MHz
4G US	4G 1900 MHz, AWS 1700 MHz, 850 MHz, 700 MHz UMTS B2/B5
5G	In preparation

INTERFACE

Interface	9 pol. SUB-D
Fieldbus	CANopen

OPTION

	Bluetooth Low Energy

ORDER NUMBER

	17050_CO