

INTELLInova

online condition monitoring



Technical data sheets
2023-01

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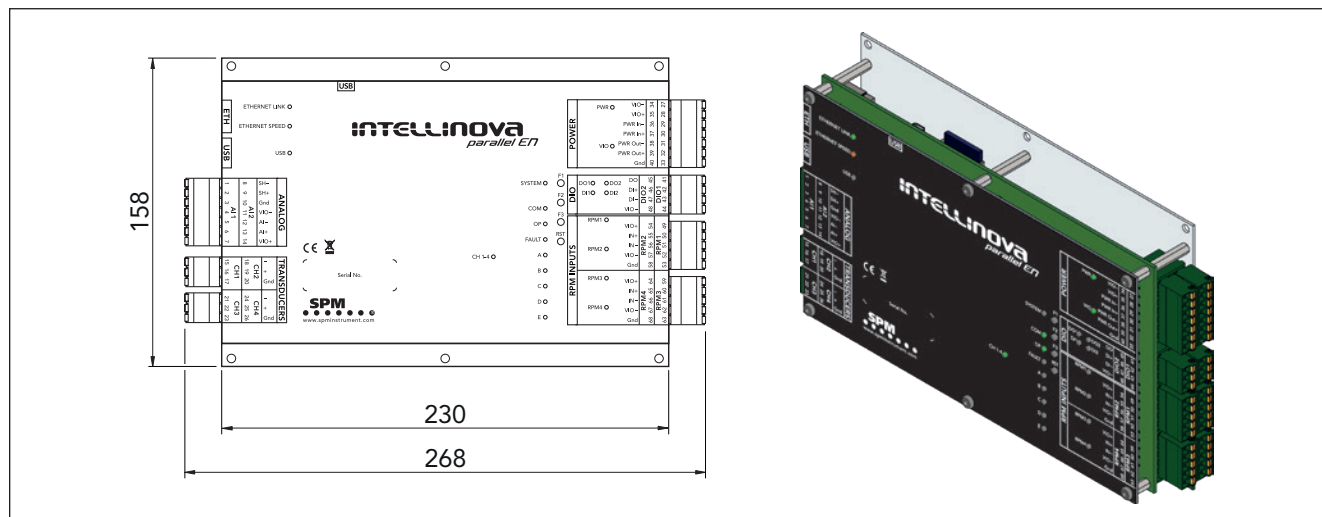
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Intellinova® Parallel EN – System unit INCEN4



The Intellinova Parallel EN system unit is a powerful measuring unit for continuous monitoring of machine condition. The unit communicates with Condmaster Ruby® via standard Ethernet. For a complete online monitoring solution, including INCEN4 system unit, cabinet, Wi-Fi communication accessory*, and cooling fan accessory for operating temperature up to +60 °C, see *technical data sheet TD-654*.

By collecting vibration and/or shock pulse readings from up to four channels connected in parallel to one digital signal processor, and four RPM channels, INCEN4 allows condition measurement on complex applications. Utilizing dual-processor capacity on four channels in parallel provides maximum flexibility. Two digital inputs and two digital outputs can be used for connection to machine stop, alarm light, or other external devices, directly or via external relays. The system unit also has two analog inputs that can be used to accept process parameters.

The Group Measurement function enables multiple measuring assignments to start simultaneously, often using a trigger. The Live View in Condmaster Ruby is used for monitoring the state of all connected devices.

The system unit is equipped with parallel measuring logic, alarm, storing, and analysis logic. The unit has status LED indicators and a USB connection for the setup of the system.

The communication application Condmaster Entity Server (CES) transmits measuring assignments to and reads the results from, the system unit. CES also controls measurement operations, data processing, and storage.

Both vibration and shock pulse measurements can be performed using DuoTech® accelerometers.

Technical specifications

Communication:	USB 2.1, Ethernet TCP/IP, 1000 Mbps
Power range:	12 to 35 V DC, max. 50 W
Operating temperature:	–20 to +50 °C (–4 to +122 °F)
Storage temperature:	–20 to +85 °C (–4 to +185 °F)
Relative humidity:	10 to 90% (non-condensing)
Dimensions (w x h x d):	268x158x43 mm (10.6x6.2x1.7 in)

Condition monitoring

Measuring channels:	4, parallel
Measuring methods:	ISO2372, ISO10816, HD ENV, FFT with symptoms, EVAM vibration analysis, SPM HD, LR/HR HD, Orbit
Measuring functions:	Time based measurement, Group measurement, Linked measurement, Idle time measurement, etc.
Frequency range:	DC to 40 kHz
Measuring range:	≥60g peak-peak (using 100mV/g transducer)
Resolution:	0.0015m/s ² RMS (using 100mV/g transducer)

Measurement windows:	Rectangle, Hanning, Hamming, Flat Top
Averages:	time synch, FFT linear, FFT exponential, FFT peak-hold
Spectrum lines:	400, 800, 1600, 3200, 6400, 12800, 25600
Transducer type:	SLD type vibration transducers, DuoTech accelerometers, or IEPE (ICP) type transducers

RPM

Inputs:	4, parallel
Transducer type:	proximity switch or tachometer sensor
Measuring range:	0.1 to 1 500 000 rpm (when 1 pulse/rev)

Digital channels

Inputs/outputs:	2/2
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Analog channels

Inputs:	2
Measuring range:	0 to 20 mA or 0 to 10 V

Part number	INCEN4
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* Can only be included when ordering a system unit. Can not be ordered afterwards

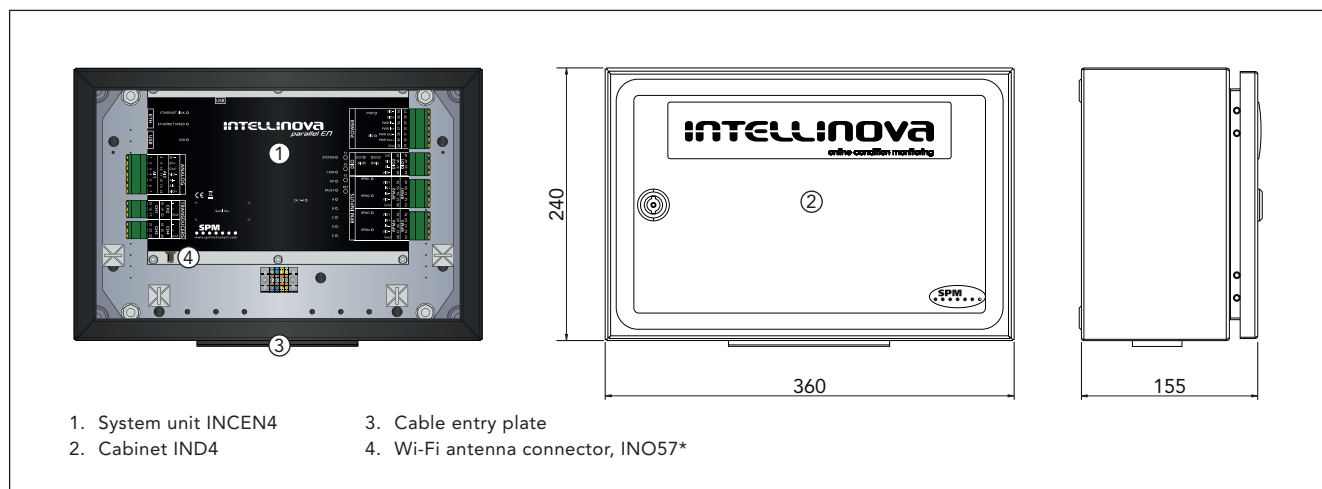


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Intellinova® Parallel EN – System INSEN4



INSEN4 is an advanced online system for continuous monitoring of machine condition. The Intellinova system is comprised of system unit INCEN4, cabinet IND4, internal cabling, power supply unit, and terminals for power supply.

By collecting vibration and/or shock pulse readings from up to four channels connected in parallel to one digital signal processor, and four RPM channels, INCEN4 allows condition measurement on complex applications. Two digital inputs and two digital outputs can be used for connection to machine stop, alarm light, or other external devices, directly or via external relays. The system unit also has two analog inputs that can be used to accept process parameters.

The system communicates with Condmaster Ruby via standard Ethernet.

Technical specifications

Design, enclosure: powder-coated, IP65
Power supply unit: 100-240VAC/24VDC,
60W, 50-60 Hz
Cable entries: 16x6.5 mm, 4x12.1 mm,
4x16.1 mm
Weight: approx. 6.75 kg (14.88 lbs)

Part numbers

INSEN4 Intellinova Parallel EN system (INCEN4+IND4)
INCEN4 System unit
IND4 Cabinet in powder-coated steel,
360x240x155 mm (14.2x9.4x6.1 in)

The Group Measurement function enables multiple measuring assignments to start simultaneously, often using a trigger. In Condmaster, the Live View is used for monitoring the state of all connected devices.

The system unit is equipped with parallel measuring logic, alarm, storing, and analysis logic. It has status LED indicators and USB connection for setup of the system. Technical specifications for INCEN4, see *technical data sheet TD-653*.

IND4 is an industrial enclosure designed for encapsulation of INCEN4. The cabinet, intended for wall mounting, is robust and sealed for use in harsh environments.

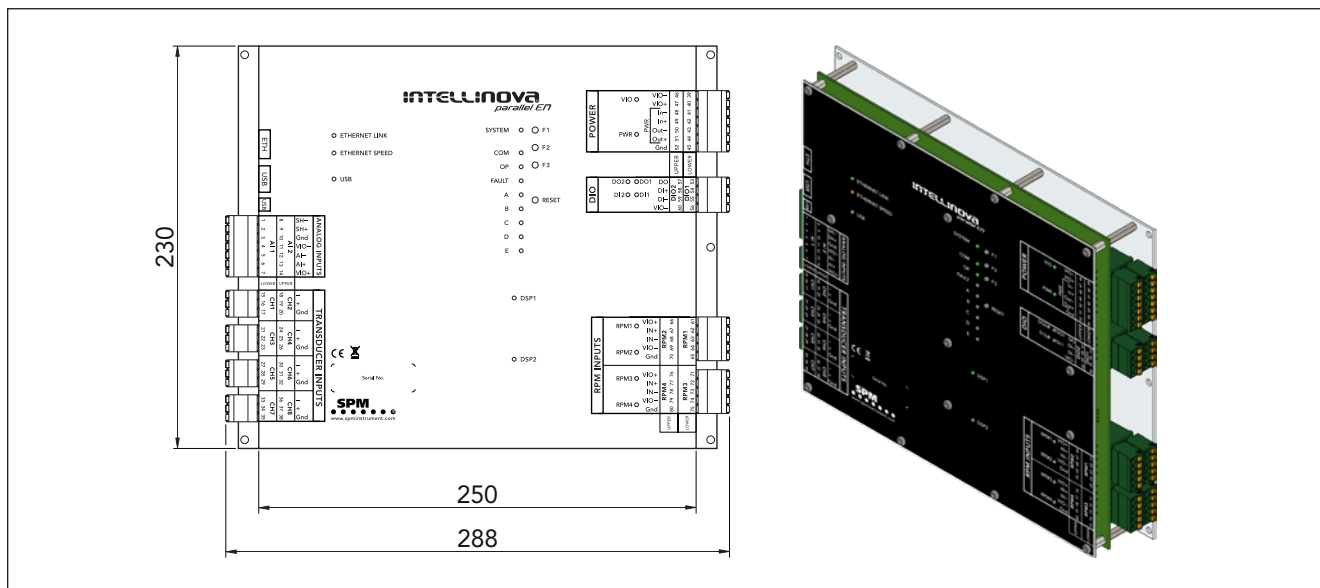
Accessories

INO57 Wi-Fi communication* (TD-656)
INO58 Cooling fan for operating temp. up to +60 °C
INO59 Wi-Fi antenna for INO57 (TD-656)
81325 Mounting braces, 4 pcs

* Can only be included when ordering a system unit. Can not be ordered afterwards



Intellinova® Parallel EN – System unit INCEN8



The Intellinova Parallel EN system unit is a powerful measuring unit for continuous monitoring of machine condition. The unit communicates with Condmaster Ruby® via standard Ethernet in a LAN network. For a complete online monitoring solution, including INCEN8 system unit, cabinet, and Wi-Fi communication accessory*, see *technical data sheet TD-566*.

By collecting vibration and/or shock pulse readings from up to eight channels connected in parallel to two digital signal processors, and four RPM channels, INCEN8 allows condition measurement on complex applications. Utilizing dual processor capacity on eight channels in parallel provides maximum flexibility. Two digital inputs and two digital outputs can be used for connection to machine stop, alarm light, or other external devices, directly or via external relays. The system unit also has two analog inputs that can be used to accept process parameters.

The Group Measurement function enables multiple measuring assignments to start simultaneously, often using a trigger. The Live View in Condmaster Ruby is used for monitoring the state of all connected devices.

The system unit is equipped with parallel measuring logic, alarm, storing and analysis logic. The unit has status LED indicators and USB connection for setup of the system.

The communication application Condmaster Entity Server transmits measuring assignments to, and reads the results from, the system unit. The Entity Server also controls the measurement operations, data processing and storage.

Both vibration and shock pulse measurements can be performed using DuoTech® accelerometers.

Technical specifications

Communication: USB 2.1, Ethernet TCP/IP, 1000 Mbps
 Power range: 12 to 35 V DC, max. 50 W
 Operating temperature: -20 to +60 °C (-4 to +140 °F)
 Storage temperature: -20 to +85 °C (-4 to +185 °F)
 Relative humidity: 10 to 90% (non-condensing)
 Dimensions (w x h x d): 288x230x40 mm (11.3x9.1x1.6 in)

Measurement windows: Rectangle, Hanning, Hamming, Flat Top
 Averages: time synch, FFT linear, FFT exponential, FFT peak-hold
 Spectrum lines: 400, 800, 1600, 3200, 6400, 12800, 25600
 Transducer type: SLD144, SLC144 DuoTech or IEPE (ICP) type transducers

Condition monitoring

Measuring channels: 8, parallel
 Measuring methods: ISO2372, ISO10816, HD ENV, FFT with symptoms, EVAM vibration analysis, SPM HD, LR/HR HD, Orbit
 Measuring functions: Time based measurement, Group measurement, Linked measurement, Idle time measurement, etc.
 Frequency range: DC to 40 kHz
 Measuring range: ≥60g peak-peak (using 100mV/g transducer)
 Resolution: 0.0015m/s² RMS (using 100mV/g transducer)

RPM

Inputs: 4, parallel
 Transducer type: proximity switch or tachometer sensor
 Measuring range: 0.1 to 1 500 000 rpm (when 1 pulse/rev)

Digital channels

Inputs/outputs: 2/2

Analog channels

Inputs: 2
 Measuring range: 0 to 20 mA or 0 to 10 V

Part number INCEN8



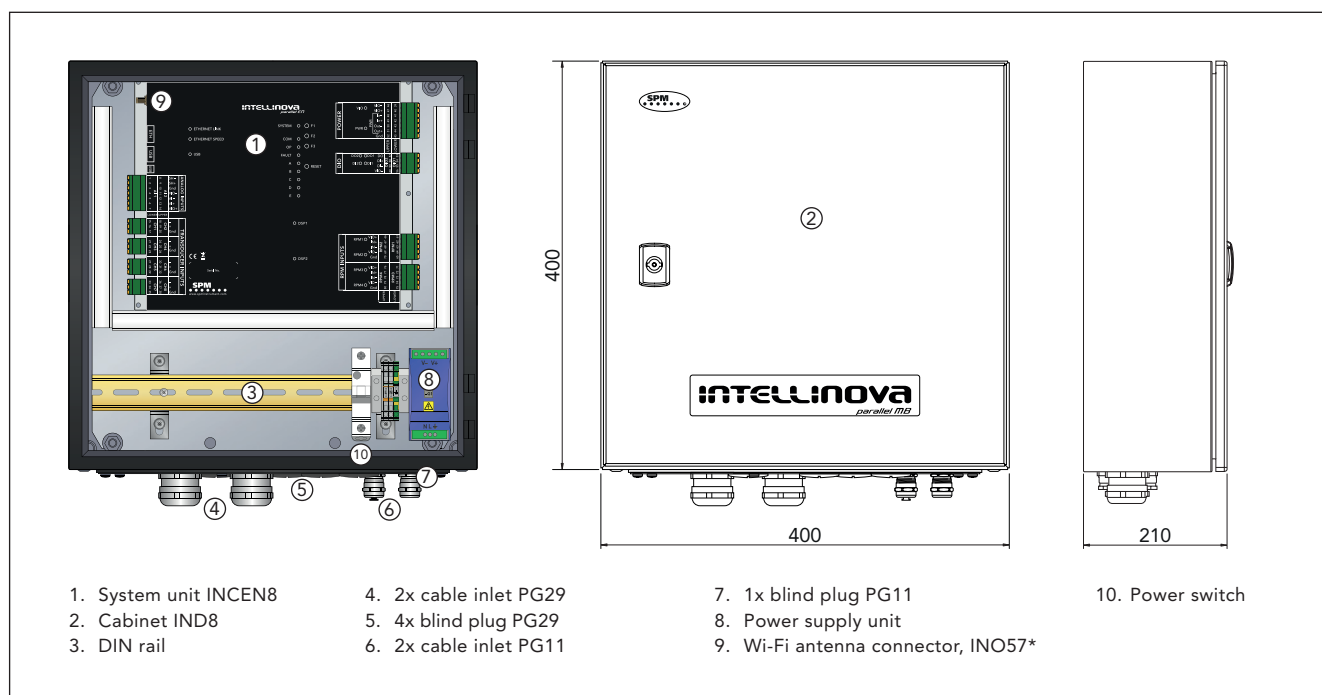
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* Can only be included when ordering a system unit. Can not be ordered afterwards



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Intellinova® Parallel EN – System INSEN8



INSEN8 is an advanced online system for continuous monitoring of machine condition. The Intellinova system is comprised of system unit INCEN8, cabinet IND8, internal cabling and terminals for power supply. It is complete with power supply unit, power switch and DIN rail.

By collecting vibration and/or shock pulse readings from up to eight channels connected in parallel to two digital signal processors, and four RPM channels, the system allows condition measurement on complex applications. Utilizing dual processor capacity on eight channels in parallel provides maximum flexibility. Two digital inputs and two digital outputs can be used for connection to machine stop, alarm light, or other external devices, directly or via external relays. The system also has two analog inputs which can be used to accept process parameters.

Technical specifications

Design, enclosure: powder-coated/stainless steel, IP65
Power supply unit: 100-240VAC/24VDC, 60W, 50-60 Hz
Cable channels: 3 pcs, plastic
Cable inlets: 2xPG29, 2xPG11
Weight: approx. 11 kg (24 lbs)

Part numbers

INSEN8 Intellinova Parallel EN system (INCEN8+IND8)
INSEN8SS Intellinova Parallel EN system (INCEN8+IND8SS)
INCEN8 System unit
IND8 Cabinet in powder-coated steel, 400x400x210 mm (15.7x15.7x8.3 in)
IND8SS Cabinet in stainless steel, 400x400x210 mm (15.7x15.7x8.3 in)

The system communicates with Condmaster Ruby via standard Ethernet. The Group Measurement function enables multiple measuring assignments to start simultaneously, often using a trigger. In Condmaster, the Live View is used for monitoring the state of all connected devices.

The system unit is equipped with parallel measuring logic, alarm, storing and analysis logic. It has status LED indicators and USB connection for setup of the system. Technical specifications for INCEN8, see *technical data sheet TD-565*. Accessories for INSEN8, see *technical data sheet TD-289*.

IND8 is an industrial enclosure designed for encapsulation of INCEN8. The cabinet, intended for wall mounting, is robust and sealed for use in harsh environments.

Spare parts

INO32 Power switch, incl. cabling
90632 Power supply unit, 24VDC/60W

Options

INO16 Relay for external alarm, 2 poles (TD-290)
INO33 Displacement signal interface (TD-549)
INO34 Wireless 4G router (TD-550)
INO35 LAN Ethernet switch (TD-503)
INO57 Wi-Fi communication* (TD-656)
INO59 Wi-Fi antenna for INO57 (TD-656)
15885 Cable inlet, PG11, for cable 6-11.5 mm, IP68, brass/nickel-plated, Neoprene sealing (TD-289)
18034 Cable inlet, PG29, for 8 measuring cables diam. 5.5 mm, IP65, brass/nickel-plated (TD-289)
18035 Cable inlet, PG29, diam. 16-26 mm, IP68, brass/nickel-plated (TD-289)
81325 Mounting braces, 4 pcs

* Can only be included when ordering a system unit. Can not be ordered afterwards

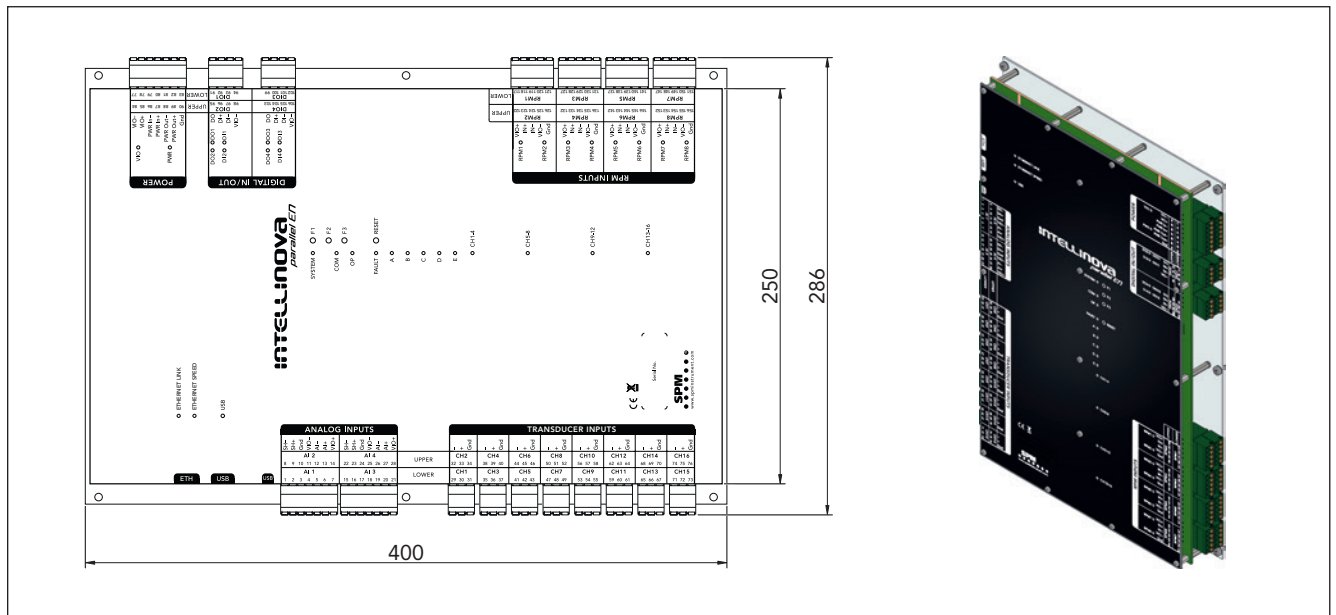


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Intellinova® Parallel EN – System unit INCEN16



The Intellinova Parallel EN system unit is a powerful measuring unit for continuous monitoring of machine condition. The unit communicates with Condmaster Ruby® via standard Ethernet. For a complete online monitoring solution, including system unit INCEN16, cabinet IND16, and Wi-Fi communication accessory*, see *technical data sheet TD-545*.

By collecting vibration and/or shock pulse readings from up to sixteen parallel channels and eight RPM channels, the system allows condition measurement on complex applications. Four digital inputs and four digital outputs can be used for connection to machine stop, alarm light, or other external devices, directly or via external relays. The system also has four analog inputs that can be used to accept process parameters.

The Group Measurement function enables multiple measuring assignments to start simultaneously, often using a trigger. The Live View in Condmaster Ruby is used for monitoring the state of all connected devices.

The system unit is equipped with a parallel measuring logic, alarm, storing, and analysis logic. The unit has status LED indicators and a USB connection for the setup of the system.

The communication application Condmaster Entity Server transmits measuring assignments to, and reads the results from, the system unit. The Entity Server also controls the measurement operations, data processing, and storage.

Both vibration and shock pulse measurements can be performed using DuoTech® accelerometers.

Technical specifications

Communication: USB 2.1, Ethernet TCP/IP, 1000 Mbps

Power range: 12 to 35 V DC, max. 50 W

Operating temperature: -20 to +60 °C (-4 to +140 °F)

Storage temperature: -20 to +85 °C (-4 to +185 °F)

Relative humidity: 10 to 90% (non-condensing)

Condition monitoring

Measuring channels: 16, parallel

Measuring methods: ISO2372, ISO10816, HD ENV, FFT with symptoms, EVAM vibration analysis, SPM HD, LR/HR HD, Orbit

Measuring functions: Time based measurement, Group measurement, Linked measurement, Idle time measurement, etc.

Frequency range: DC to 40 kHz

Measuring range: ≥60g peak-peak (using 100mV/g transducer)

Resolution: 0.0015m/s² RMS (using 100mV/g transducer)

Measurement windows: Rectangle, Hanning, Hamming, Flat Top

Averages:

time synch, FFT linear, FFT exponential, FFT peak-hold
400, 800, 1600, 3200, 6400, 12800, 25600

Spectrum lines:

Transducer type:

SLD144, SLC144 DuoTech or IEPE (ICP) type transducers

RPM

Inputs:

8, parallel

Transducer type:

proximity switch or tachometer sensor

Measuring range:

0.1 to 1 500 000 rpm (when 1 pulse/rev)

Digital channels

Inputs/outputs:

4/4

Analog channels

Inputs:

4

Measuring range:

0 to 20 mA or 0 to 10 V

Part number

INCEN16

* Can only be included when ordering a system unit. Can not be ordered afterwards.

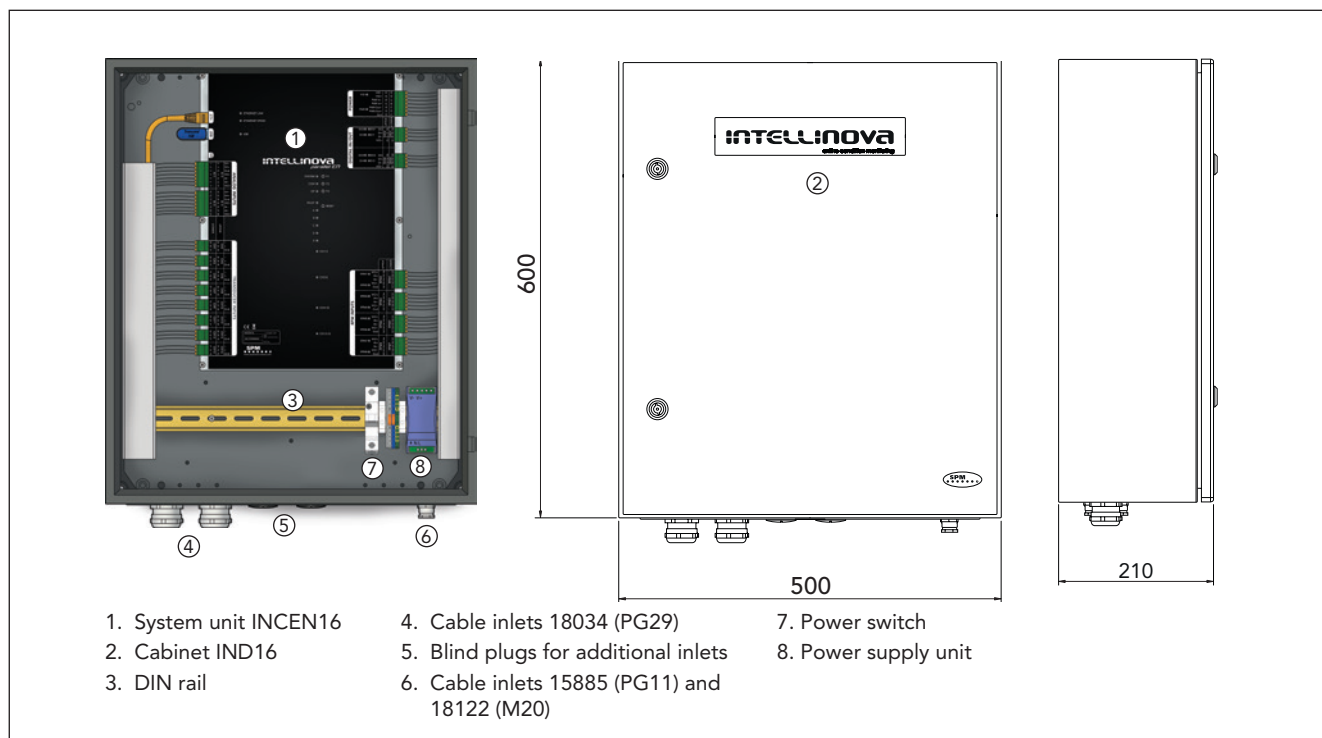


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Intellinova® Parallel EN – System INSEN16



INSEN16 is an advanced online system for continuous monitoring of machine condition. The Intellinova system is comprised of system unit INCEN16, cabinet IND16, internal cabling, and terminals for power supply. It is complete with a power supply unit, power switch and DIN rail.

By collecting vibration and/or shock pulse readings from up to 16 parallel channels and eight RPM channels, the system allows condition measurement on complex applications. Four digital inputs and four digital outputs can be used for connection to machine stop, alarm light, or other external devices, directly or via external relays. The system also has four analog inputs which can be used to accept process parameters.

Technical specifications

Design, enclosure: powder-coated steel or stainless steel, IP65
Power supply unit: 100-240VAC/24VDC, 60W, 50-60 Hz
Cable channels: 2 pcs, plastic
Cable inlets: 2xPG29 (18034)
1xPG11 (15885)
1xM20 (18122)
Weight: approx. 22 kg (49 lbs)

Part numbers

INSEN16 Intellinova Parallel EN system (INCEN16+IND16)
INCEN16 System unit
IND16 Cabinet in powder-coated steel, 500x600x210 mm (19.7x23.6x8.3 in)

Spare parts

INO32 Power switch, incl. cabling
90632 Power supply unit, 24VDC/60W

The system communicates with Condmaster Ruby via standard Ethernet. The Group Measurement function enables multiple measuring assignments to start simultaneously, often using a trigger. In Condmaster, the Live View is used for monitoring the state of all connected devices.

The system unit is equipped with a parallel measuring logic, alarm, storing, and analysis logic. It has status LED indicators and a USB connection for the setup of the system. Technical specifications for INCEN16, see *technical data sheet TD-543*. Accessories for INSEN16, see *technical data sheet TD-289*.

IND16 is an industrial enclosure in powder-coated steel designed for encapsulation of INCEN16. The cabinet, intended for wall mounting, is robust and sealed for use in harsh environments. It is also available in stainless steel, see TD-659.

Accessories

INO16 Relay for external alarm, 2 poles (TD-290)
INO33 Displacement signal interface (TD-549)
INO34 Wireless 4G router* (TD-550)
INO35 Gigabit switch* (TD-503)
INO57 Wi-Fi communication** (TD-656)
INO59 Wi-Fi antenna for INO57 (TD-656)
15808 Cable inlet, PG7, for cable 2.5-6.5 mm, IP68, brass/nickel-plated, Neoprene sealing (TD-289)
15885 Cable inlet, PG11, for cable 6-11.5 mm, IP68, brass/nickel-plated, Neoprene sealing (TD-289)
18034 Cable inlet, PG29, for 8 measuring cables diam. 5.5 mm, IP65, brass/nickel-plated (TD-289)
18035 Cable inlet, PG29, diam. 16-26 mm, IP68, brass/nickel-plated (TD-289)
18122 Cable inlet, M20, for cable 4-10 mm, IP68, brass/nickel-plated, Neoprene sealing
81325 Mounting braces, 4 pcs

* INO34 and INO35 cannot be used together

** Can only be included when ordering a system unit. Can not be ordered afterwards.

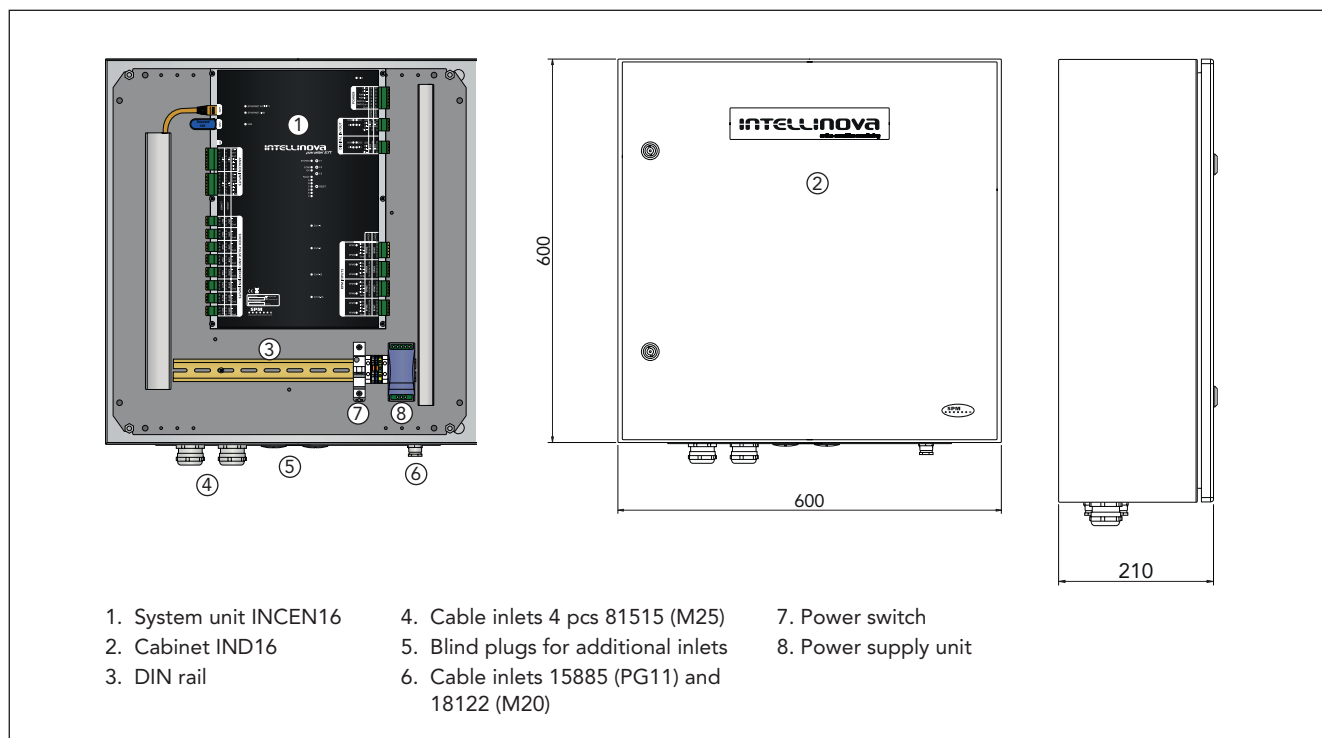


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Intellinova® Parallel EN – System INSEN16SS



INSEN16SS is an advanced online system for continuous monitoring of machine condition. The Intellinova system is comprised of system unit INCEN16, cabinet IND16SS, internal cabling, and terminals for power supply. It is complete with a power supply unit, power switch and DIN rail.

By collecting vibration and/or shock pulse readings from up to 16 parallel channels and eight RPM channels, the system allows condition measurement on complex applications. Four digital inputs and four digital outputs can be used for connection to machine stop, alarm light, or other external devices, directly or via external relays. The system also has four analog inputs which can be used to accept process parameters.

Technical specifications

Design, enclosure: 304 brushed stainless steel, IP66
Power supply unit: 100-240VAC/24VDC, 60W, 50-60 Hz
Cable channels: 2 pcs, plastic
Cable inlets: 4xM25 (81515)
1xPG11 (15885)
1xM20 (18122)
4xM25 plugged hole for extra cables
Weight: approx. 22 kg (49 lbs)

Part numbers

INSEN16SS Intellinova Parallel EN system
(INCEN16+IND16SS)
INCEN16 System unit
IND16SS Cabinet in stainless steel, 600x600x210 mm
(23.6x23.6x8.3 in)

The system communicates with Condmaster Ruby via standard Ethernet. The Group Measurement function enables multiple measuring assignments to start simultaneously, often using a trigger. In Condmaster, the Live View is used for monitoring the state of all connected devices.

The system unit is equipped with a parallel measuring logic, alarm, storing, and analysis logic. It has status LED indicators and a USB connection for the setup of the system. Technical specifications for INCEN16, see *technical data sheet TD-543*. Accessories for INSEN16, see *technical data sheet TD-289*.

IND16SS is an industrial enclosure in 304 brushed stainless steel designed for encapsulation of INCEN16. The cabinet, intended for wall mounting, is robust and sealed for use in harsh environments.

Spare parts

INO32 Power switch, incl. cabling
90632 Power supply unit, 24VDC/60W

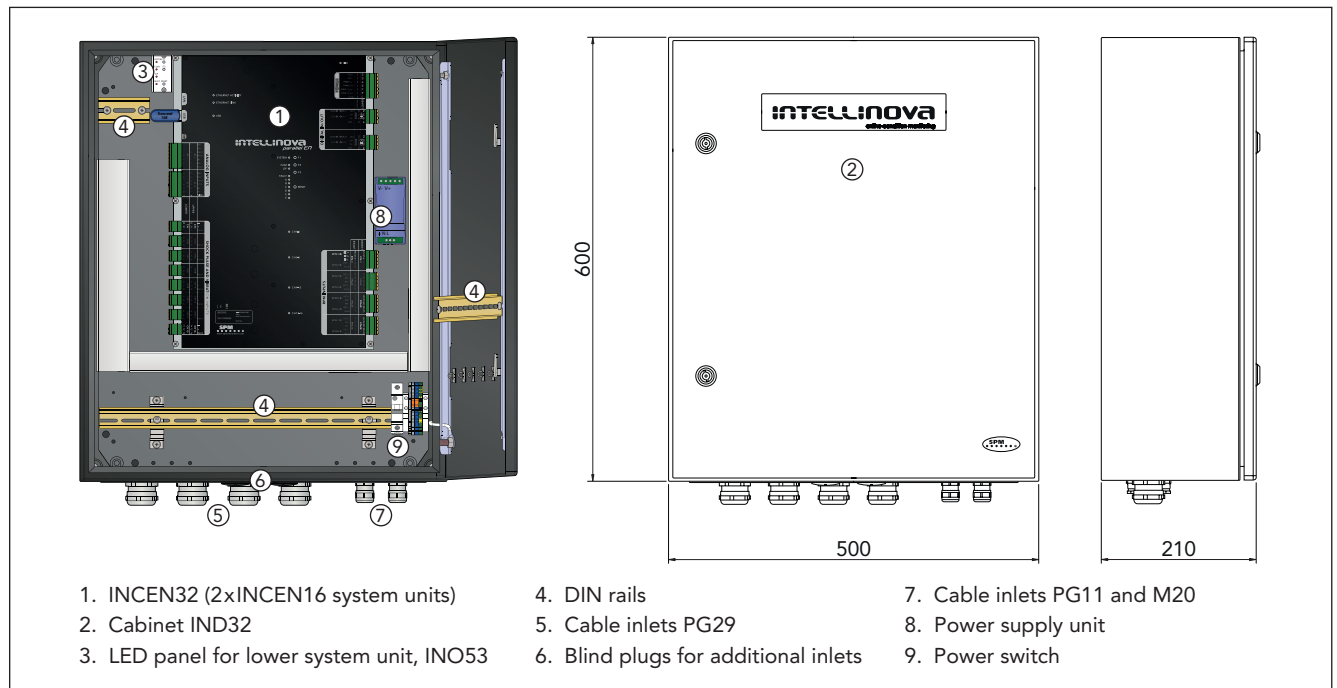
Accessories

INO16 Relay for external alarm, 2 poles (TD-290)
INO33 Displacement signal interface (TD-549)
INO34 Wireless 4G router* (TD-550)
INO35 Gigabit switch* (TD-503)
INO57 Wi-Fi communication** (TD-656)
INO59 Wi-Fi antenna for INO57 (TD-656)
81325 Mounting braces, 4 pcs
81515 Cable inlet, M25 for cable 4x5.5 mm, IP66, Polyamide.

* INO34 and INO35 cannot be used together

** Can only be included when ordering a system unit. Can not be ordered afterwards.

Intellinova® Parallel EN – System INSEN32



INSEN32 is an advanced online system for continuous monitoring of machine condition. The Intellinova system is comprised of INCEN32 (2xINCEN16 system units), cabinet IND32, internal cabling, and terminals for power supply. It is complete with a power supply unit, power switch and DIN rail.

By collecting vibration and/or shock pulse readings from up to 32 parallel channels and 16 RPM channels, the system allows condition measurement on complex applications. Eight digital inputs and eight digital outputs can be used for connection to machine stop, alarm light, or other external devices, directly or via external relays. The system also has eight analog inputs which can be used to accept process parameters.

Technical specifications

Design, enclosure:	powder-coated steel, IP65
Power supply unit:	100-240VAC/24VDC, 60W, 50-60 Hz
Cable channels:	3 pcs, plastic
Cable inlets:	4xPG29 (18034) 1xPG11 (15885) 2xM20 (18122)
Weight:	approx. 22 kg (49 lbs)

Part numbers

INSEN32	Intellinova Parallel EN system (INCEN32+IND32)
INCEN32	2xINCEN16 system units
IND32	Cabinet in powder-coated steel, 500x600x210 mm (19.7x23.6x8.3 in)

Spare parts

INO53	LED panel for the lower system unit
INO32	Power switch, incl. cabling
90632	Power supply unit, 24VDC/60W

The system communicates with Condmaster Ruby via standard Ethernet. The Group Measurement function enables multiple measuring assignments to start simultaneously, often using a trigger. In Condmaster, the Live View is used for monitoring the state of all connected devices.

The system unit is equipped with a parallel measuring logic, alarm, storing, and analysis logic. It has status LED indicators and a USB connection for the setup of the system. Technical specifications for INCEN16, see *technical data sheet TD-543*. Accessories for INSEN32, see *technical data sheet TD-289*.

IND32 is an industrial enclosure in powder-coated steel designed for encapsulation of two system units INCEN16. The cabinet, intended for wall mounting, is robust and sealed for use in harsh environments.

Accessories

INO16	Relay for external alarm, 2 poles (TD-290)
INO17	Key phasor interface, incl. 12V power supply unit*
INO33	Displacement signal interface (TD-549)
INO34	Wireless 4G router** (TD-550)
INO35	Gigabit switch** (TD-503)
INO51	Terminal blocks 72 pcs, incl. cabling
INO57	Wi-Fi communication*** (TD-656)
INO59	Wi-Fi antenna for INO57 (2 pcs needed) (TD-656)
15808	Cable inlet, PG7, for cable 2.5-6.5 mm, IP68, brass/nickel-plated, Neoprene sealing (TD-289)
15885	Cable inlet, PG11, for cable 6-11.5 mm, IP68, brass/nickel-plated, Neoprene sealing (TD-289)
18034	Cable inlet, PG29, for 8 measuring cables diam. 5.5 mm, IP65, brass/nickel-plated (TD-289)
18035	Cable inlet, PG29, diam. 16-26 mm, IP68, brass/nickel-plated (TD-289)
18122	Cable inlet, M20, for cable 4-10 mm, IP68, brass/nickel-plated, Neoprene sealing
81325	Mounting braces, 4 pcs

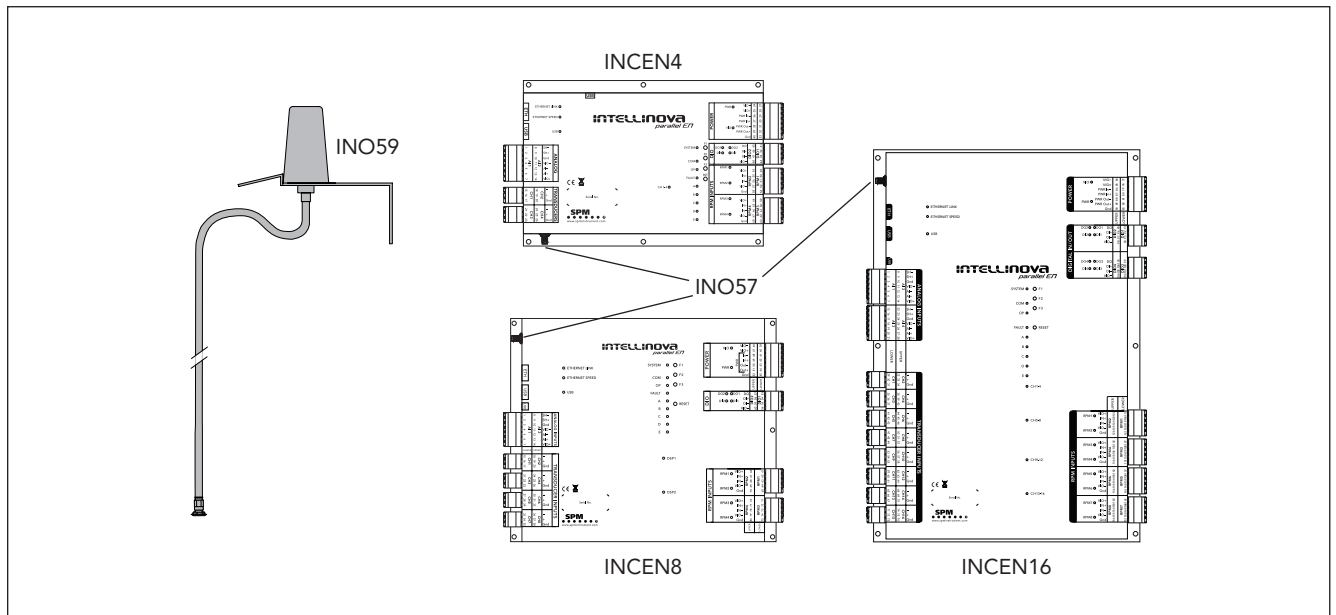
* INO17 will not fit in the cabinet if INO51 is used

** INO34 and INO35 cannot be used together

*** Only available when ordering a system, not afterwards



Intellinova® Parallel EN – Wi-Fi communication



The INO57 accessory enables Wi-Fi communication for Intellinova Parallel EN system units (INCEN4, INCEN8, and INCEN16). The associated INO59 includes an external omnidirectional antenna and a 5 m antenna cable.

For system units where INO57 is installed, only one communication connection can be used at a time: Ethernet connection (network cable) or Wi-Fi connection (INO57). Simultaneous use of Wi-Fi communication and Ethernet communication is not supported.

INO57 cannot be retrofitted. Therefore, INO57 must be ordered in connection with ordering the Intellinova Parallel EN system unit.

To use INO57, one Wi-Fi antenna per system unit is required. 2 pcs of INO59 must be ordered for INSEN32.

Only dynamic IP addressing (DHCP) is supported. Static IP is not supported.

NOTE: INO57 requires Condmaster Ruby 2022 (or later).

Technical specifications

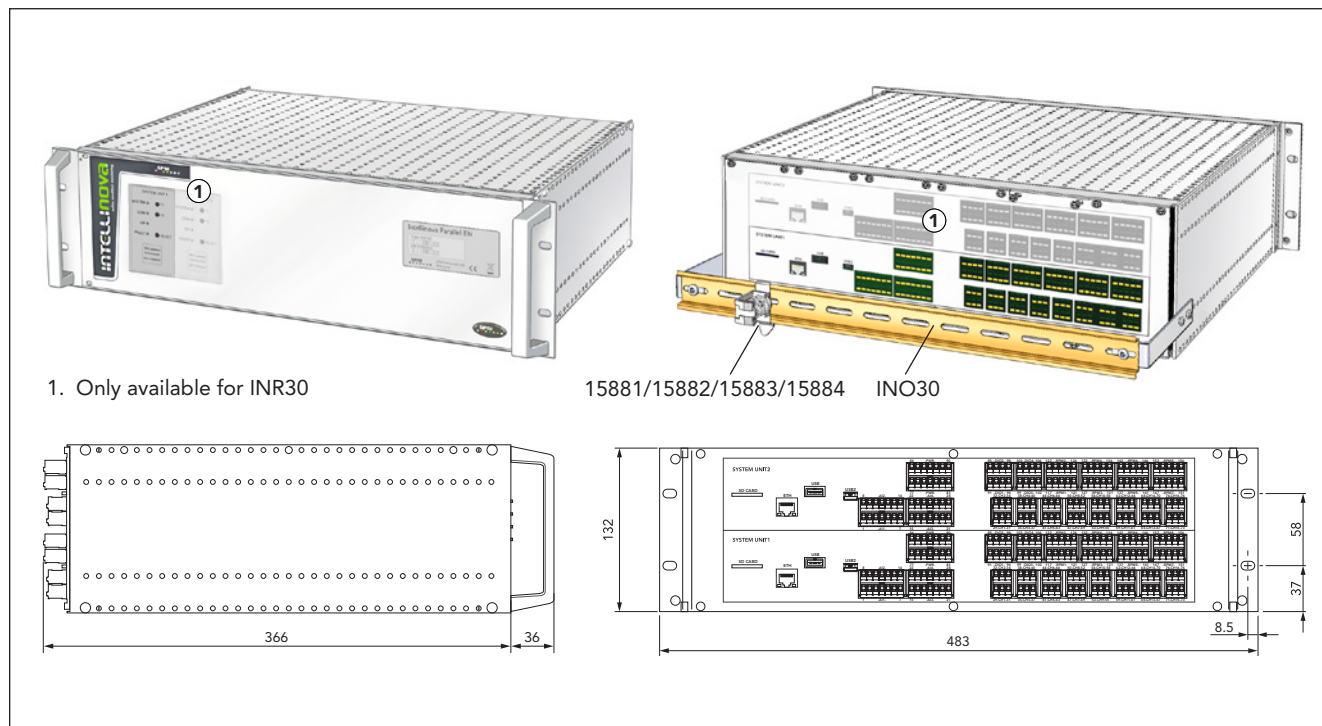
Frequency band: 2.4 GHz & 5 GHz
Security: WPA/WPA2-PSK
Wi-Fi standards: 802.11a/b/g/n/ac
IP addressing: DHCP

Part numbers

INO57 Wi-Fi communication, antenna connection
INO59 Wi-Fi antenna incl. 5 m cable for INO57



Intellinova® Parallel EN – Systems for 19" Rack



1. Only available for INR30

15881/15882/15883/15884 INO30

Intellinova Parallel EN is an advanced online system for continuous monitoring of machine condition. The Intellinova systems for 19 inch rack mounting allow either one (INR31) or two (INR30) built-in system units, INCEN16. The back panels are equipped with Ethernet connection and terminals for external power supply, analog inputs and digital inputs/outputs. INR30/INR31 has LED indicators on the front panel showing its status. Power supply unit, earth rail and clamping yokes are ordered separately. The accessories are intended for mounting on the DIN rail included in INO30.

By collecting vibration and/or shock pulse readings from up to 16/32* parallel channels and 8/16* RPM channels, the system allows condition measurement on complex applications. Four/eight* digital inputs and four/eight* digital outputs

can be used for connection to machine stop, alarm light, or other external devices, directly or via external relays. The system also has four/eight* analog inputs which can be used to accept process parameters.

The system communicates with Condmaster Ruby via standard Ethernet in a LAN network. The Group Measurement function enables multiple measuring assignments to start simultaneously, often using a trigger. In Condmaster, the Live View is used for monitoring the state of all connected devices.

The system units have parallel measuring logic, alarm, storing and analysis logic. INCEN16 has USB connection for setup of the system. Technical specifications for INCEN16, see *technical data sheet TD-543*.

*Depending on whether INR31 (first number) or INR30 (second number) is used.

Technical specifications

Design, enclosure:	Clear-Chromated Aluminium, IP20
Power supply:	12 to 35 V DC, 50 W
Operating temperature:	–20 to +55 °C (–4 to 131 °F)
Storage temperature:	–20 to +80 °C (–4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Dimensions (w x h x d):	483 (19") x 132 (3U) x 366 mm
Weight:	approx. 5.2 kg (11.5 lbs)

Part numbers

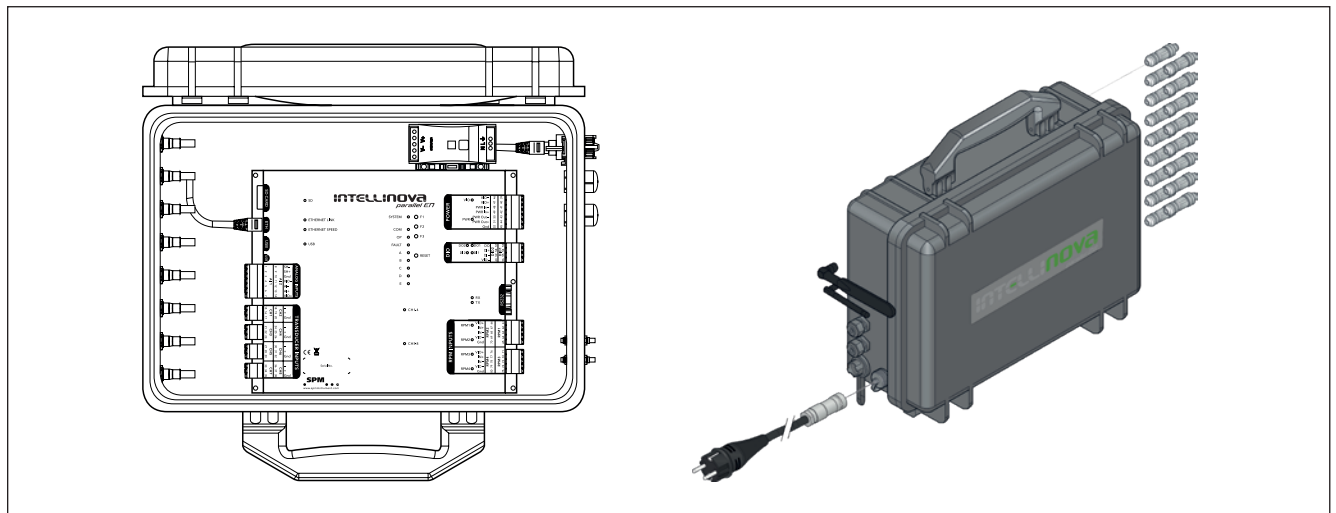
INR30	Intellinova Parallel EN rack system (2xINCEN16, rack-mounted)
INR31	Intellinova Parallel EN rack system (1xINCEN16, rack-mounted)

Options

INO16	Relay for external alarm, 2 poles (TD-290)
INO17	Key Phasor Interface, 2 channels (TD-299)
INO28	Power supply unit, 100 to 240 V, 50 W (TD-323)
INO30	Earth rail with mounting brackets, DIN
INO33	Displacement signal interface (TD-549)
INO34	Wireless 4G router (TD-550)
INO35	Gigabit switch (TD-549)
15881	Clamping yoke for earth rail, DIN, cable 3-8 mm
15882	Clamping yoke for earth rail, DIN, cable 4-13.5 mm
15883	Clamping yoke for earth rail, DIN, cable 10-20 mm
15884	Clamping yoke for earth rail, DIN, cable 15-32 mm
90419	SD card, 2 GB



Intellinova® Parallel EN – Portable system, INSEN8 P



The portable Intellinova system INSEN8 P is comprised of the system unit INCEN8 (see TD-565) mounted in a sturdy MIL standard plastic carrying case INO55 with connectors, internal measuring cables and a power supply unit. The case fits a full-blown Intellinova system, using all the same components as the non-portable version and with all the features.

INSEN8 P allows rapid installation and is ideal for test installations, temporary monitoring of critical machines, etc. The portable system can also be used as a multichannel logger with data acquisition based on various triggers when connected to a network.

The carrying case has M12 connectors for eight transducer inputs, four RPM inputs, two analog inputs, and two digital inputs/outputs. The case has exterior power supply inlet and network connector.

The Intellinova system unit is equipped with parallel measuring logic, alarm, storing and analysis logic. It has status LED indicators and USB connection for setup of the system.

Both vibration and shock pulse measurements can be performed using DuoTech® accelerometers.

Technical specifications

Design, case:	copolymer, neoprene seals, automatic purge valve, IP67
Operating temperature:	–20 to +60 °C (–4 to 140 °F)
Storage temperature:	–20 to +80 °C (–4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Input connectors:	8xM12 for condition monitoring, 4xM12 for RPM inputs, 2xM12 for analog inputs, 2xM12 for digital inputs/outputs, network connector RJ45
Power supply:	100 to 240 VAC/24VDC, 50/60 Hz, max. 10 A
Power inlet:	M12 inlet with cable connector CEE 7/7, 2 m
Dimensions (w x h x d):	464x366x176 mm (18.4x14.4x6.9 inches)
Weight:	approx. 7.5 kg (16.5 lbs) including system unit

Part numbers

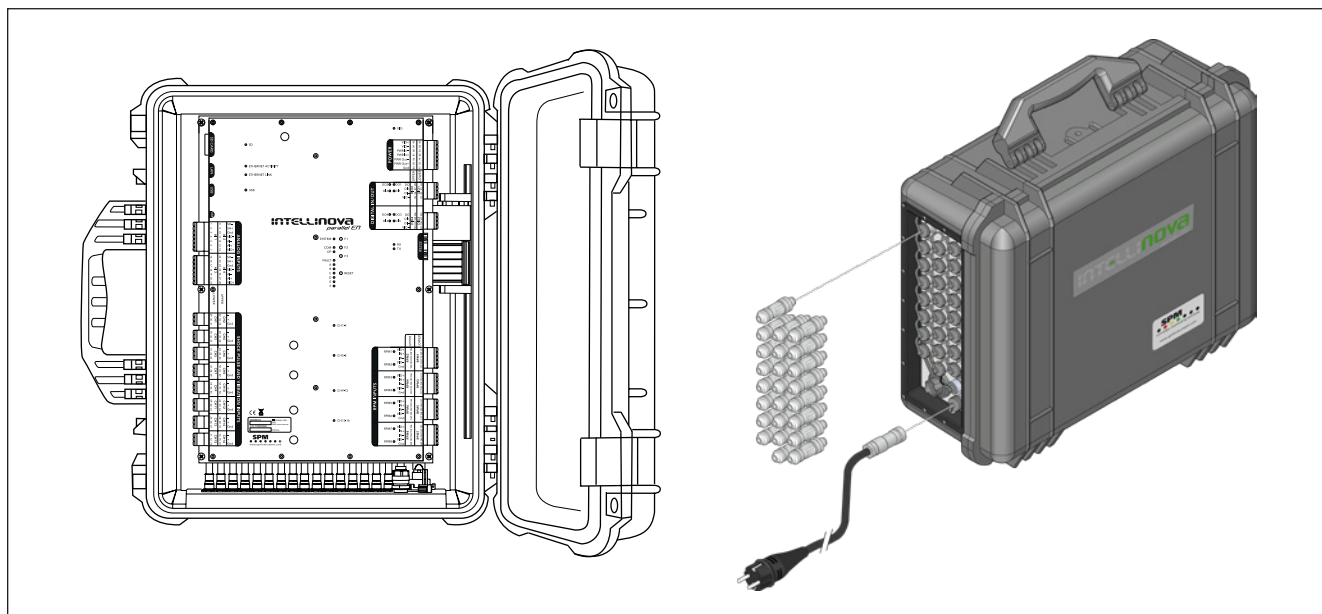
INSEN8 P	Portable online system (INCEN8+ INO55), incl. connectors, internal measuring cables, power cable EU, and power supply unit
INCEN8	System unit (TD-565)
INO55	Carrying case (excl. INCEN8)

Options

INO56	Wireless router 90679, incl. 4G and Wi-Fi antennas (TD-632)
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Intellinova® Parallel EN – Portable system



The portable system INSEN16 P is comprised of a system unit INCEN16 mounted in a sturdy MIL standard plastic carrying case INO50 with connectors, internal measuring cables and a power supply unit. The case fits a full-blown Intellinova system, using all the same components as the non-portable version and with all the features.

INSEN16 P allows rapid installation and is ideal for test installations, temporary monitoring of critical machines, etc. It can also be used as a multichannel logger with data acquisition based on various triggers when connected to a network.

The carrying case has M12 connectors for 16 transducer inputs, four RPM inputs, two analog inputs and two digital inputs/outputs. The case has exterior power supply inlet and network connector.

The system unit is equipped with parallel measuring logic, alarm, storing and analysis logic. It has status LED indicators and USB connection for setup of the system. Technical specifications for INCEN16, see *technical data sheet TD-543*.

Both vibration and shock pulse measurements can be performed using DuoTech® accelerometers.

Technical specifications

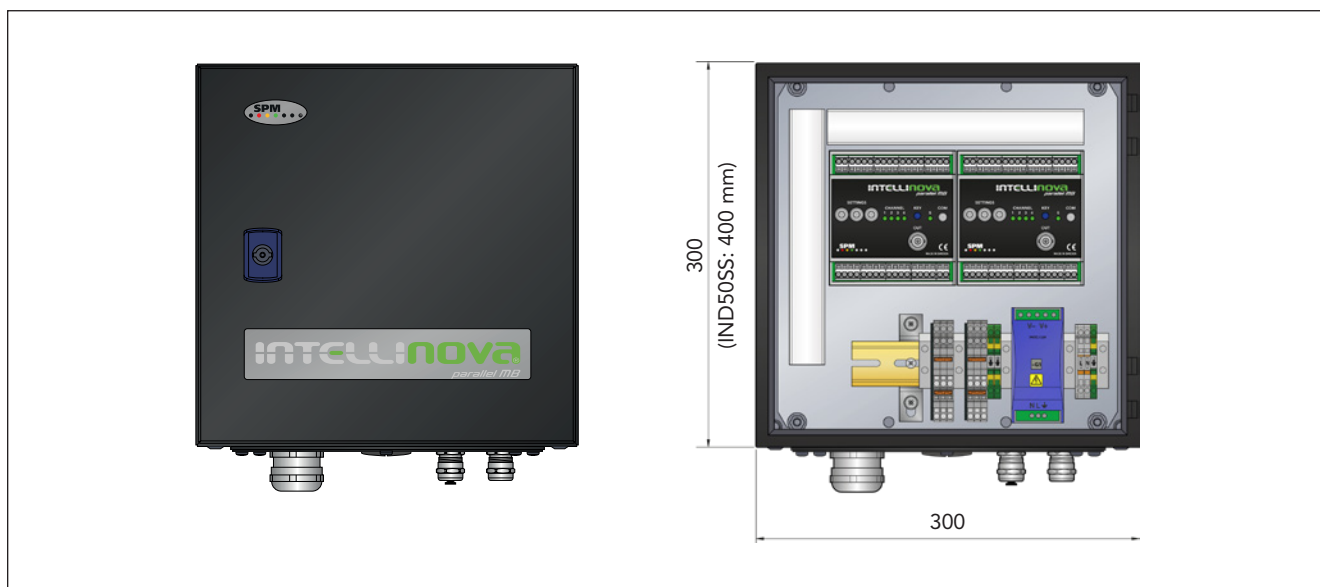
Design, case:	copolymer, neoprene seals, automatic purge valve, IP67
Operating temperature:	–20 to +60 °C (–4 to 140 °F)
Storage temperature:	–20 to +80 °C (–4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Input connectors:	16xM12 for condition monitoring, 4xM12 for RPM inputs, 2xM12 for analog inputs, 2xM12 for digital inputs/outputs, network connector RJ45
Power supply:	100 to 240 VAC/24VDC, 50/60 Hz, max. 10 A
Power inlet:	M12 inlet with cable connector CEE 7/7, 2 m
Dimensions (w x h x d):	530x437x217 mm (20.9x17.2x8.5 inches)
Weight:	approx. 10 kg (22 lbs) including system unit

Part numbers

INSEN16 P	Portable online system (INCEN16+INO50)
INCEN16	System unit (TD-543)
INO50	Case (excl. INCEN16) incl. 24 pcs M12 connectors
INO52	Wireless 4G router, omni-directional antenna 90460, connector and 10 m cable (TD-550)



Intellinova® Parallel MB – System INS50



System INS50 consists of an industrial enclosure designed for encapsulation of up to two Intellinova Parallel INSMB4V units. The cabinet is equipped with a power supply unit and terminal blocks for power connection. Measurement units and WLAN Ethernet unit or 4G router can be included in the prepared cabinet.

The cabinet, intended for wall installation, is sealed for use in harsh environments. It has a flange with cable inlets for measuring cables, power supply, and communication cables.

Intellinova Parallel MB measurement unit is described on the technical data sheet TD-517.

Technical specifications

Design, enclosure:	powder-coated steel (IND50) or stainless steel (IND50SS), IP65
Communication:	Ethernet TCP/IP, 100 Mbit
DIN rails:	for up to two INSMB4V units, plus one rail for terminals and power supply unit
Cable inlets:	2xPG29 3xPG11
Power supply unit:	100 to 240 V AC/24 V DC, 60 W, 50 to 60 Hz
Terminal blocks:	3 pcs for connection of the power supply unit and 3 pcs for connection of Modbus and internal power supply unit
Operating temperature:	0 to +50 °C (32 to 122 °F)
Storage temperature:	–20 to +70 °C (–4 to 158 °F)
Relative humidity:	10% to 90% (non-condensing)
Cable channels:	2 pcs, plastic
Dimensions (w x h x d):	300x300x210 mm (IND50) 300x400x210 mm (IND50SS)
Weight:	approx. 11 kg (IND50) or 9 kg (IND50SS) incl. Intellinova Parallel MB measurement units

Part numbers

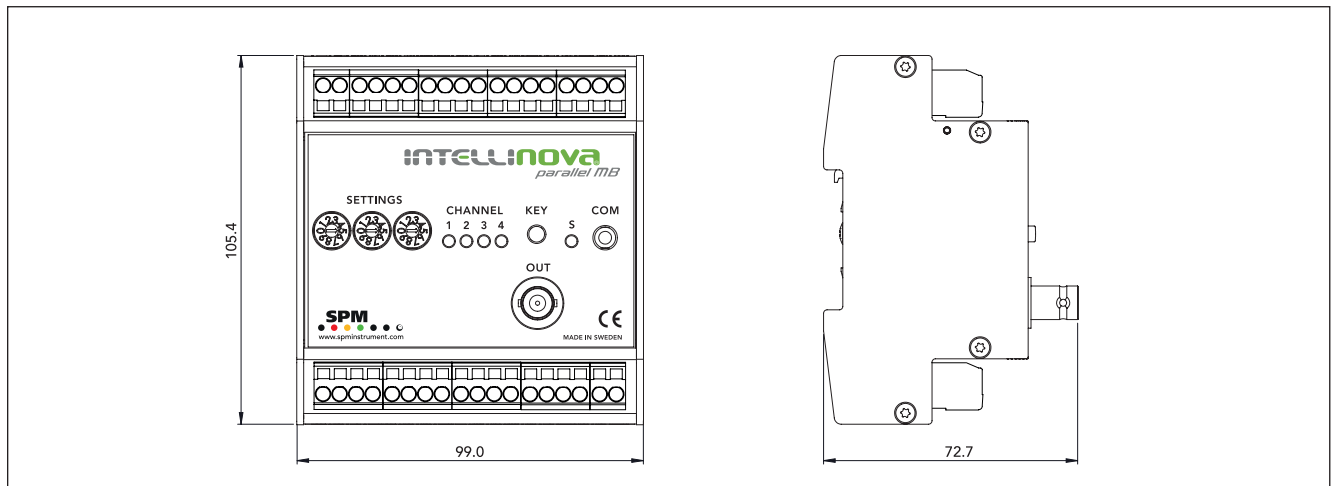
IND50	Cabinet in powder-coated steel, incl. power supply unit and cabling
IND50SS	Cabinet in stainless steel, incl. power supply unit and cabling

Options

INO40	INSMB4V unit(s) incl. cabling, installed in cabinet
INO47	WLAN Ethernet unit, installed in cabinet
INO48	4G router incl. cabling, installed in cabinet (TD-550)
PRO230	Offline configuration software
15484	Communication cable, USB - 3.5 stereo plug
90458	External antenna cable with connectors, 10 m
90460	Omni-directional antenna for INO48
90500	External antenna cable with connectors, 0.75 m
90580	External antenna cable with connectors, 2 m
90598	Antenna and 5 m cable for INO47



Intellinova® Parallel MB VIB/Dual technology – INSMB4V



Intellinova Parallel MB VIB/Dual technology is a small unit for parallel measurement on four channels, monitoring operating condition by means of:

- Vibration measurement (ACC, VEL, DISP rms, HD ENV)
- Symptom values (BPFO etc.)
- Spectrum
- Time signal
- Shock pulse measurement incl. lubrication condition (HDm/HDc, LR/HR)

The ACC, VEL and DISP rms values are measured within a user defined frequency range. The symptoms are defined by the user as a fundamental frequency and its harmonics where sidebands can be included. A spectrum or time signal can also be generated for further processing. A cumulative moving average is calculated for all measured parameters and symptoms. These averages can also be used to trigger alarms. Both vibration and shock pulse measurements can be performed using DuoTech accelerometers that use a standard IEPE interface.

A DIO (Digital Input Output) configured as an input can be used to activate a measurement. Measuring results and symptom values are compared with an alarm level set up and can activate any of the 6 DIOs which can control, e.g. a relay. Alarms can be set with or without delay, based either on time or number of measurements. The unit can be set up to repeat its configured measurements as often as possible, and a LED for every channel indicates the status of the latest measurement. Two RPM inputs can be used for measurements based on order tracking.

The unit can operate in online or offline mode, selected by rotary switches on the front. When set to online mode, the unit operates as a Modbus RTU where the Modbus master configures the measurements and reads the result. When run in offline mode, the measurements are defined in an internal text file created in the configuration software PRO230. The text file can contain a large number of unique configurations selected with the rotary switches on the front panel. The text file is transferred to the unit using the COM port, which is also used for updating the firmware.



SPM Instrument AB • Box 504 • SE-645 25 Strängnäs • Sweden
Tel +46 152 22500 • info@spminstrument.se • www.spminstrument.com

Technical specifications

Measuring channels:	4, measuring in parallel
Measuring range, VIB:	> 50 g peak-peak (using 100 mV/g transducers)
Measuring range, SPM:	0 to 75 dB
Resolution:	7 µg /√Hz 0.5-40000 Hz using 100 mV/g transducers
Spectrum lines:	400, 800, 1600, 3200, 6400, 12800
Transducer type, VIB:	SLD, SLC DuoTech or standard IEPE type accelerometer
Transducer type, SPM:	SLC DuoTech accelerometer
RPM channels:	RPM 1 and RPM 2 (parallel meas.), proximity switches, 1-120 000 rpm (when 1 pulse/rev.)
Digital In/Out:	6, configurable as input or output
Digital output:	24V/0.8A per channel, max 3A all channels
Alarm delay type 1:	0 to 1000 measurements
Alarm delay type 2:	0 to 1800 s (= 30 min)
Status indicators:	green/red LED for every channel indicating condition status and one LED for overall status
Communication:	Modbus RTU
Isolated output:	BNC connector that the user can select to connect to channel 1 - 4
Power supply:	24 VDC (15 to 36 V)
Power consumption:	<3 W
Temperature range:	0 to 50 °C
Enclosure:	aluminum
Mounting:	DIN rail
Dimensions:	105.4 x 99.0 x 72.7 mm
Weight:	370 g
Cable lengths:	VIB, SPM, RPM, DIO <30 m

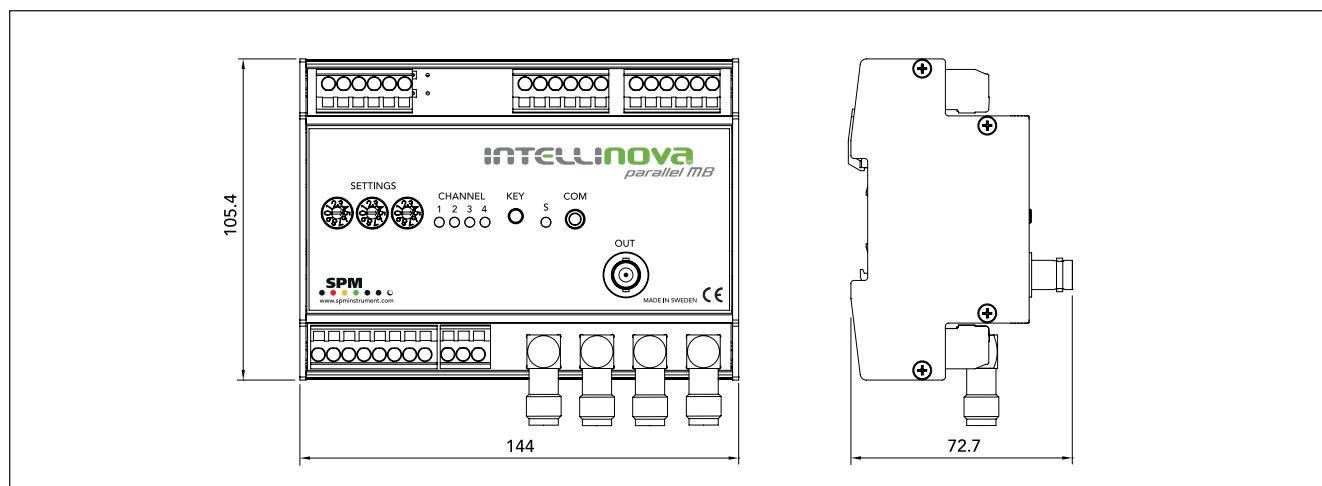
Accessories

- 15484 Communication cable, USB -3.5 stereo plug
- PRO230 Offline configuration software



Technical data are subject to change without notice.
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Intellinova® Parallel MB SPM – INSMB4S



Intellinova Parallel MB SPM is a small unit for parallel measurement on four channels, monitoring operating condition by means of:

- Shock pulse measurement incl. lubrication condition (HDm/HDc, LR/HR, dBm/dBc)
- Symptom values (BPFO, etc.)
- Spectrum
- Time signal

Shock pulse values are raw values that after normalization show the status of e.g. a bearing. Symptom is an rms value based on a fundamental frequency and a number of harmonics with or without sidebands. A spectrum or a time signal can also be generated for further processing. A cumulative moving average is calculated for all measured parameters and symptoms. These averages can also be used to trigger alarms.

A DIO (Digital Input Output) configured as an input can be used to activate a measurement. Alarms can be set with or without delay, based either on time or number of measurements. Measuring results and symptom values are compared with the alarm level set up and can activate any of the 6 DIOs that can control a relay. The unit can be set up to repeat its configured measurements as often as possible, and the status of the latest reading is indicated with a LED for every channel. Two RPM inputs can be used for measurements based on order tracking.

The unit can operate in online or offline mode, selected by rotary switches on the front. When set to online mode, the unit operates as a Modbus RTU where the Modbus master configures the measurements and reads the result. When run in offline mode, the measurements are defined in an internal text file, which can contain a large number of unique configurations selected with the rotary switches. The text file is transferred to the unit using the COM port, which is also used for updating the firmware.

Technical specifications

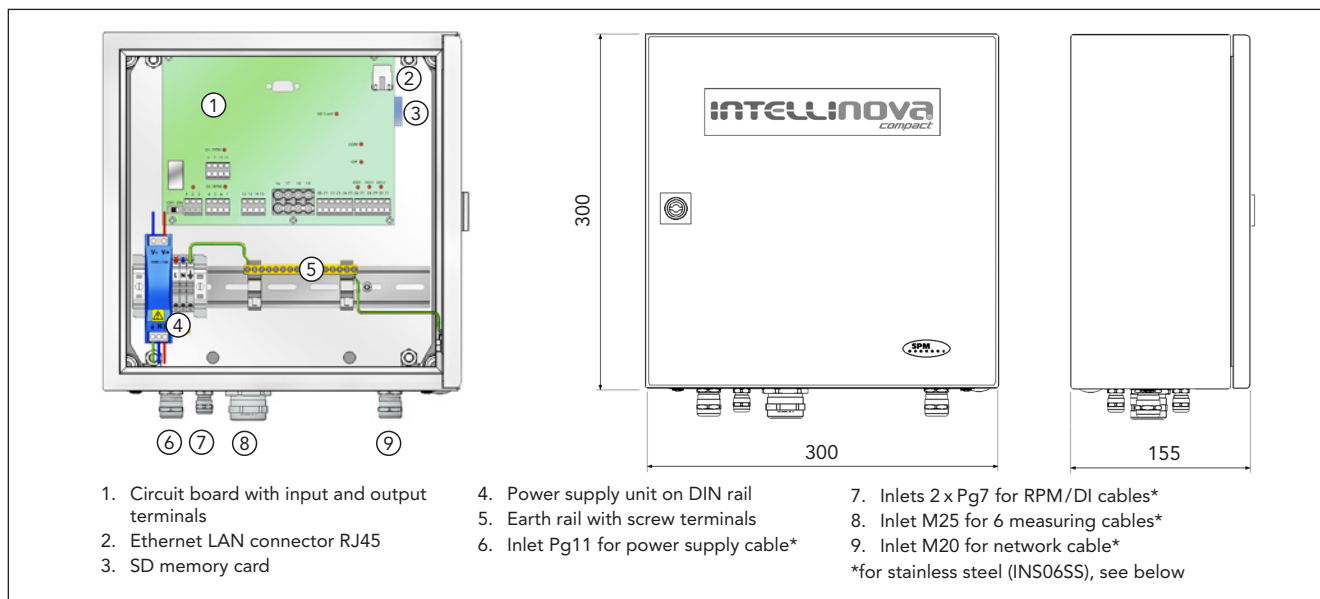
Measuring channels:	4, measuring in parallel, TNC connectors
Measuring range:	–20 to 75 dB
Spectrum lines:	400, 800, 1600, 3200, 6400, 12800
Transducer type:	SPM 44000 series
RPM channels:	RPM1 and RPM2 (parallel meas.), proximity switches, 1-120 000 rpm (when 1 pulse/rev.)
DIO:	6, configurable as input or output
Digital output:	24 V/0.8 A per channel, max 3 A all channels
Alarm delay type 1:	0 to 1000 measurements
Alarm delay type 2:	0 to 1800 s (=30 min)
Status indicators:	green/red LED for every channel indicating condition status and one LED for overall status
Communication:	Modbus RTU
Isolated output:	BNC connector that the user can select to connect to channel 1-4
Voltage supply:	24 VDC (15-36V, not distributed DC supply)
Power consumption:	5 W
Temperature range:	–40 to +70 °C
Enclosure:	aluminum
Mounting:	DIN rail
Dimensions:	144x105.4x72.7 mm
Weight:	550 g
Cable lengths:	SPM, RPM, DIO <30 m

Accessories

- 15484 Communication cable, USB -3.5 stereo plug
- PRO230 Offline configuration software



Intellinova® Compact – System Unit INS06



The system unit INS06 in the Intellinova Compact series is a small and advanced measuring unit for continuous monitoring of machine condition. The system unit is complete with power supply unit, DIN rail with screw terminals for earth connections and space for optional equipment. The enclosure is intended for wall mounting and sealed IP66 for use in harsh environments.

INS06 measures bearing condition on four channels, vibration on two channels and analog signals on three channels. Two RPM transducers can be connected and linked to measuring assign-

Technical specifications

Design, enclosure:	enamelled steel (INS06) or stainless steel (INS06SS), IP66
Memory:	SD card, 2 GB
LAN interface:	Ethernet TCP/IP, 10 Mbps
Power supply unit:	100 to 240 VAC, Output 12 VDC, 1.5 A
Operating temperature:	-20 to +60 °C (-4 to 140 °F)
Storage temperature:	-20 to +80 °C (-4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Dimensions (w x h x d):	INS06: 300x300x155 mm (11.8x11.8x6.1 in) INS06SS: 380x380x210 mm (15x15x8.3 in)
Cable inlets:	INS06: 2xPg7, Pg11, M25, M20 INS06SS: 4xM16, 2xM25, M20
Weight:	INS06: approx. 6.7 kg (14.8 lbs) INS06SS: approx 11.7 kg (26 lbs)

Bearing Monitoring

Measuring methods:	SPM HD, LR/HR HD
Measuring channels:	4, multiplexing
Measuring range SPMHD:	-20 to 80 dBsv
Measuring range LR/HR:	-19 to 80 dBsv
Amplitude scale unit:	HDm/HDc, LR/HR, Time Signal HD, SPM Spectrum HD
Transducer line test:	TLT test
Input connectors:	for coaxial cables with connector 12775
Transducer type:	SPM 44000 series, only for coaxial cables

Vibration Monitoring

Measuring methods:	ISO 2372, ISO 10816, HD ENV, FFT with symptoms, EVAM
Measuring channels:	2, multiplexing
Frequency range:	DC to 40 kHz
Measuring range:	≥60g peak-peak (using 100mV/g transd.)
Resolution:	0.0015m/s ² RMS (using 100mV/g transd.)

ments set up in Condmaster®Ruby. The unit has three digital outputs for connection to PLC or via external relays to machine stop, external warning lamp, etc.

The unit is equipped with multiplexing measuring logic, alarm, storing and analysis logic. It is connected via standard Ethernet in a LAN network. The circuit board is equipped with status LED indicators and an SD memory card used for data buffering and setup of the unit.

Measurem. windows:	Rectangle, Hanning, Hamming, Flat Top
Averages:	time synch, FFT linear, FFT exponential, FFT peak-hold
Spectrum lines:	400, 800, 1600, 3200, 6400, 12800
Transducer type:	SLD144, SLC144 DuoTech or IEPE (ICP®) type transducers with a nominal bias output voltage of 10 to 14 VDC

Digital Inputs

Digital/RPM inputs:	2 channels, multiplexing
RPM transducer type:	proximity switches, supply 12 V DC
RPM measuring range:	0.1 to 120000 rpm (when 1 pulse/rev.)

Digital Outputs

Digital outputs:	3, open collector, user configurable
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Analog Inputs

Input channels:	3
Measurement range:	0 to 20 mA
Resolution:	0.01 mA (12 bit)
Meas. accuracy:	± (1% +0.1 mA)
Input resistance:	current 100 Ω
Cable length:	max. 100 m

Part numbers

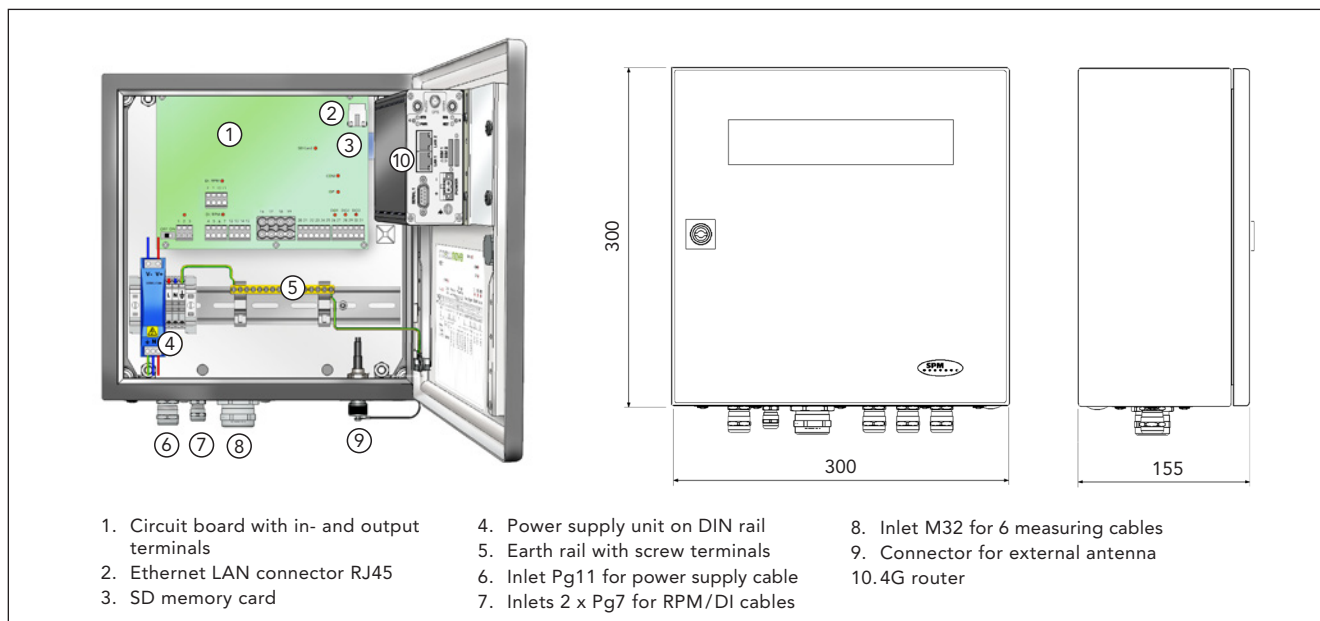
INS06	Intellinova Compact system unit, enamelled steel
INS06SS	Intellinova Compact system unit, stainless steel

Accessories

12775	Connector for coaxial cable
IND09	Stand for portable system unit (TD-349)
IND14	Relay for external alarm, 2 poles (TD-386)
IND19	Magnets for wall mounting, 3 pcs
81444	Mounting braces for wall mounting, 4 pcs.
90015	Rogowski coil for current measurement (TD-335)



Intellinova® Compact – System Unit INS06W



The system unit INS06W in the Intellinova Compact series is a small and advanced measuring unit for continuous monitoring of machine condition. It is complete with power supply unit, 4G router, external antenna, DIN rail with screw terminals for earth connections and space for optional equipment. The enclosure, intended for wall mounting, is robust and sealed for use in harsh environments.

INS06W measures bearing condition on four channels, vibration on two channels and analog signals on three channels. Two RPM transducers can be connected and linked to measuring

assignments set up in Condmaster®. The unit has three digital outputs for connection to PLC or via external relays to machine stop, external warning lamp, etc. The circuit board is equipped with status LED indicators and a SD memory card used for data buffering and setup of the system unit.

The built-in 4G router is designed to provide remote connectivity across mobile networks. It is connected via a 10/100 Ethernet switch and supports a wide variety of wireless standards. Specifications for the 4G router 90645 is stated on the technical data sheet TD-550.

Technical specifications

Design, enclosure:	enamelled steel, IP66
Memory:	SD card, 2 GB
LAN interface:	Ethernet TCP/IP, 10 Mbps
Wireless:	4G router incl. omni-directional antenna and 0.75 m antenna cable (TD-550)
Power supply unit:	100 to 240 VAC, Output 12 VDC, 1.5 A
Operating temperature:	-20 to +60 °C (-4 to 140 °F)
Storage temperature:	-20 to +80 °C (-4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Dimensions (w x h x d):	300 x 300 x 155 mm (11.8 x 11.8 x 6.1 in)
Weight:	approx. 8.2 kg (18 lbs)

Bearing Monitoring

Measuring methods:	SPM HD, LR/HR HD
Measuring channels:	4, multiplexing
Measuring range SPM HD:	-20 to 80 dBsv
Measuring range LR/HR:	-19 to 80 dBsv
Amplitude scale unit:	HDm/HDc, LR/HR, Time Signal HD, SPM Spectrum HD
Transducer line test:	TLT test
Input connectors:	for coaxial cables with connector 12775
Transducer type:	SPM 44000 series, only for use with coaxial cable

Vibration Monitoring

Measuring methods:	ISO 2372, ISO 10816, HD ENV, FFT with symptoms, EVAM
Measuring channels:	2, multiplexing
Frequency range:	DC to 40 kHz
Measuring range:	≥60g peak-peak (using 100mV/g transducer)

Resolution:	0.0015 m/s ² RMS (using 100 mV/g transducer)
Measur. windows:	Rectangle, Hanning, Hamming, Flat Top
Averages:	time synch, FFT linear, FFT exponential, FFT peak-hold
Spectrum lines:	400, 800, 1600, 3200, 6400, 12800
Transducer type:	SLD144, SLC144 DuoTech or IEPE (ICP®) type transducers with a nominal bias output voltage of 10 to 14 V DC

Digital Inputs

Digital/RPM inputs:	2 channels, multiplexing
RPM transducer type:	proximity switches, supply 12 V DC
RPM measuring range:	0.1 to 120 000 rpm (when 1 pulse/rev.)

Digital Outputs

Digital outputs:	3, open collector, user configurable
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Analog Inputs

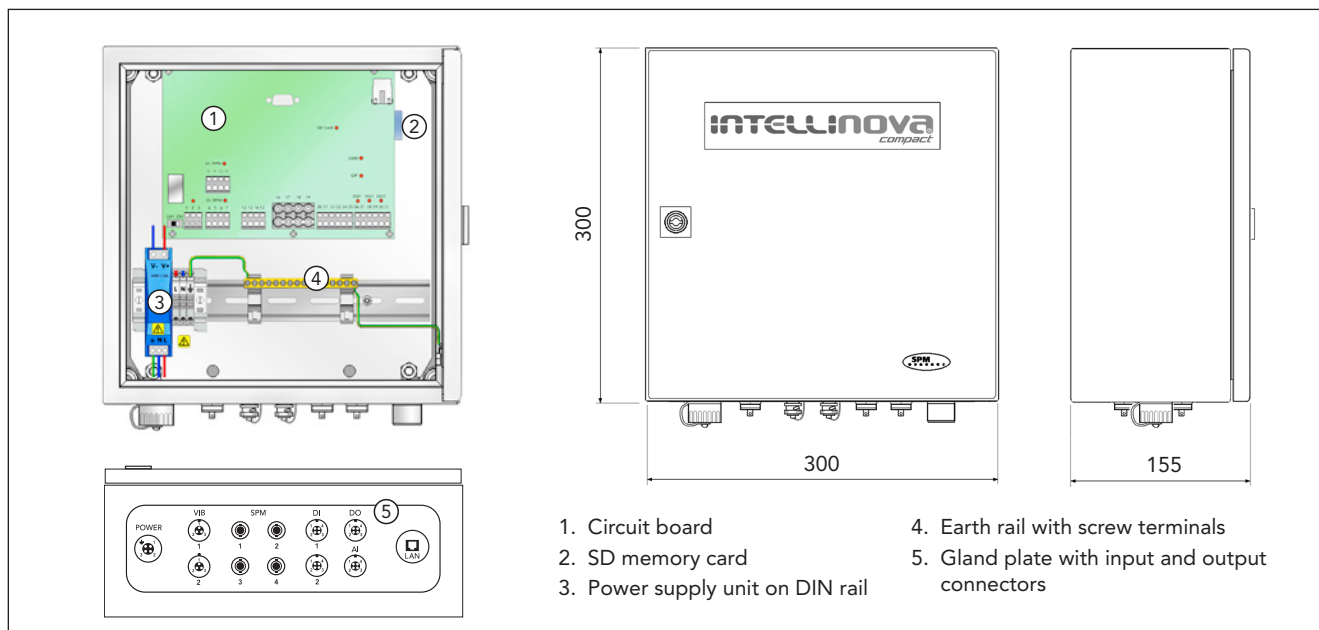
Input channels:	3
Measurement range:	0 to 20 mA
Resolution:	0.01 mA (12 bit)
Meas. accuracy:	±(1% +0.1 mA)
Input resistance:	current 100 Ω
Cable length:	max. 100 m

Accessories

12775	Connector for coaxial cable
IND09	Stand for portable system unit (TD-349)
IND14	Relay for external alarm, 2 poles (TD-386)
IND19	Magnets for wall mounting, 3 pcs
81444	Mounting braces for wall mounting, 4 pcs.
90015	Rogowski coil for current measurement (TD-335)
90458	Antenna cable, 10 m



Intellinova® Compact – System Unit INS06-C



Intellinova Compact INS06-C is a small and advanced measuring unit for continuous monitoring of machine condition. INS06-C has the same specifications as INS06, except that it is equipped with input and output connectors on the gland plate. The unit is complete with power supply unit, internal wiring and DIN rail with space for optional equipment. The enclosure is robust and sealed IP66 for use in harsh environments.

INS06-C measures bearing condition on four channels, vibration on two channels and analog signals on three channels. Two

RPM transducers can be connected and linked to measuring assignments set up in Condmaster® Ruby. The unit has three digital outputs for connection to PLC or via external relays to machine stop, external warning lamp, etc.

The unit is equipped with multiplexing measuring logic, alarm, storing and analysis logic. It is connected via standard Ethernet in a LAN network. The circuit board is equipped with status LED indicators and an SD memory card used for data buffering and setup of the unit.

Technical specifications

Design, enclosure:	enamelled steel, IP66
Memory:	SD card, 2 GB
LAN interface:	Ethernet TCP/IP, 10 Mbps
LAN connector:	RJ45 BULGIN PX0834/B
Power supply unit:	100 to 240 VAC, Output 12 VDC, 1.5 A
Power supply connector:	AMPHENOL C16-1 3p+EP
Operating temperature:	-20 to +60 °C (-4 to 140 °F)
Storage temperature:	-20 to +80 °C (-4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Dimensions (w x h x d):	300 x 300 x 155 mm (11.8 x 11.8 x 6.1 in)
Weight:	approx. 6.7 kg (14.8 lbs)

Bearing Monitoring

Measuring method:	SPM HD, LR/HR HD
Measuring channels:	4, multiplexing
Measuring range SPM HD:	-20 to 80 dBsv
Measuring range LR/HR:	-19 to 80 dBsv
Amplitude scale unit:	HDm/HDc, LR/HR, Time Signal HD, SPM Spectrum HD
Transducer line test:	TLT test
Input connectors (4):	BNC
Transducer type:	SPM 44000 series, only for use with coaxial cables

Vibration Monitoring

Measuring methods:	ISO 2372, ISO10816, HD ENV, FFT with symptoms, EVAM
Measuring channels:	2, multiplexing
Frequency range:	DC to 40 kHz
Measuring range:	≥60g peak-peak (using 100mV/g transducer)
Resolution:	0.0015m/s ² RMS (using 100mV/g transducer)

Measur. windows:	Rectangle, Hanning, Hamming, Flat Top
Averages:	time synch, FFT linear, FFT exponential, FFT peak-hold
Spectrum lines:	400, 800, 1600, 3200, 6400, 12800
Input connectors (2):	LEMO 1K 3-pin
Transducer type:	SLD144, SLC144 DuoTech or IEPE (ICP®) type transducers with a nominal bias output voltage of 10 to 14 VDC

Digital Inputs DI

Digital inputs on CBA:	2 channels, multiplexing
RPM transducer type:	proximity switches, supply 12 V DC
RPM measuring range:	0.1 to 120000 rpm (when 1 pulse/rev.)
Input connectors (2):	LEMO 1K 4-pin

Digital Outputs DO

Digital outputs on CBA:	3, open collector, user configurable
Output connector (1):	LEMO 1K 4-pin for 2 DO channels

Analog Inputs AI

Input channels on CBA:	3
Measurement range:	0 to 20 mA
Resolution:	0.01 mA (12 bit)
Meas. accuracy:	± (1% +0.1 mA)
Input resistance:	current 100 Ω
Cable length:	max. 100 m
Input connector (1):	LEMO 1K 4-pin for 1 AI channel

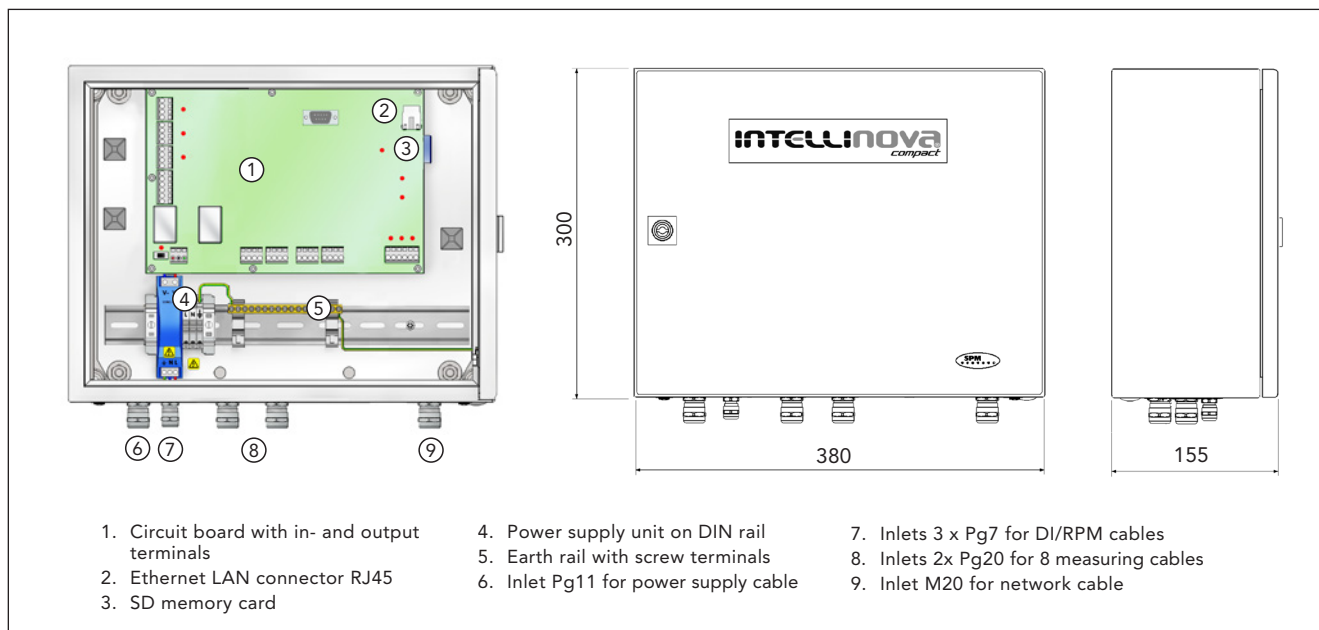
Accessories

IND09	Stand for portable system unit (TD-349)
IND14	Relay for external alarm, 2 poles (TD-386)
IND19	Magnets for wall mounting, 3 pcs
81444	Mounting braces for wall mounting, 4 pcs.
90015	Rogowski coil for current measurement (TD-335)

Suitable cables and connectors, see TD-398.



Intellinova® Compact – System Unit INS08V



The system unit INS08V in the Intellinova Compact series is a small and advanced measuring unit for continuous monitoring of machine condition. The system unit is complete with power supply unit, DIN rail with screw terminals for earth connections and space for optional equipment. The enclosure is intended for wall mounting and sealed IP66 for use in harsh environments.

INS08V measures vibration on eight channels and analog signals on three channels. Three RPM transducers can be connected and linked to measuring assignments set up in Condmaster®.

The unit has three digital outputs for connection to PLC or via external relays to machine stop, external warning lamp, etc.

The unit is equipped with multiplexing measuring logic, alarm, storing and analysis logic. It is connected via standard Ethernet in a LAN network. The circuit board is equipped with status LED indicators and an SD memory card used for data buffering and setup of the system unit.

Both vibration and shock pulse (HDm/HDc) measurements can be performed using DuoTech® accelerometers.

Technical specifications

Design, enclosure:	enamelled steel (INS08V) or stainless steel (INS08VSS), IP66
Memory:	SD card, 2 GB
LAN interface:	Ethernet TCP/IP, 10 Mbps
Power supply unit:	100 to 240 VAC, Output 12 VDC, 1.5 A
Operating temperature:	-20 to +60 °C (-4 to 140 °F)
Storage temperature:	-20 to +80 °C (-4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Dimensions (w x h x d):	INS08V: 380x300x155 mm (15x11.8x6.1 in) INS08VSS: 380x380x210 mm (15x15x8.3 in)
Weight:	INS08V: approx. 8.2 kg (18 lbs) INS08VSS: approx. 11.7 kg (26 lbs)

Vibration Monitoring

Measuring methods:	ISO 2372, ISO10816, HD ENV, FFT with symptoms, EVAM
Measuring channels:	8, multiplexing
Frequency range:	DC to 40 kHz
Measuring range:	≥60g peak-peak (using 100mV/g transducer)
Resolution:	0.0015 m/s ² RMS (using 100mV/g transducer)
Measur. windows:	Rectangle, Hanning, Hamming, Flat Top
Averages:	time synch, FFT linear, FFT exponential, FFT peak-hold
Spectrum lines:	400, 800, 1600, 3200, 6400, 12800
Transducer type:	SLD144, SLC144 DuoTech or IEPE (ICP®) type transducers with a nominal bias output voltage of 10 to 14 VDC

Digital Inputs

Digital/RPM inputs:	3 channels, multiplexing
RPM transducer type:	proximity switches, supply 12 V DC
RPM measuring range:	0.1 to 120 000 rpm (when 1 pulse/rev.)

Digital Outputs

Digital outputs:	3, open collector, user configurable
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Analog Inputs

Input channels:	3
Measurement range:	0 to 20 mA
Resolution:	0.01 mA (12 bit)
Meas. accuracy:	± (1% +0.1 mA)
Input resistance:	current 100 Ω
Cable length:	max. 100 m

Part numbers

INS08V	Intellinova Compact system unit, enamelled steel
INS08VSS	Intellinova Compact system unit, stainless steel

Accessories

IND08	Stand for portable system unit (TD-349)
IND14	Relay for external alarm, 2 poles (TD-386)
IND19	Magnets for wall mounting, 3 pcs
81444	Mounting braces for wall mounting, 4 pcs.
90015	Rogowski coil for current measurement (TD-335)

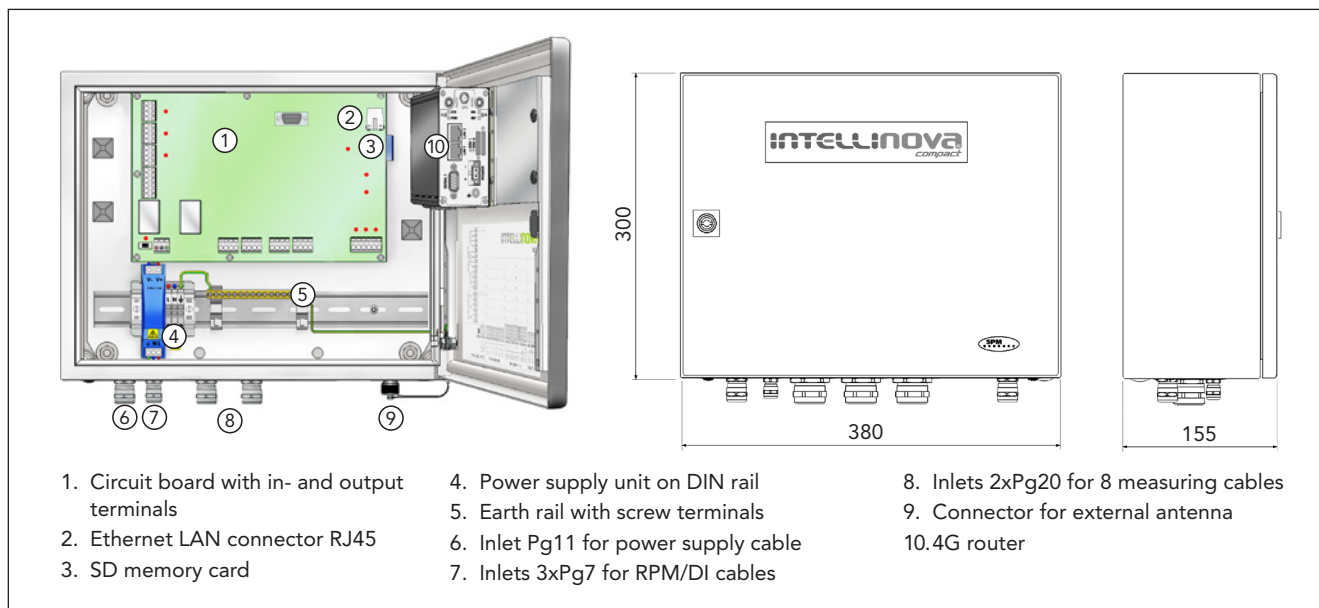


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Intellinova® Compact – System unit INS08VW



The system unit INS08VW in the Intellinova Compact series is a small and advanced measuring unit for continuous monitoring of machine condition. It is complete with power supply unit, 4G router, external antenna, DIN rail with screw terminals for earth connections and space for optional equipment. The enclosure, intended for wall mounting, is robust and sealed for use in harsh environments.

INS08VW measures vibration on eight channels and analog signals on three channels. Up to three RPM transducers can be connected and linked to measuring assignments set

up in Condmaster®. The unit has three digital outputs for connection to PLC or via external relays to machine stop, external warning lamp, etc. The circuit board is equipped with status LED indicators and an SD memory card used for data buffering and setup of the system unit.

The built-in 4G router is designed to provide remote connectivity across mobile networks. It is connected via a 10/100 Ethernet switch and supports a wide variety of wireless standards. Specifications for the 4G router 90645 is stated on the technical data sheet TD-550.

Technical specifications

Design, enclosure:	enamelled steel, IP66
Memory:	SD card, 2 GB
LAN interface:	Ethernet TCP/IP, 10 Mbps
Wireless:	4G router incl. omni-directional antenna and antenna cable (TD-550)
Power supply unit:	100 to 240 VAC, Output 12 VDC, 1.5 A
Operating temp.:	-20 to +60 °C (-4 to 140 °F)
Storage temperature:	-20 to +80 °C (-4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Dimensions (w x h x d):	380x300x155 mm (15x11.8x6.1 in)
Weight:	approx. 8.7 kg (19.2 lbs)

Vibration Monitoring

Measuring methods:	ISO 2372, ISO10816, HD ENV, FFT with symptoms, EVAM
Measuring channels:	8, multiplexing
Frequency range:	DC to 40 kHz
Measuring range:	≥60g peak-peak (using 100mV/g transducer)
Resolution:	0.0015m/s ² RMS (using 100mV/g transducer)
Measur. windows:	Rectangle, Hanning, Hamming, Flat Top
Averages:	time synch, FFT linear, FFT exponential, FFT peak-hold
Spectrum lines:	400, 800, 1600, 3200, 6400, 12800
Transducer type:	SLD144, SLC144 DuoTech or IEPE (ICP®) type transducers with a nominal bias output voltage of 10 to 14 V DC

Digital Inputs

Digital/RPM inputs:	3 channels, multiplexing
RPM transducer type:	proximity switches, supply 12 V DC
RPM measuring range:	0.1 to 120 000 rpm (when 1 pulse/rev.)

Digital Outputs

Digital outputs:	3, open collector, user configurable
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Analog Inputs

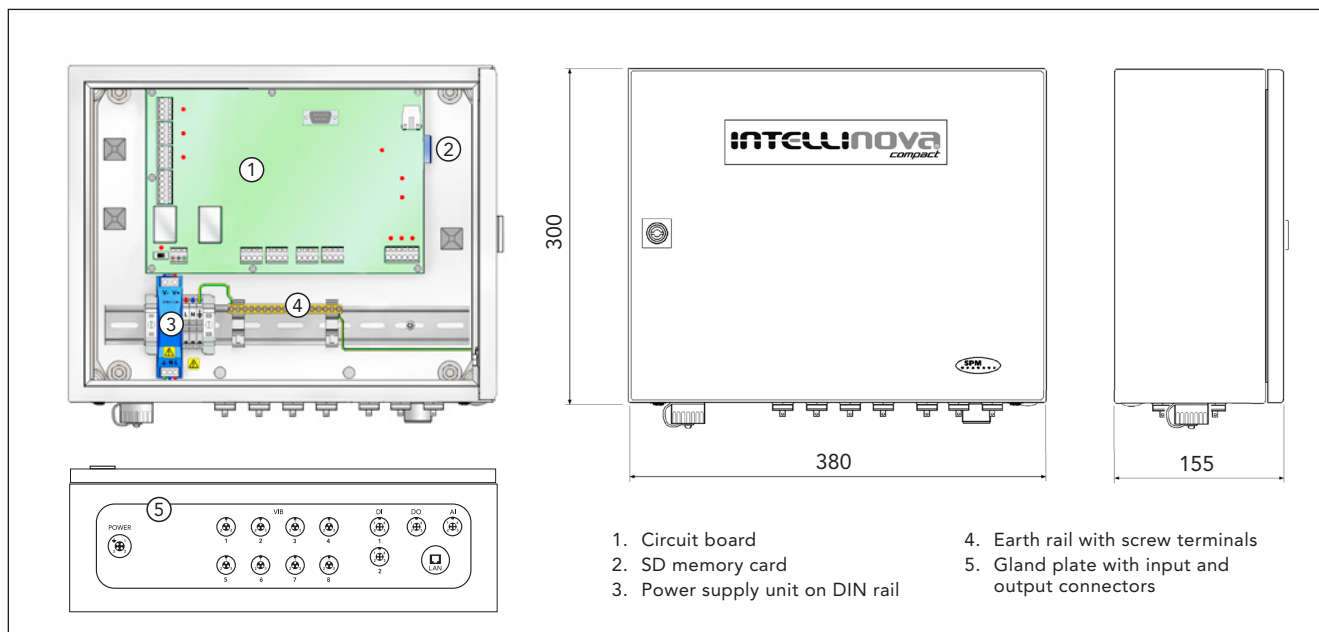
Input channels:	3
Measurement range:	0 to 20 mA
Resolution:	0.01 mA (12 bit)
Meas. accuracy:	± (1% +0.1 mA)
Input resistance:	current 100 Ω
Cable length:	max. 100 m

Options

IND08	Stand for portable system unit (TD-349)
IND14	Relay for external alarm, 2 poles (TD-386)
IND19	Magnets for wall mounting, 3 pcs
81444	Mounting braces for wall mounting, 4 pcs.
90015	Rogowski coil for current measurement (TD-335)
90458	Antenna cable, 10 m



Intellinova® Compact – System Unit INS08V-C



Intellinova Compact INS08V-C is a small and advanced measuring unit for continuous monitoring of machine condition. INS08V-C has the same specifications as INS08V, except that it is equipped with input and output connectors on the gland plate. The unit is complete with power supply unit, internal wiring and DIN rail with space for optional equipment. The enclosure is robust and sealed IP66 for use in harsh environments.

INS08V-C measures vibration on eight channels and analog signals on three channels. Up to three RPM transducers can be connected and linked to measuring assignments set up in Condmaster®.

The unit has three digital outputs for connection to PLC or via external relays to machine stop, external warning lamp, etc.

The unit is equipped with multiplexing measuring logic, alarm, storing and analysis logic. It is connected via standard Ethernet in a LAN network. The circuit board is equipped with status LED indicators and an SD memory card used for data buffering and setup of the system unit.

Both vibration and shock pulse (HDm/HDc) measurements can be performed using DuoTech® accelerometers.

Technical specifications

Design, enclosure:	enamelled steel, IP66
Memory:	SD card, 2 GB
LAN interface:	Ethernet TCP/IP, 10 Mbps
LAN connector:	RJ45 BULGIN PX0834/B
Power supply unit:	100 to 240 VAC, Output 12 VDC, 1.5 A
Power supply connector:	AMPHENOL C16-1 3p+EP
Operating temperature:	-20 to +60 °C (-4 to 140 °F)
Storage temperature:	-20 to +80 °C (-4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Dimensions (w x h x d):	380 x 300 x 155 mm (15x11.8x6.1 in)
Weight:	approx.8.2 kg (18 lbs)

Vibration Monitoring

Measuring methods:	ISO 2372, ISO10816, HD ENV, FFT with symptoms, EVAM
Measuring channels:	8, multiplexing
Frequency range:	DC to 40 kHz
Measuring range:	≥60g peak-peak (using 100mV/g transducer)
Resolution:	0.0015m/s ² RMS (using 100mV/g transducer)
Measur. windows:	Rectangle, Hanning, Hamming, Flat Top
Averages:	time synch, FFT linear, FFT exponential, FFT peak-hold
Spectrum lines:	400, 800, 1600, 3200, 6400, 12800
Input connectors (8):	LEMO 1K 3-pin
Transducer type:	SLD144, SLC144 DuoTech or IEPE (ICP®) type transducers with a nominal bias output voltage of 10 to 14 VDC

Digital Inputs DI

Digital inputs on CBA:	3 channels, multiplexing
RPM transducer type:	proximity switches, supply 12 V DC
RPM measuring range:	0.1 to 120000 rpm (when 1 pulse/rev.)
Input connectors (2):	LEMO 1K 4-pin for 2 DI channels

Digital Outputs DO

Digital outputs on CBA:	3, open collector, user configurable
Output connector (1):	LEMO 1K 4-pin for 2 DO channels

Analog Inputs AI

Input channels on CBA:	3
Measurement range:	0 to 20 mA
Resolution:	0.01 mA (12 bit)
Meas. accuracy:	± (1% +0.1 mA)
Input resistance:	current 100 Ω
Cable length:	max. 100 m
Input connector (1):	LEMO 1K 4-pin for 1 AI channel

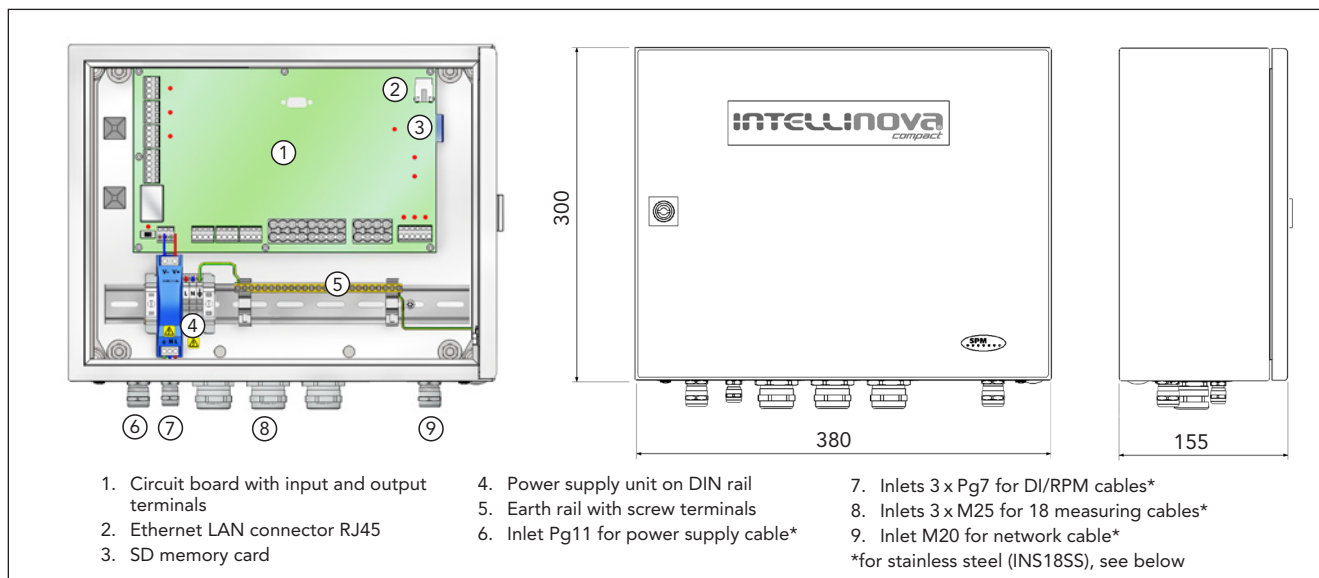
Accessories

IND08	Stand for portable system unit (TD-349)
IND14	Relay for external alarm, 2 poles (TD-386)
IND19	Magnets for wall mounting, 3 pcs
81444	Mounting braces for wall mounting, 4 pcs.
90015	Rogowski coil for current measurement (TD-335)

Suitable cables and connectors, see TD-398.



Intellinova® Compact – System Unit INS18



The system unit INS18 in the Intellinova Compact series is a small and advanced measuring unit for continuous monitoring of machine condition. The system unit is complete with power supply unit, DIN rail with screw terminals for earth connections and space for optional equipment. The enclosure is intended for wall mounting and sealed IP66 for use in harsh environments.

INS18 measures bearing condition on twelve channels, vibration on six channels and analog signals on three channels. Three RPM transducers can be connected and linked to measuring

assignments set up in Condmaster®Ruby. The unit has three digital outputs for connection to PLC or via external relays to machine stop, external warning lamp, etc.

The unit is equipped with multiplexing measuring logic, alarm, storing and analysis logic. It is connected via standard Ethernet in a LAN network. The circuit board is equipped with status LED indicators and an SD memory card used for data buffering and setup of the unit.

Technical specifications

Design, enclosure:	enamelled steel (INS18) or stainless steel (INS18SS), IP66
Memory:	SD card, 2 GB
LAN interface:	Ethernet TCP/IP, 10 Mbps
Power supply unit:	100 to 240 V AC, Output 12 VDC, 1.5 A
Operating temperature:	–20 to +60 °C (–4 to 140 °F)
Storage temperature:	–20 to +80 °C (–4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Dimensions (w x h x d):	INS18: 380x300x155 mm (15x11.8x6.1 in) INS18SS: 380x380x210 mm (15x15x8.3 in)
Cable inlets:	INS18: 3xPg7, Pg11, 3xM25, M20 INS18SS: 4xM16, 5xM25, M20
Weight:	INS18: approx. 8.2 kg (18 lbs) INS18SS: approx. 11,7 kg (26 lbs)

Bearing Monitoring

Measuring methods:	SPM HD, LR/HR HD
Measuring channels:	12, multiplexing
Measuring range SPM HD:	–20 to 80 dBsv
Measuring range LR/HR:	–19 to 80 dBsv
Amplitude scale unit:	HDm/HDc, LR/HR, Time Signal HD, SPM Spectrum HD
Transducer line test:	TLT test
Input connectors:	for coaxial cables with connector 12775
Transducer type:	SPM 44000 series, only for coaxial cables

Vibration Monitoring

Measuring methods:	ISO 2372, ISO10816, HD ENV, FFT with symptoms, EVAM
Measuring channels:	6, multiplexing
Frequency range:	DC to 40 kHz
Measuring range:	≥60g peak-peak (using 100mV/g transd.)
Resolution:	0.0015m/s ² RMS (using 100mV/g transd.)

Measurem. windows:	Rectangle, Hanning, Hamming, Flat Top
Averages:	time synch, FFT linear, FFT exponential, FFT peak-hold
Spectrum lines:	400, 800, 1600, 3200, 6400, 12800
Transducer type:	SLD144, SLC144 DuoTech or IEPE (ICP®) type transducers with a nominal bias output voltage of 10 to 14 V DC

Digital Inputs

Digital/RPM inputs:	3 channels, multiplexing
RPM transducer type:	proximity switches, supply 12 V DC
RPM measuring range:	0.1 to 120 000 rpm (when 1 pulse/rev.)

Digital Outputs

Digital outputs:	3, open collector, user configurable
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Analog Inputs

Input channels:	3
Measurement range:	0 to 20 mA
Resolution:	0.01 mA (12 bit)
Meas. accuracy:	± (1% +0.1 mA)
Input resistance:	current 100 Ω
Cable length:	max. 100 m

Part numbers

INS18	Intellinova Compact system unit, enamelled steel
INS18SS	Intellinova Compact system unit, stainless steel

Accessories

12775	Connector for coaxial cable
IND08	Stand for portable system unit (TD-349)
IND14	Relay for external alarm, 2 poles (TD-386)
IND19	Magnets for wall mounting, 3 pcs
81444	Mounting braces for wall mounting, 4 pcs.
90015	Rogowski coil for current measurement (TD-335)

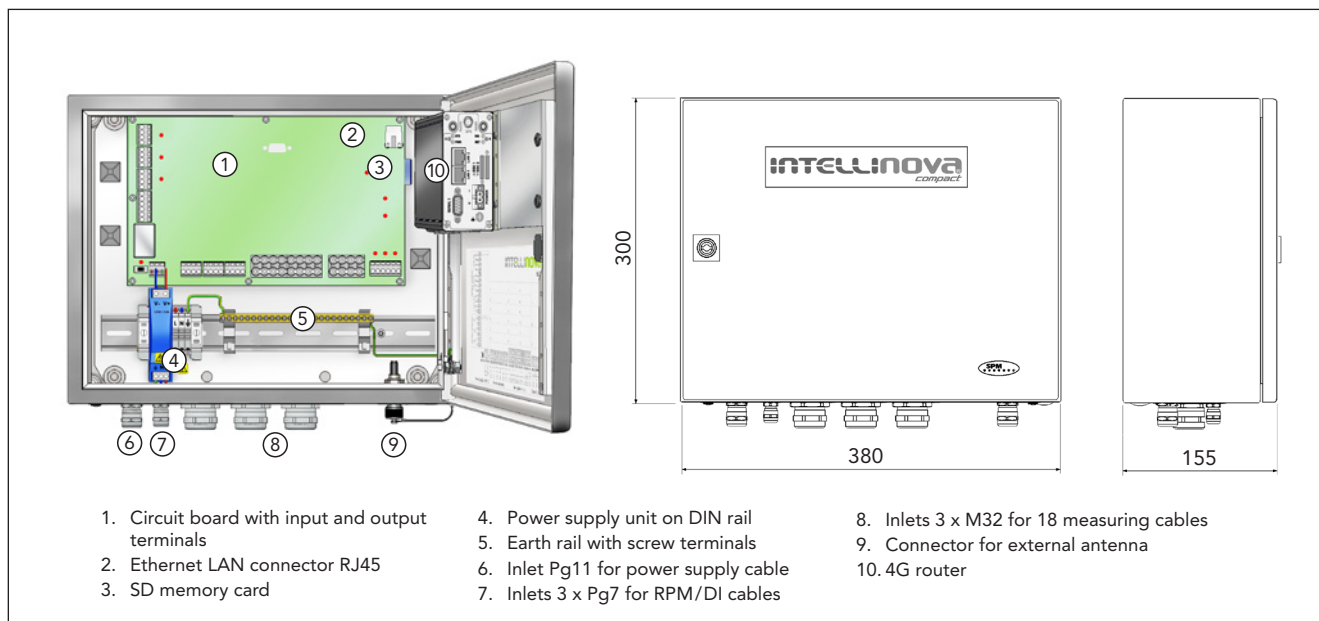


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Intellinova® Compact – System Unit INS18W



The system unit INS18W in the Intellinova Compact series is a small and advanced measuring unit for continuous monitoring of machine condition. It is complete with power supply unit, 4G router, external antenna, DIN rail with screw terminals for earth connections and space for optional equipment. The enclosure, intended for wall mounting, is robust and sealed for use in harsh environments.

INS18W measures bearing condition on twelve channels, vibration on six channels and analog signals on three channels. Up to three RPM transducers can be connected and linked to mea-

suring assignments set up in Condmaster®. The unit has three digital outputs for connection to PLC or via external relays to machine stop, external warning lamp, etc. The circuit board is equipped with status LED indicators and an SD memory card used for data buffering and setup of the system unit.

The built-in 4G router is designed to provide remote connectivity across mobile networks. It is connected via a 10/100 Ethernet switch and supports a wide variety of wireless standards. Specifications for the 4G router 90645 is stated on the technical data sheet TD-550.

Technical specifications

Design, enclosure:	enamelled steel, IP66
Memory:	SD card, 2 GB
LAN interface:	Ethernet TCP/IP, 10 Mbps
Wireless:	4G router incl. omni-directional antenna and 0.75 m antenna cable (TD-550)
Power supply unit:	100 to 240 VAC, Output 12 VDC, 1.5 A
Operating temperature:	-20 to +60 °C (-4 to 140 °F)
Storage temperature:	-20 to +80 °C (-4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Dimensions (w x h x d):	380 x 300 x 155 mm (15 x 11.8 x 6.1 in)
Weight:	approx. 9.8 kg (21 lbs)

Bearing Monitoring

Measuring methods:	SPM HD, LR/HR HD
Measuring channels:	12, multiplexing
Measuring range SPM HD:	-20 to 80 dBsv
Measuring range LR/HR:	-19 to 80 dBsv
Amplitude scale unit:	HDm/HDc, LR/HR, Time Signal HD, SPM Spectrum HD
Transducer line test:	TLT test
Input connectors:	for coaxial cables with connector 12775
Transducer type:	SPM 44000 series, only for use with coaxial cable

Vibration Monitoring

Measuring methods:	ISO 2372, ISO10816, HD ENV, FFT with symptoms, EVAM
Measuring channels:	6, multiplexing
Frequency range:	DC to 40 kHz
Measuring range:	≥60g peak-peak (using 100mV/g transducer)

Resolution:	0.0015m/s ² RMS (using 100mV/g transducer)
Measur. windows:	Rectangle, Hanning, Hamming, Flat Top
Averages:	time synch, FFT linear, FFT exponential, FFT peak-hold
Spectrum lines:	400, 800, 1600, 3200, 6400, 12800
Transducer type:	SLD144, SLC144 DuoTech or IEPE (ICP®) type transducers with a nominal bias output voltage of 10 to 14 V DC

Digital Inputs

Digital/RPM inputs:	3 channels, multiplexing
RPM transducer type:	proximity switches, supply 12 V DC
RPM measuring range:	0.1 to 120000 rpm (when 1 pulse/rev.)

Digital Outputs

Digital outputs:	3, open collector, user configurable
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Analog Inputs

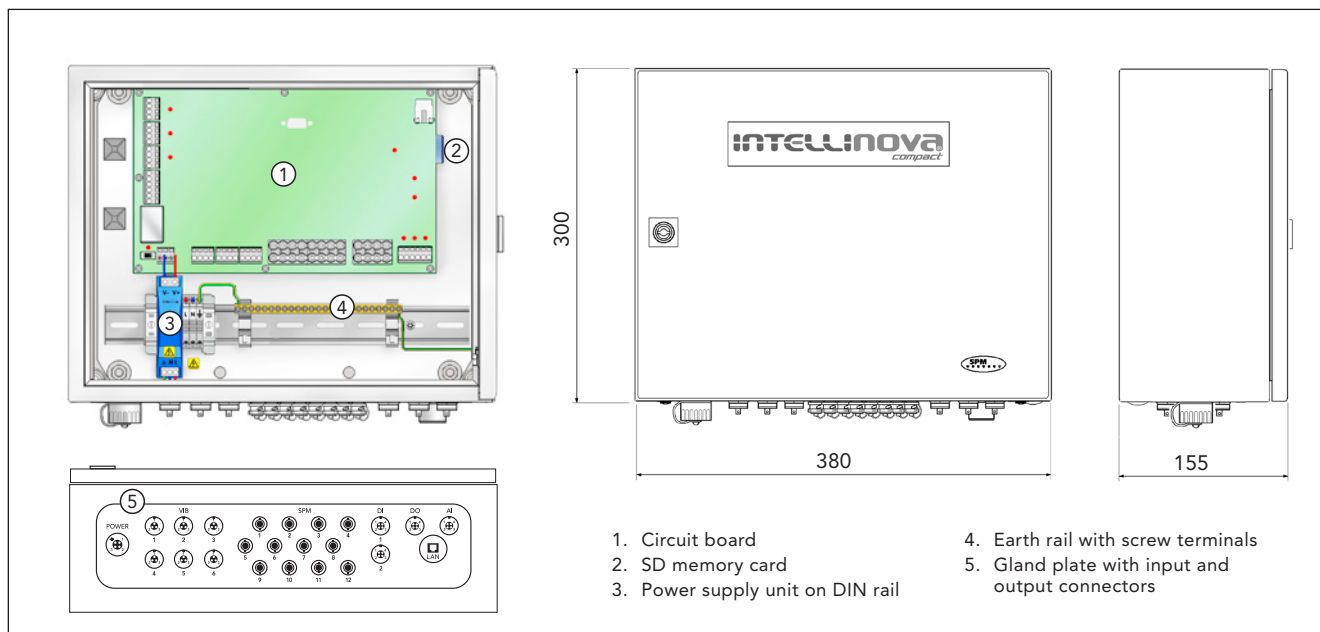
Input channels:	3
Measurement range:	0 to 20 mA
Resolution:	0.01 mA (12 bit)
Meas. accuracy:	± (1% +0.1 mA)
Input resistance:	current 100 Ω
Cable length:	max. 100 m

Accessories

12775	Connector for coaxial cable
IND08	Stand for portable system unit (TD-349)
IND14	Relay for external alarm, 2 poles (TD-386)
IND19	Magnets for wall mounting, 3 pcs
81444	Mounting braces for wall mounting, 4 pcs.
90015	Rogowski coil for current measurement (TD-335)
90458	Antenna cable, 10 m



Intellinova® Compact – System Unit INS18-C



Intellinova Compact INS18-C is a small and advanced measuring unit for continuous monitoring of machine condition. INS18-C has the same specifications as INS18, except that it is equipped with input and output connectors on the gland plate. The unit is complete with power supply unit, internal wiring and DIN rail with space for optional equipment. The enclosure is robust and sealed IP66 for use in harsh environments.

INS18-C measures bearing condition on twelve channels, vibration on six channels and analog signals on three channels. Up

to three RPM transducers can be connected and linked to measuring assignments set up in Condmaster®. The unit has three digital outputs for connection to PLC or via external relays to machine stop, external warning lamp, etc.

The unit is equipped with multiplexing measuring logic, alarm, storing and analysis logic. It is connected via standard Ethernet in a LAN network. The circuit board is equipped with status LED indicators and an SD memory card used for data buffering and setup of the unit.

Technical specifications

Design, enclosure:	enamelled steel, IP66
Memory:	SD card, 2 GB
LAN interface:	Ethernet TCP/IP, 10 Mbps
LAN connector:	RJ45 BULGIN PX0834/B
Power supply unit:	100 to 240 VAC, Output 12 VDC, 1.5 A
Power supply connector:	AMPHENOL C16-1 3p+EP
Operating temperature:	-20 to +60 °C (-4 to 140 °F)
Storage temperature:	-20 to +80 °C (-4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Dimensions (w x h x d):	380 x 300 x 155 mm (15x11.8x6.1 in)
Weight:	approx.8.2 kg (18 lbs)

Bearing Monitoring

Measuring method:	SPM HD, LR/HR HD
Measuring channels:	12, multiplexing
Measuring range SPM HD:	-20 to 80 dBsv
Measuring range LR/HR:	-19 to 80 dBsv
Amplitude scale unit:	HDm/HDc, LR/HR, Time Signal HD, SPM Spectrum HD
Transducer line test:	TLT test
Input connectors (12):	BNC
Transducer type:	SPM 44000 series, only for use with coaxial cables

Vibration Monitoring

Measuring methods:	ISO 2372, ISO10816, HD ENV, FFT with symptoms, EVAM
Measuring channels:	6, multiplexing
Frequency range:	DC to 40 kHz
Measuring range:	≥60g peak-peak (using 100mV/g transducer)
Resolution:	0.0015m/s ² RMS (using 100mV/g transducer)
Measur. windows:	Rectangle, Hanning, Hamming, Flat Top

Averages:	time synch, FFT linear, FFT exponential, FFT peak-hold
Spectrum lines:	400, 800, 1600, 3200, 6400, 12800
Input connectors (6):	LEMO 1K 3-pin
Transducer type:	SLD144, SLC144 DuoTech or IEPE (ICP®) type transducers with a nominal bias output voltage of 10 to 14 VDC

Digital Inputs DI

Digital inputs on CBA:	3 channels, multiplexing
RPM transducer type:	proximity switches, supply 12 V DC
RPM measuring range:	0.1 to 120000 rpm (when 1 pulse/rev.)
Input connectors (2):	LEMO 1K 4-pin for 2 DI channels

Digital Outputs DO

Digital outputs on CBA:	3, open collector, user configurable
Output connector (1):	LEMO 1K 4-pin for 2 DO channels

Analog Inputs AI

Input channels on CBA:	3
Measurement range:	0 to 20 mA
Resolution:	0.01 mA (12 bit)
Meas. accuracy:	± (1% +0.1 mA)
Input resistance:	current 100 Ω
Cable length:	max. 100 m
Input connector (1):	LEMO 1K 4-pin for 1 AI channel

Accessories

IND08	Stand for portable system unit (TD-349)
IND14	Relay for external alarm, 2 poles (TD-386)
IND19	Magnets for wall mounting, 3 pcs
81444	Mounting braces for wall mounting, 4 pcs.
90015	Rogowski coil for current measurement (TD-335)
Suitable cables and connectors, see TD-398.	

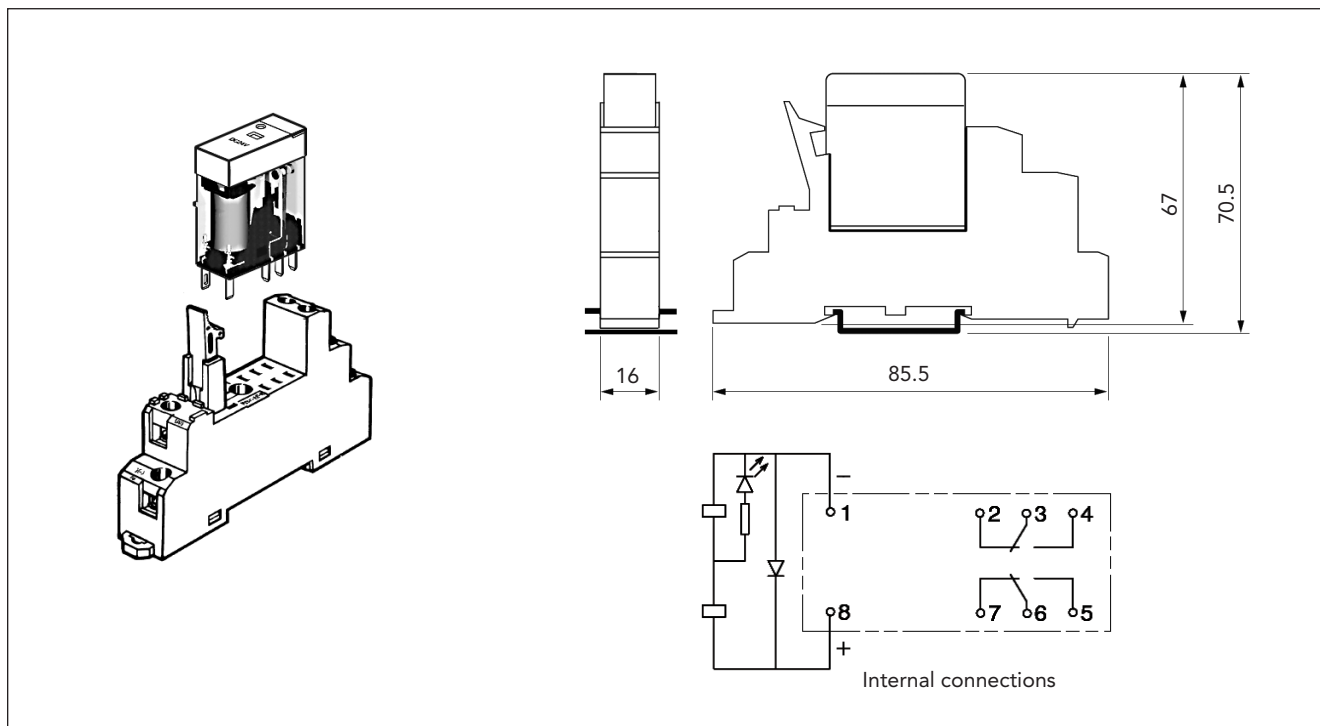


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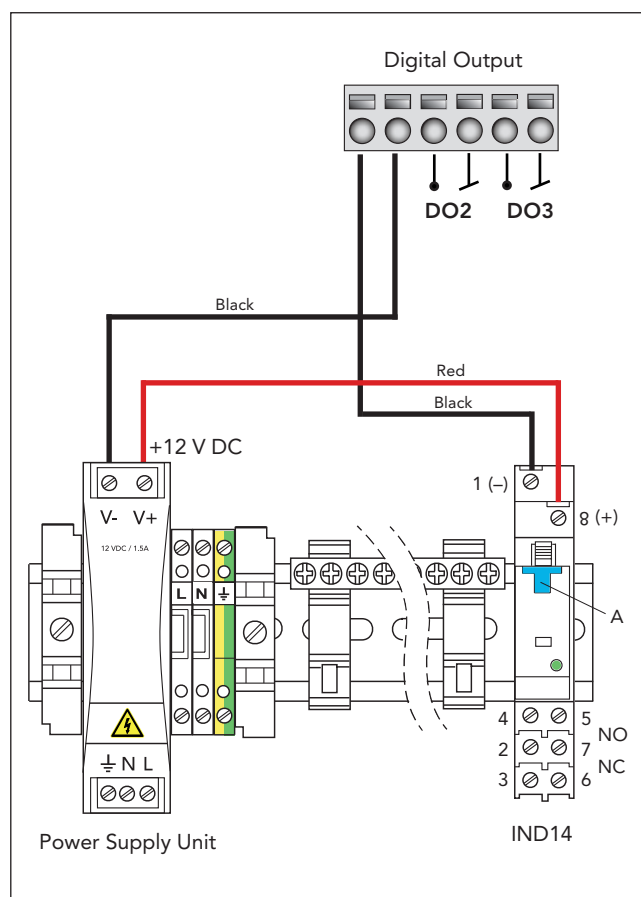
Intellinova® Compact – Relay IND14



IND14 is a slim relay of plug-in type mounted in a socket for DIN rail mounting. It has a LED indicator showing mechanical operation and a test button (A). The relay is delivered with socket and internal cabling for Intellinova Compact.

Technical specifications

Poles:	2
Rated coil voltage:	12 VDC
Rated coil current:	43.2 mA
Power consumption:	0.53 W
Load:	resistive load ($\cos\phi = 1$), inductive load ($\cos\phi = 0.4$; $L/R = 7$ ms)
Rated load:	resistive; 5 A/250 VAC, 5 A/30 VDC inductive; 2 A/250 VAC, 3 A/30 VDC
Rated carry current:	5 A
Max. switching voltage:	380 VAC, 125 VDC
Max. switching current:	5 A
Max. switching power:	resistive; 1250 VA, 150 W inductive; 500 VA, 90 W
Amb. temperature:	-40° to 70 °C (no condensation)
Amb. humidity:	5% to 85% (operating)
Dimensions:	85.5x67x16 mm
Mounting:	DIN rail
Approved standards:	UL508 (File No. E41643), IEC/VDE (EN61810), CSA 22.2 No.0, No.14 (File No. LR311928), LR

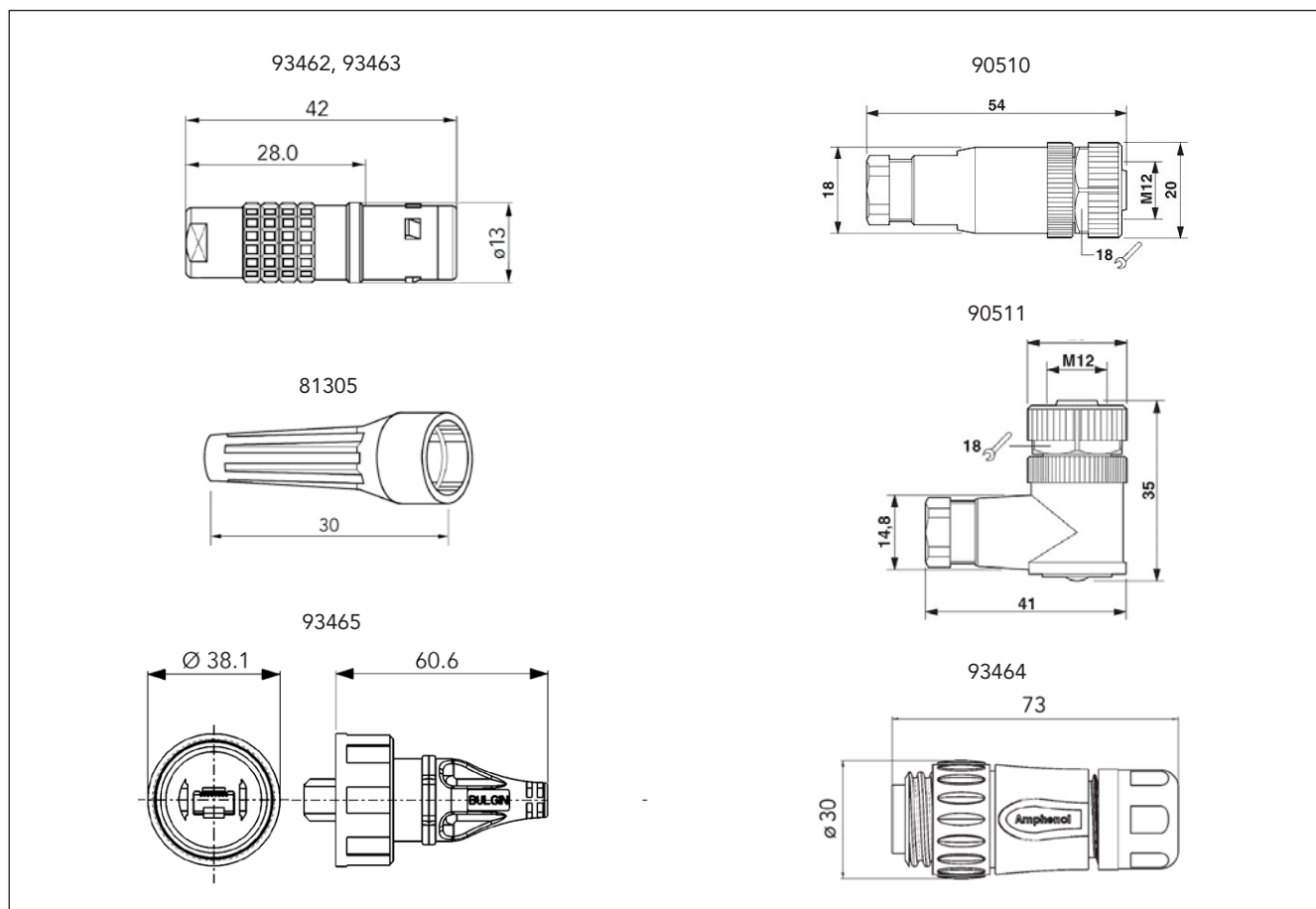


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Intellinova® Compact INS**C – Cables and Connectors



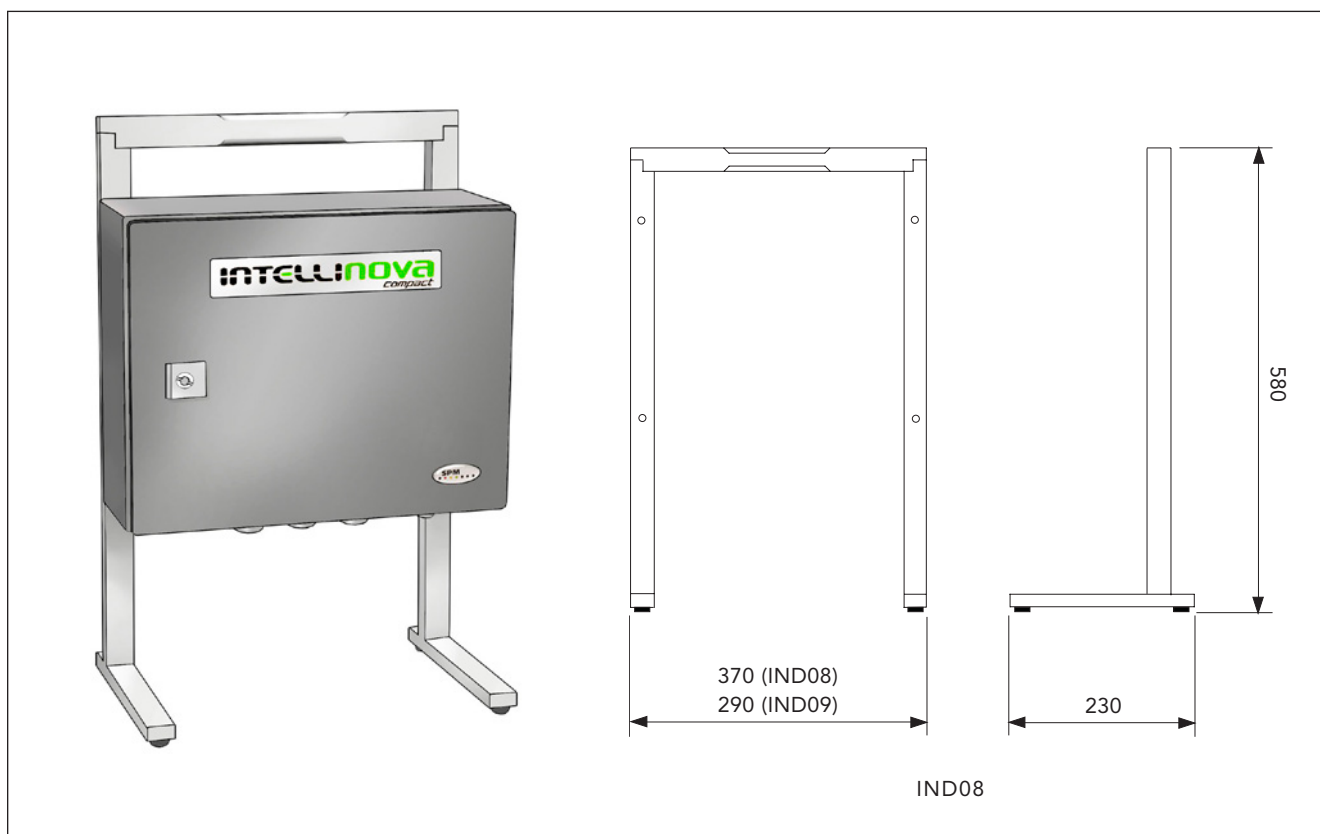
Part numbers

13008	Cable connector TNC for coaxial cable (TD-009)	46127	Cable for DO/DI (90386) with connector 93463 / open end
93060	Cable connector BNC for coaxial cable (TD-019)	46128	Cable for AI (90443) with connector 93463 / open end
81018	Cable protection for BNC connector (TD-018)	46129	Cable for proximity switch, cable 90386 with connectors 93463 / 90510 (straight)
90267	Coaxial cable RG58 (TD-393)	46130	Cable for proximity switch, cable 90386 with connectors 93463 / 90511 (angled)
47126	Coaxial cable (90267) with connectors 93060 / 13008 (SPM)		
16100	Cable connector 2-pin, jack (TD-314)		
93462	Cable connector LEMO 1K 3-pin (VIB) max 0.50 mm ² , cable diam. 4.6-5.0 mm	93465	LAN connector RJ45, Cat 5e, IP68, BULGIN PX0834/B, max. 0.20 mm ² , cable diam. 3.5-8 mm
93463	Cable connector LEMO 1K 4-pin (DI, DO, AI) max 0.34 mm ² , cable diam. 4.6-5.0 mm	93475	LAN cable, Cat 5e, 5 m, with connectors 93465 / RJ45 standard
81305	Cable protection for LEMO connector		
90381	Twisted pair cable, 2 wires with 1 shield (TD-394)	93464	Power cable connector AMPHENOL C16-1 3p+PE, 0.75-2.5 mm ² , cable diam. 6-9 mm
90443	Twisted cable, 3 wires with 1 shield (TD-394)	46123	Power cable US, 2 m (93464 / US connector)
90386	Twisted cable, 4 wires with 1 shield (TD-394)	46125	Power cable UK, 2 m (93464 / UK connector)
46124	Twisted pair cable 90381 with connectors, 16100 (2-pin) / 93462 (3-pin) (VIB)	46126	Power cable EU, 2 m (93464 / EU connector)
90510	Connector, 4-position straight female for inductive proximity switches (TD-384)		
90511	Connector, 4-position angled female for inductive proximity switches (TD-384)		

Note! When ordering cables, state the desired length.
Available lengths for cables with connectors: 3, 5, and 10 m.



Intellinova® Compact – Stand for Portable System Unit



The stands IND08 and IND09 are mounted on the Intellinova Compact system units for conversion to portable units. Portable units allow rapid installation and are ideal for test installations, temporary monitoring of critical machines, etc.

They can also be used as multichannel loggers with data acquisition based on various triggers, stand-alone or in networks. The stands are made of polished aluminium and are easily mounted on the system units with four screws.

Technical specifications

Dimensions (w x h x d): 370x580x230 mm (IND08)
290x580x230 mm (IND09)
Weight: approx. 2.2 kg (4.9 lbs)

Part numbers

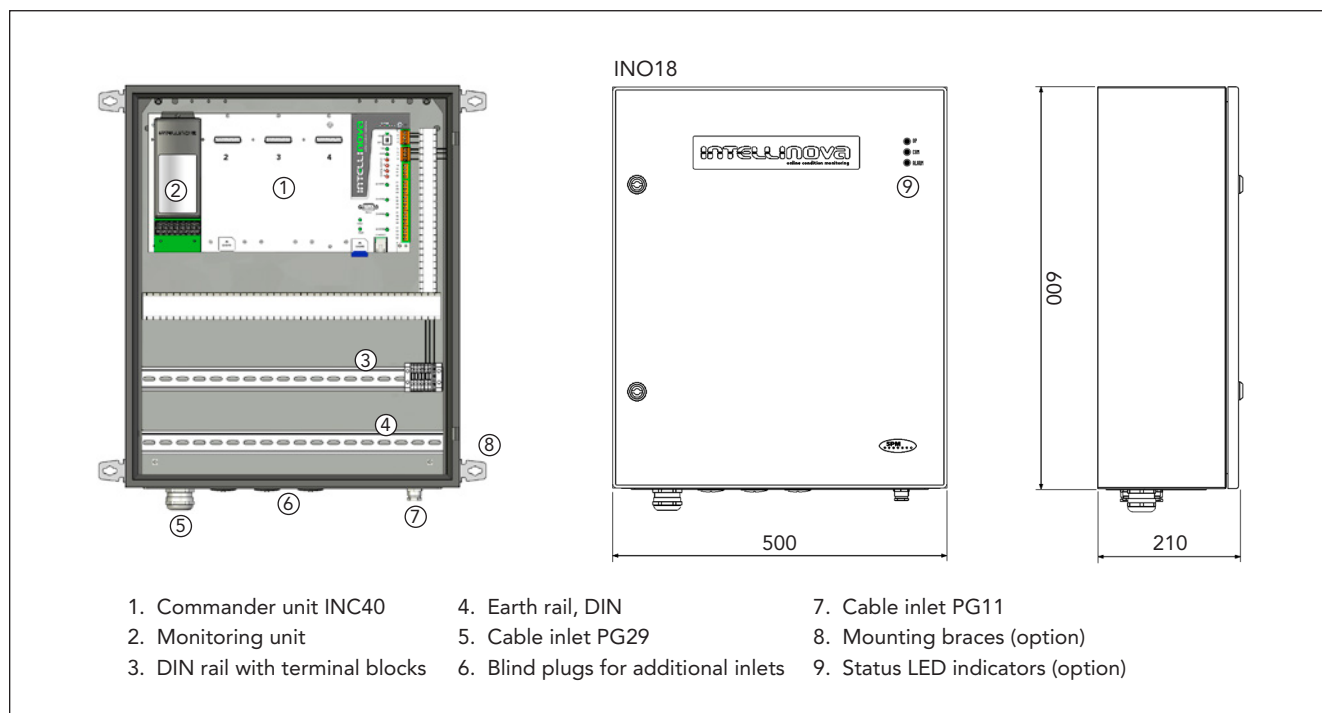
IND08 Stand for System Unit INS08, INS12 and INS18
IND09 Stand for System Unit INS06



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Intellinova® – System unit



The Intellinova system unit is comprised of an industrial enclosure, a commander unit INC40, internal cabling and terminals for power supply. Up to four monitoring units can be mounted and are ordered separately. The enclosure, intended for wall mounting, is robust and sealed for use in harsh environments. The operating temperature range is 0° to +55°C (32° to 131°F) and the storage temperature range is –20° to +80°C (–4° to +176°F).

The unit has a flange with one cable inlet for eight measuring cables plus two cable inlets for power supply and network connection. It has three blind plugs where additional cable inlets (Pg29) for up to 32 measuring cables can be mounted.

Holes for cable inlets intended for digital in- and output connections have to be drilled. The DIN rail has terminal blocks and cabling for connection of power supply. The unit has an earth rail (DIN) where the measuring cable shields should be connected. The unit is equipped with plastic cable channels. Power supply unit, status LED indicators, accessories for DIN rails, internal cabling and cable inlets are ordered separately.

Technical specifications and accessories for the Commander Unit, see *technical data sheet TD-271*. The various types of monitoring units, see *technical data sheet TD-272 to TD-275*. Accessories for INS10, see *technical data sheet TD-289*.

Part numbers

INS10	System unit (INC40+INO18)
INS11	System unit (INC40+INO22)
INC40	Commander unit (TD-271)
INO18	Cabinet for commander unit INC40 (TD-320) 500x600x210 mm (19.7x23.6x8.3 in)
INO22	Cabinet for commander unit INC40 (TD-322) 480x480x155 mm (18.9x18.9x6.1 in)

Monitoring units

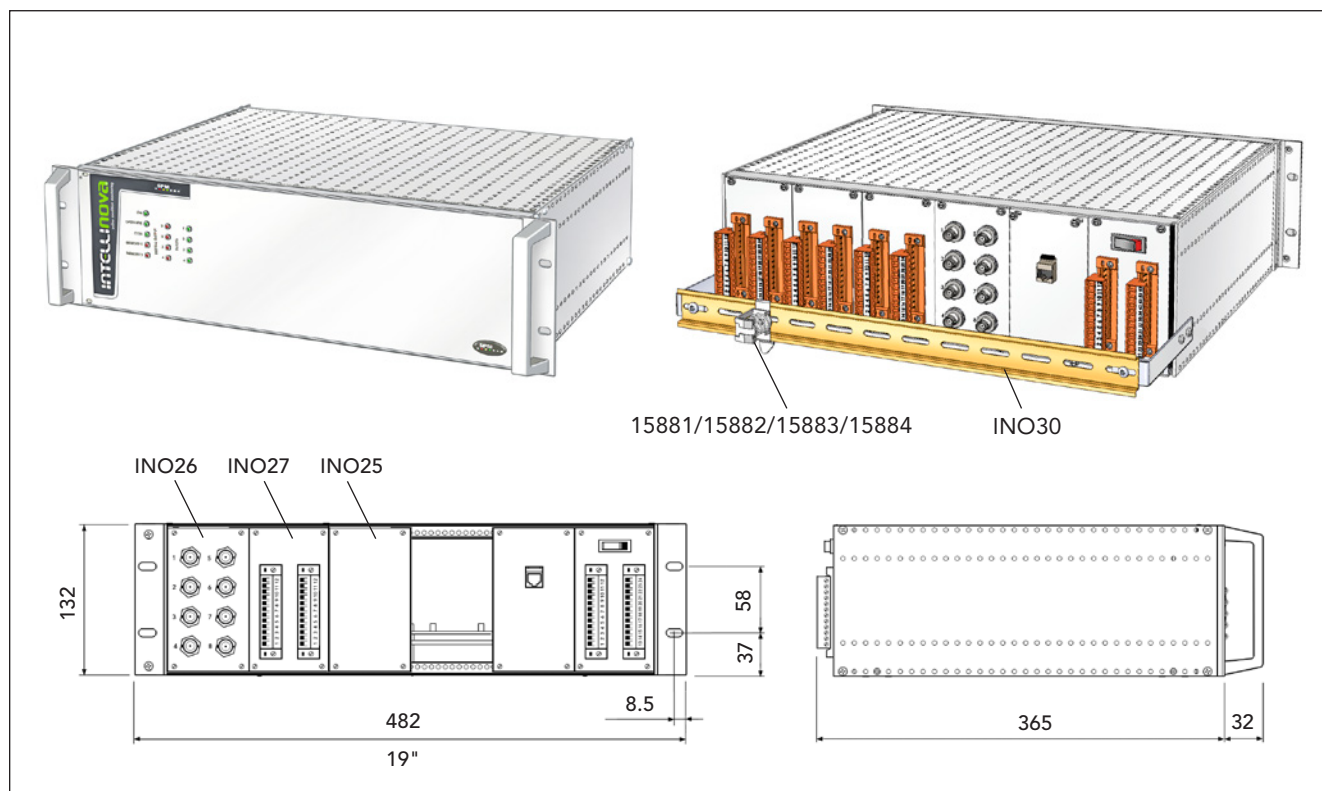
INB80	Bearing Monitoring Unit for SPM transducers of type 40000, coax cables (TD-272)
INB80T	Bearing Monitoring Unit for SPM transducers of type 40000, pair cables (TD-272)
INB82	Bearing Monitoring Unit for SPM transducers of type 42000, coax cables (TD-272)
INB82T	Bearing Monitoring Unit for SPM transducers of type 42000, pair cables (TD-272)
INV80A	Vibration Monitoring Unit (TD-273)
INAI10	Analog Monitoring Unit (TD-274)
INAO80	Analog Output Unit (TD-275)

Options

INO11	Power supply unit, 18 W (TD-288)
INO12	Power supply unit, 50 W (TD-288)
INO13	Internal cabling with terminal blocks for digital outputs, 3 channels
INO14	Internal cabling with terminal blocks for digital inputs, 4 channels
INO16	Relay for external alarm, 2 poles (TD-290)
INO17	Key Phasor Interface, 2 channels (TD-299)
INO31	Wireless 4G router 90645 (TD-550), compl. set with antenna and 10 m antenna cable
INO37	Status LED indicators
81325	Mounting braces, 4 pcs



Intellinova® – System Unit INR20 for 19" Rack



INR20 is an Intellinova System Unit for 19 inch rack mounting. It has a built-in Commander Unit INC41 with sockets for up to four monitoring units. The back panels are equipped with terminal blocks and internal cabling for connection of power supply and digital in- and outputs. The system unit has LED indicators on the front panel showing its status.

Monitoring units, back panels with internal cabling and power supply unit are ordered separately.

Technical specifications for the Commander Unit are stated on data sheet TD-271. The various types of monitoring units are described on the data sheets TD-272 to TD-275.

Technical specifications, INR20

Design, enclosure: anodised aluminium, ventilated
 Power supply: 18 to 36 V DC, nom. 24 V DC
 Storage temperature: -20 to +80 °C (-4 to 176 °F)
 Relative humidity: 10% to 90% (non-condensing)
 Terminals on back panels: network connection RJ45, screw terminal blocks for power supply and digital in- and outputs
 Dimensions (w x h x d): 482 (19") x 132 (3U) x 365 mm
 Weight: approx. 4 kg (9 lbs)

Part numbers

INR20 System unit (INO24 + INC41)
 INC41 Commander Unit
 INO24 Subrack for Commander Unit INC41
 INB80 Bearing Monitoring Unit for SPM transducers of type 40000/coaxial cable (TD-272)
 INB80T Bearing Monitoring Unit for SPM transducers of type 40000/pair cable (TD-272)
 INB82 Bearing Monitoring Unit for SPM transducers of type 42000/coaxial cable (TD-272)

INB82T Bearing Monitoring Unit for SPM transducers of type 42000/pair cable (TD-272)
 INV80A Vibration Monitoring Unit, screw terminals (TD-273)
 INAI10 Analog Monitoring Unit (TD-274)
 INAO80 Analog Output Unit (TD-275)
 INO25 Blank back panel, (w x h) 70.5 x 128.5 mm
 INO26 Back panel with eight BNC connectors and internal cabling suitable for INB80 and INB82
 INO27 Back panel with two screw terminal blocks and internal cabling suitable for INB80T, INB82T, INV80A, INAI 10 and INAO 80
 INO28 Power supply unit, 100 to 240 V, 50 W (TD-323)
 INO30 Earth rail with mounting brackets, DIN
 15881 Clamping yoke for earth rail, DIN, cable 3-8 mm
 15882 Clamping yoke for earth rail, DIN, cable 4-13,5 mm
 15883 Clamping yoke for earth rail, DIN, cable 10-20 mm
 15884 Clamping yoke for earth rail, DIN, cable 15-32 mm

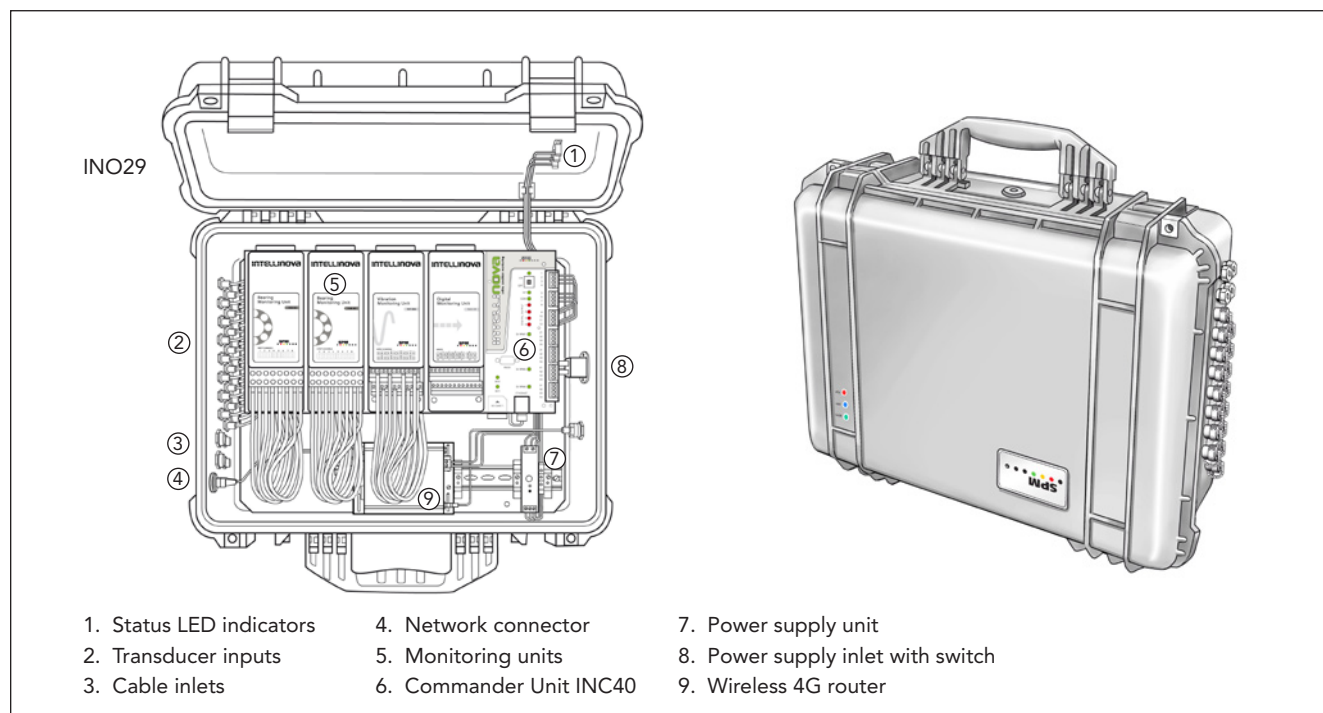


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Intellinova® – Portable System Unit



The Portable System Unit INP20 is comprised of a Commander Unit (INC40) mounted in a sturdy MIL standard plastic carrying case (INO23 or INO29 with wireless 4G router) with connectors, internal measuring cables and a power supply unit. The case fits a fullblown Intellinova system, using all the same components as the non-portable version and with all the features.

This system unit allows rapid installation and is ideal for test installations, temporary monitoring of critical machines, etc. It can also be used as a multichannel logger with data acquisition based on various triggers, stand-alone or in networks.

The carrying case has TNC jack connectors for bearing monitoring on 16 channels (two monitoring units), 2-pin plug connectors for vibration monitoring on 8 channels (one monitoring unit) and cable inlets for connection of one analog monitoring unit. The case has exterior power supply inlet with switch, network connector and status indicators. Monitoring units are ordered separately. Power supply cable is not included.

Technical specifications for the Commander Unit are stated on data sheet TD-271. The various types of monitoring units are described on the data sheets TD-272 to TD-275.

Technical specifications, INP20

Design, case:	copolymer, neoprene seals, automatic purge valve, IP67
Operating temperature:	0 to +60 °C (32 to 140 °F)
Storage temperature:	–20 to +80 °C (–4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Input connectors:	16 x TNC jack (for coax cables), 8 x 2-pin plug (for pair cables), network connector RJ45
Cable inlets:	2xPG7 and 2xPG11
Power supply:	100 to 240 VAC (85 to 265 VAC), 50/60 Hz, max. 10 A
Power inlet:	IEC inlet with line switch
Dimensions (w x h x d):	530 x 437 x 217 mm (20.9 x 17.2 x 8.5 inches)
Weight:	approx. 9 kg (20 lbs) with monitoring units

Part numbers

INP20	Portable System Unit (INC40+INO23)
INC40	Commander Unit (TD-271)
INO23	Case (without INC40 and monitoring units)
INO29	Case (without INC40 and monitoring units) incl. wireless 4G router 90645 (TD-550), omni-directional antenna 90460, connectors and 10 m cable

Monitoring units

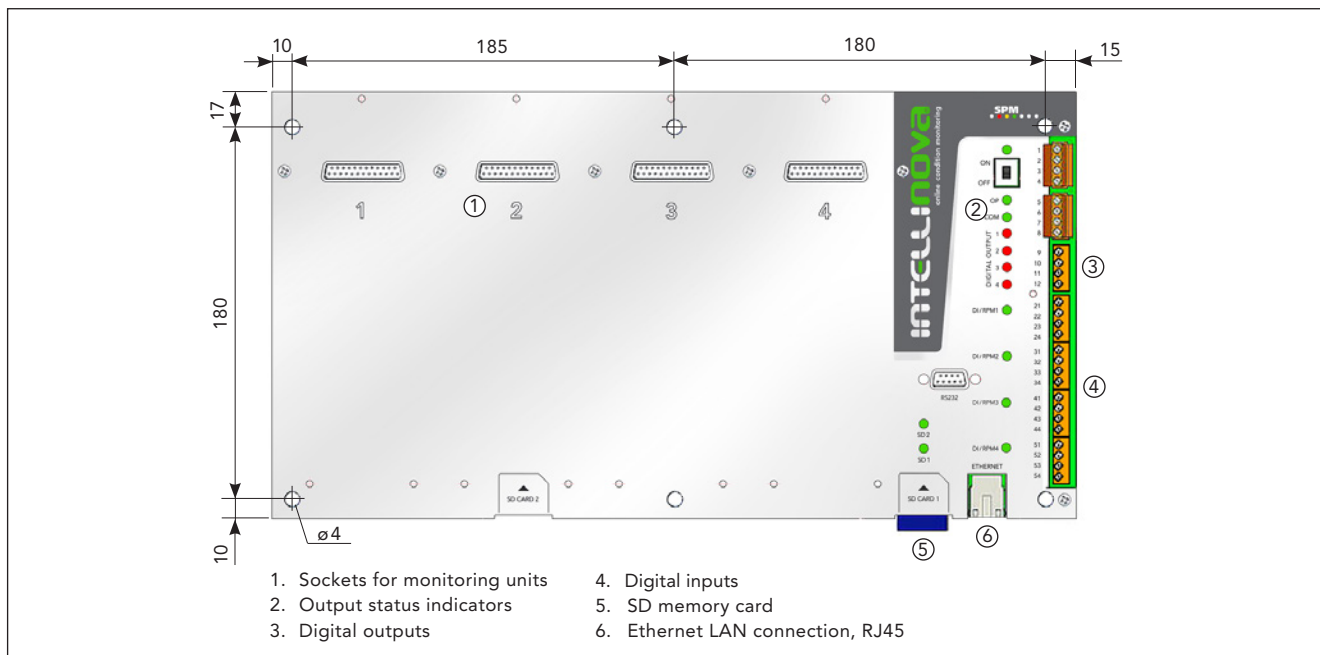
INB80	Bearing Monitoring Unit for SPM transducers of type 40000, coax cables (TD-272)
INB82	Bearing Monitoring Unit for SPM transducers of type 42000, coax cables (TD-272)
INV80A	Vibration Monitoring Unit (TD-273)
INAI10	Analog Monitoring Unit (TD-274)
INAO80	Analog Output Unit (TD-275)

Accessories

90027	Power supply cable, Euro-plug
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Intellinova® – Commander Unit INC40/INC41



The Intellinova Commander Unit is a flexible and modular platform, which controls and communicates with the monitoring units for continuous monitoring of machine condition. Up to four monitoring units with normally eight channels each can be plugged into the Commander Unit. Monitoring units are ordered separately and are described on the technical data sheets TD-272 to TD-275. INC40 is intended for mounting in standard Intellinova cabinets and INC41 is intended for mounting in 19" subrack INO24.

The Commander Unit is equipped with multiplexing measuring logic, alarm, storing and analysis logic. It is connected via standard Ethernet in a LAN network.

The unit has four digital outputs for connection to PLC or via external relays to machine stop, external warning lamp, etc. Up to four RPM transducers can be connected and linked to measuring assignments set up in Condmaster®.

The communication program LinX transmits measuring assignments to and reads the results from the Commander Unit, and controls the measuring operations, data processing and storage. A service laptop with the Field Support Software (FSS) can be connected for service and setup via an Ethernet port. Data access to process and control systems can be implemented via OPC client/server technology. The unit can be used off-line and is equipped with SD memory card for buffering and back-up.

The measuring assignments are set up in Condmaster running under Windows. Condmaster also handles portable SPM dataloggers and existing SPM online systems. SQL Server is used as database handler.

Technical specifications

Monitoring units:	sockets for 4 monitoring units
Digital/RPM inputs:	4 channels
RPM transducer type:	proximity switches, supply 12 V DC
RPM measuring range:	1 to 120 000 rpm
Digital output:	2 status and 4 user configurable
Memory:	SD card, 2 GB
LAN interface:	Ethernet TCP/IP, 10 Mbps, RJ45
Power supply:	18 to 36 V DC, nom. 24 V DC
Power consumption:	max. 21 W (6 W available for rpm transducers), typical 3 W without measuring units and rpm transducers
Operating temperature:	0 to +60 °C (32 to 140 °F)
Storage temperature:	-20 to +80 °C (-4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Dimensions (w x h x d):	390 x 207 x 40 mm (15.4 x 8.2 x 1.5 inches)
Weight:	approx. 750 g without monitoring units

Part numbers

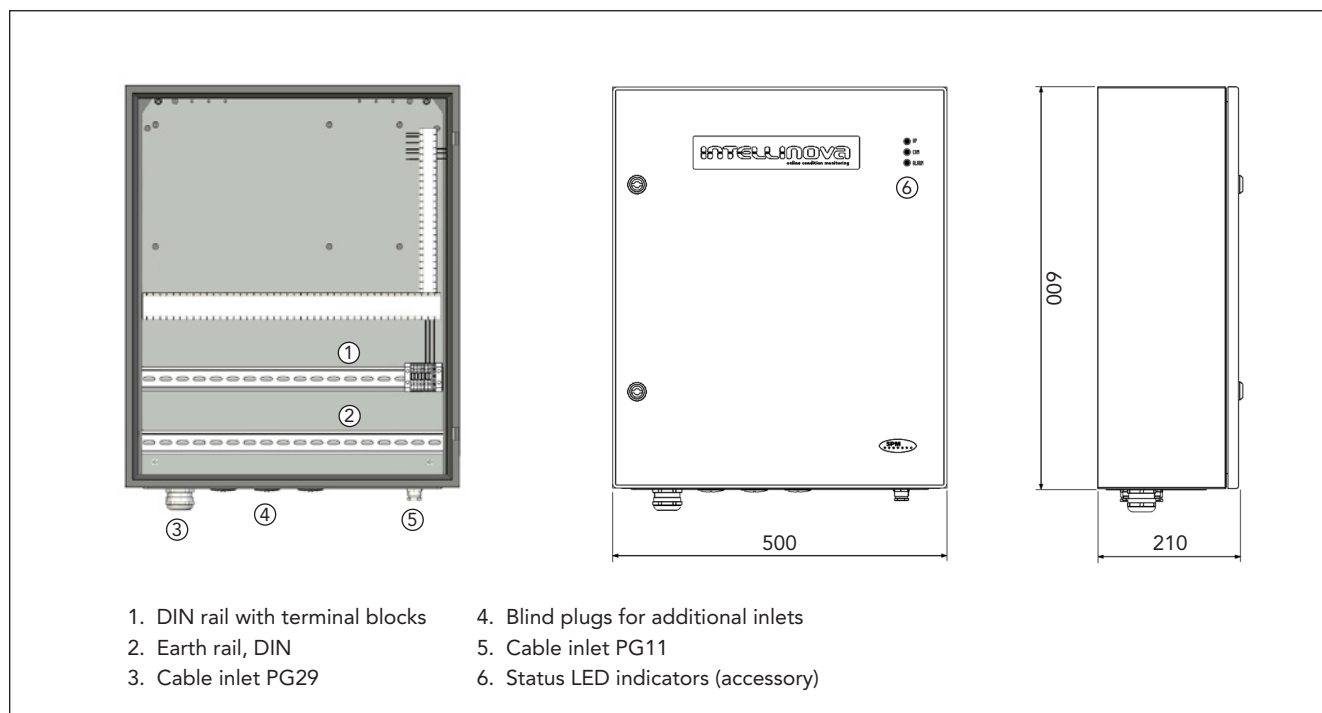
- INC40 Commander Unit for standard cabinets including mounting screws with spacers and 2 screw terminals for power supply and status indicators
- INC41 Commander Unit for 19" subrack INO24 including mounting screws with spacers and 2 screw terminals for power supply and status indicators

Accessories

- 93384 Screw terminal, 4 pins, for connection of digital inputs/RPM and digital outputs
- 90419 SD memory card, 2 GB



Intellinova® – Cabinet INO18



Cabinet INO18 is an industrial enclosure designed for encapsulation of Intellinova Commander Unit INC40. It has internal cabling for INC40 and terminal blocks for power supply. The cabinet, intended for wall mounting, is robust and sealed for use in harsh environments.

The cabinet has a flange with one cable inlet for eight measuring cables plus two cable inlets for power supply and network connection. It has three blind plugs where additional cable inlets (PG29) for up to 32 measuring cables can be mounted. Holes for cable inlets intended for digital inputs

and output connections have to be drilled. The cabinet has an earth rail (DIN) where the measuring cable shields should be connected. It is equipped with plastic cable channels. Power supply unit, status LED indicators, accessories for DIN rails, internal cabling and cable inlets are ordered separately.

Commander Unit INC40 is ordered separately and is described on the technical data sheet TD-271. The cabinet INO18 complete with mounted Commander Unit INC40 has part number INS10, see data sheet TD-270.

Technical specifications, INO18

Design, enclosure:	enamelled steel, IP66
Cable inlets:	1 x PG29 for 8 measuring cables 2 x PG11 for power supply and network cables
Terminals:	7 terminal blocks for connection of power supply cables
Dimensions (w x h x d):	500 x 600 x 210 mm (19.7 x 23.6 x 8.3 inches)
Mounting holes:	4 with diameter 8.5 mm, spacing (w x h) 460 x 560 mm
Weight:	approx. 20 kg (44 lbs)

Part numbers

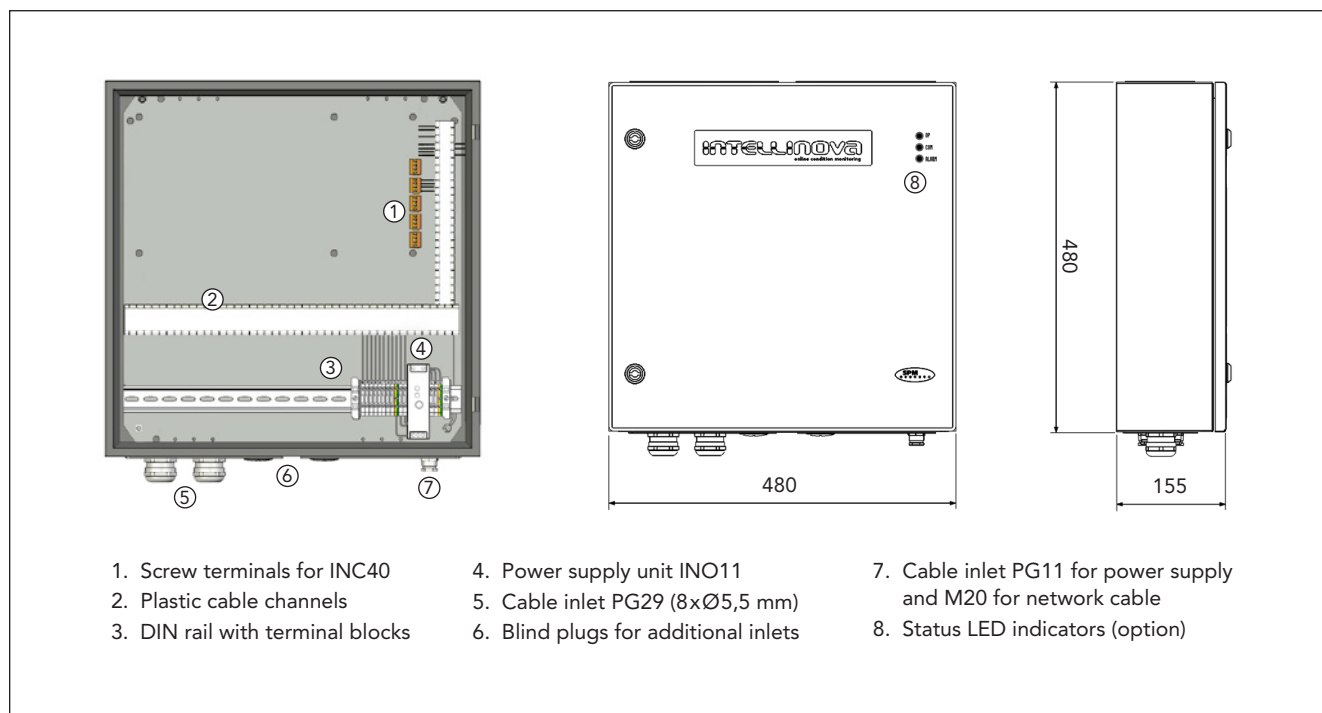
INO18	Cabinet for Commander Unit INC40
INC40	Commander Unit (TD-271)
INS10	Complete system unit; Commander Unit INC40 mounted in Cabinet INO18 (TD-270)

Accessories

INO11	Power supply unit, 18 W (TD-288)
INO12	Power supply unit, 50 W (TD-288)
INO13	Internal cabling with terminal blocks for digital outputs, 3 channels
INO14	Internal cabling with terminal blocks for digital inputs, 4 channels
INO16	Relay for external alarm, 2 poles (TD-290)
INO17	Key Phasor Interface, 2 channels
INO31	4G router 90645 incl. omni-directional antenna and 0.75 m antenna cable (TD-550)
INO37	Status LED indicators
81325	Mounting braces, 4 pcs



Intellinova® – Cabinet INO22



Cabinet INO22 is a small industrial enclosure designed for encapsulation of Intellinova commander unit INC40 in narrow spaces. It has internal cabling for INC40, power supply unit and terminal blocks for connection of digital inputs/rpm and power supply. The cabinet, intended for wall mounting, is robust and sealed for use in harsh environments.

The cabinet has flanges with two cable inlets for up to sixteen measuring cables plus two cable inlets for power supply and network connection. It has two blind plugs where additional cable inlets (PG29) can be mounted. Holes for cable inlets

intended for digital input and output connections have to be drilled. The cabinet is equipped with plastic cable channels and status indicators on the lid. Additional cable inlets, terminal blocks and internal cabling are ordered separately.

Cabinet INO22 complete with mounted commander unit INC40 has part number INS11, see technical data sheet TD-270. The commander unit INC40 can be ordered separately, see technical data sheet TD-271. Power supply unit INO11 is described on technical data sheet TD-288.

Technical specifications

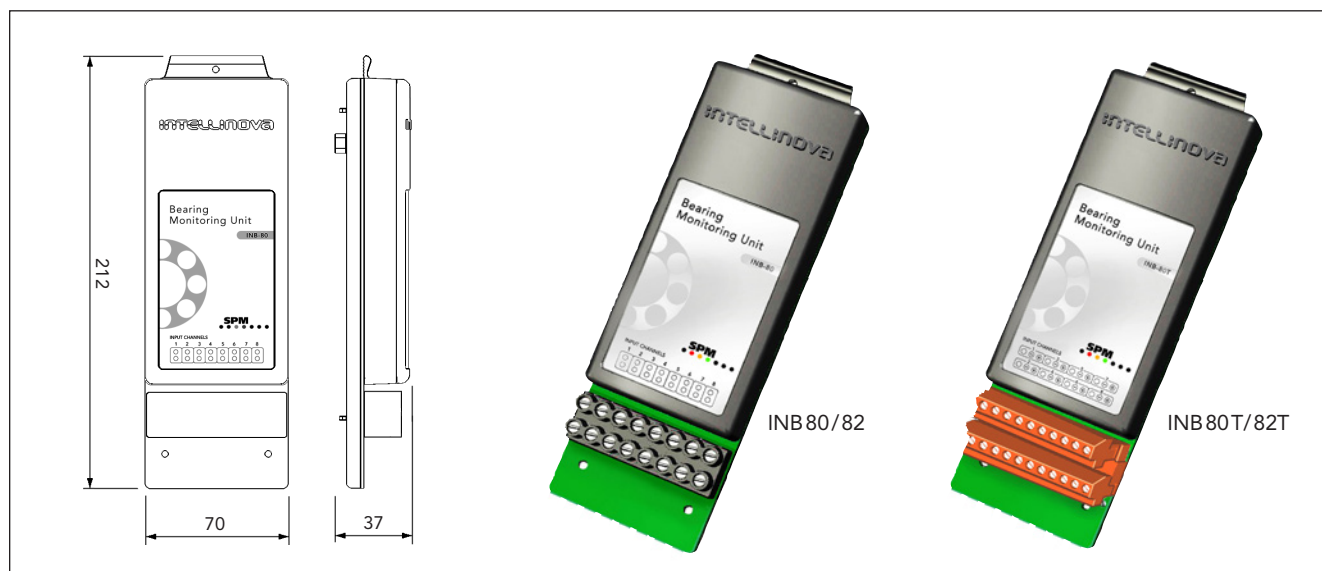
Design, enclosure:	enamelled steel, IP66
Power supply unit:	
Input voltage	100 to 240 V AC (85 to 265 V AC)
Frequency	50/60 Hz, max. 10 A
Output	+24 V DC, 18 W
Cable inlets:	2xPG29 for 16 measuring cables 1xPG11 for power supply 1xM20 for network cable
Terminals:	14 terminal blocks with internal cabling for connection of power supply and one channel DI/RPM plus four screw terminals 93384 for INC40 without internal cabling
Dimensions (w x h x d):	480x480x155 mm (18.9x18.9x6.1 inches)
Mounting holes:	four with diameter 8.5 mm, spacing (w x h) 440x440 mm
Weight:	approx. 15 kg (33 lbs)

Options

INO37	Status LED indicators
81325	Mounting braces, 4 pcs



Intellinova® – Bearing Monitoring Unit



The Bearing Monitoring Unit is a part of the Intellinova System and has eight channels for continuous monitoring of bearing condition. It measures shock pulses according to the True SPM method and supports SPM Spectrum and SPM HD. The unit is simply plugged into the socket in the Intellinova Commander Unit. Measuring methods, measuring time, alarm limits, alarm delay etc. are set up in Condmaster.

Four versions of the Bearing Monitoring Unit are available. INB80 and INB82 have input connectors for coaxial cables. INB80 is intended for shock pulse transducers of type 40000 (cable length max. 4 m) and INB82 is intended for shock pulse transducers of type 42000 (cable length max. 100 m).

INB80T and INB82T have input connectors for twisted pair cables. INB80T is intended for shock pulse transducers of type 40000 (cable length max. 4 m) and INB82T is intended for shock pulse transducers of type 42000 (cable length max. 100 m).

Signal processing

The resonance frequency of the SPM shock pulse transducer, calibrated to 32 kHz, constitutes the ideal carrier wave for transients caused by shocks. The output of this transducer is the same type of demodulated signal produced by 'enveloping', with this important difference: both frequency and amplitude response of the SPM transducer are precisely tuned, so there is no need to find uncertain and shifting machine resonances to get a signal.

Intellinova measures the shock amplitude by a shock pulse measurement with the dBm/dBc or the LR/HR method and the results are bearing condition data for condition evaluation. The measurement also produces a time record which can be analyzed using SPM Spectrum. The resulting spectrum is used mostly for pattern recognition. The technique SPM HD generates a signal with razor-sharp resolution and is particularly well suited for condition monitoring on low speed applications.

Technical specifications

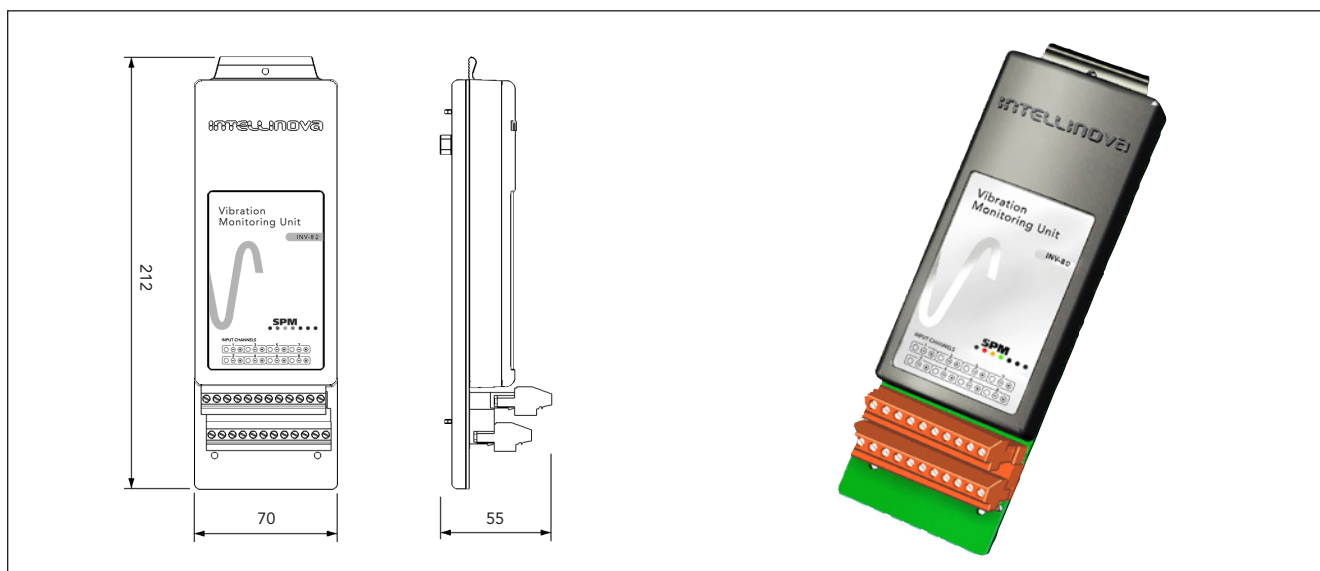
Measuring methods:	dBm/dBc, LR/HR, SPM Spectrum, SPM®HD
Measuring channels:	8, multiplexing
Measuring range:	–9 to 99 dBsv, –19 to 99 LRHR
Measuring time:	approx. 2 sec. per channel dBm/dBc, approx. 20 sec. LR/HR
Frequency range:	0 to 100, 200, 500, 1000, 2000, 5000, 10 000, 20 000, 40 000 Hz
Number of spectrum lines:	400, 800, 1600, 3200, 6400, 12800
Measurement windows:	Rectangle, Hanning, Hamming, Flat Top
Spectrum types displayed:	linear, power
Averages:	time synchronous, FFT linear, FFT peak-hold
Frequency units:	Hz, CPM
Saving options for spectrum:	full spectrum, peaks only
Amplitude scale unit:	S _b (Shock Distribution), S _L (Shock Level), HDesv
Scaling:	linear or logarithmic X and Y axis
Zoom:	true FFT zoom, visual zoom
Pattern recognition:	bearing frequencies and optional patterns highlighted in the spectrum. Automatic configuration of bearing symptoms linked to ISO bearing no.
Input connectors:	for coaxial cables on INB80/82, for pair cables on INB80T/82T
Transducer line test:	TLT test
Design:	encapsulated circuit board, not protected
Power consumption:	max. 1.5 W, typical 0.8 W
Operating temperature:	0 to +60 °C (32 to 140 °F)
Storage temperature:	–20 to +80 °C (–4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Mounting:	plug-in connector and holding screws for attachment in INC40/INC41
Dimensions:	212 x 70 x 37 mm
Weight:	approx. 200 g

Part numbers

INB80	Bearing Monit. Unit, transducers type 40000/coax cable
INB82	Bearing Monit. Unit, transducers type 42000/coax cable
INB80T	Bearing Monit. Unit, transducers type 40000/pair cable
INB82T	Bearing Monit. Unit, transducers type 42000/pair cable
12775	Connector for coaxial cable (INB80/82)



Intellinova® – Vibration Monitoring Unit INV80A



The Vibration Monitoring Unit INV80A is a part of the Intellinova System and has eight channels for continuous monitoring of vibrations. The unit is simply plugged into the socket in the Intellinova Commander Unit. Measuring time, alarm limits, alarm delay etc. are set up in Condmaster®.

It supports broad band vibration measurement, both ISO 2372 and the more recent ISO 10816, the most cost-efficient method for the diagnosis of general machine condition.

It also supports HD ENV, FFT with symptoms and EVAM (Evaluated Vibration Analysis Method). HD ENV is capable of detecting at a very early stage such machine problems which are generally difficult to find in good time with non-enveloping techniques, for example bearing and gear damages. The EVAM method generates condition parameters describing various aspects of machine vibration, vibration spectra where significant line patterns are highlighted and evaluated plus machine specific condition codes and condition values, based on a statistical evaluation of the condition parameters and symptom values.

Two channel simultaneous vibration monitoring requires that either the measuring technique 'FFT with symptoms' or 'EVAM' is active in Condmaster. This type of measurement allows the user to study machine movement in two dimensions by observing the difference of the phase angles measured on the two channels.

Orbit analysis is a vibration measurement function offered with the Vibration Monitoring Unit. The resulting orbit graph shows the movement of the shaft's centerline and is used to detect failures like rubs, unbalance, misalignment or oil whip on machinery with journal bearings. Required are two channel simultaneous vibration measurement and two transducers placed at an angle of 90° to each other, plus a trigger signal from a tachometer probe.

Both vibration and shock pulse (HDm/HDc) measurements can be performed using DuoTech® accelerometers.

Technical data

Measuring methods:	ISO 2372, ISO10816, HD ENV, FFT with symptoms, EVAM, 2-channel vib, orbit
Measuring channels:	8, multiplexing, 2 simultaneous
Design:	encapsulated circuit board, not protected
Input connectors:	screw terminals
Power consumption:	max. 1.5 W, typical 0.8 W
Operating temp.:	0 to +60 °C (32 to 140 °F)
Storage temp.:	-20 to +80 °C (-4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Mounting:	plug-in connector and holding screws for attachment in Commander Unit INC40/41
Dimensions:	212 x 70 x 55 mm
Weight:	approx. 200 g

Vibration analysis

Freq. limit, lower:	0.5, 2, 10 or 100 Hz
Freq. limit, upper:	100, 200, 500, 1000, 2000, 5000, 10 000, 20 000, 40 000 Hz
Envelope HP filters:	100, 200, 500, 1000, 2000, 5000, 10 000 Hz
Measur. windows:	Rectangle, Hanning, Hamming, Flat Top
Averages:	time synch, FFT linear, FFT exponential, FFT peak-hold
Spectrum lines:	400, 800, 1600, 3200, 6400, 12800
Transducer types:	SLD144, SLC144 DuoTech or IEPE (ICP®) type transducers with voltage output

Orbit analysis

Orders:	1 to 5, default 1
Filter types:	None, band pass, low pass
Signal unit:	DISP, VEL, ACC
Measuring time:	1 to 25 revolutions
Transducer types:	Buffered outputs from API670 approved protection systems, alt. transducers SLD144 or IEPE (ICP®) type transducers with voltage output

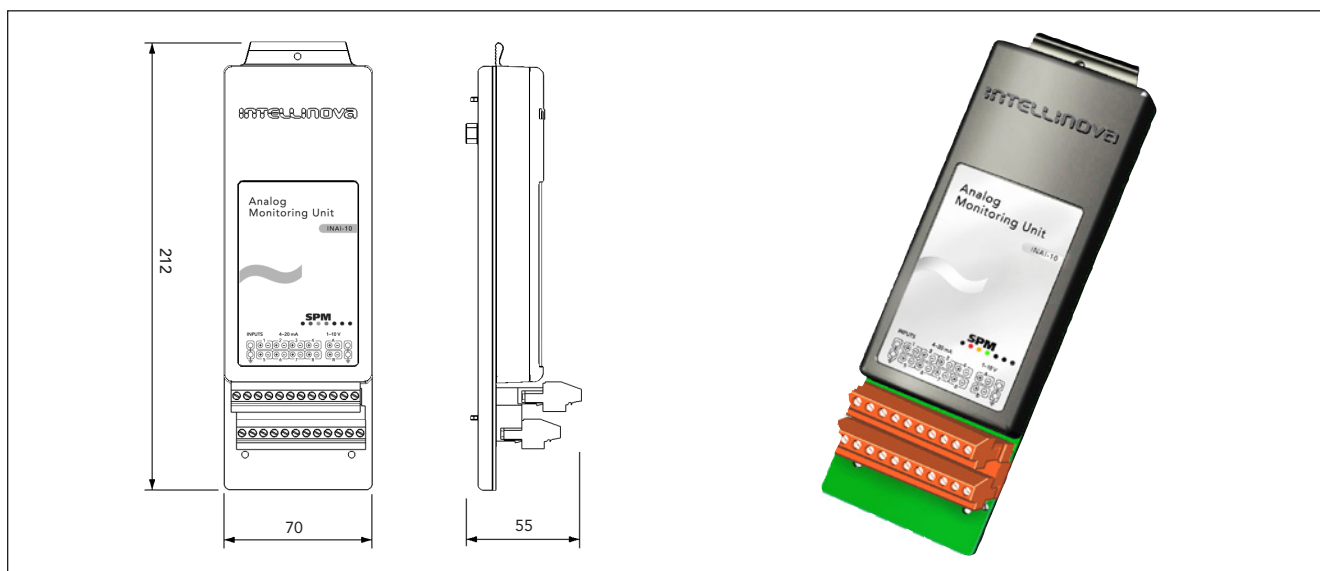


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Intellinova® – Analog Monitoring Unit INAI10



The Analog Monitoring Unit INAI10 is a part of the Intellinova system and has ten channels for continuous monitoring of analog signals. It measures 0 to 20 mA on eight channels and 0 to 10 V DC on two channels.

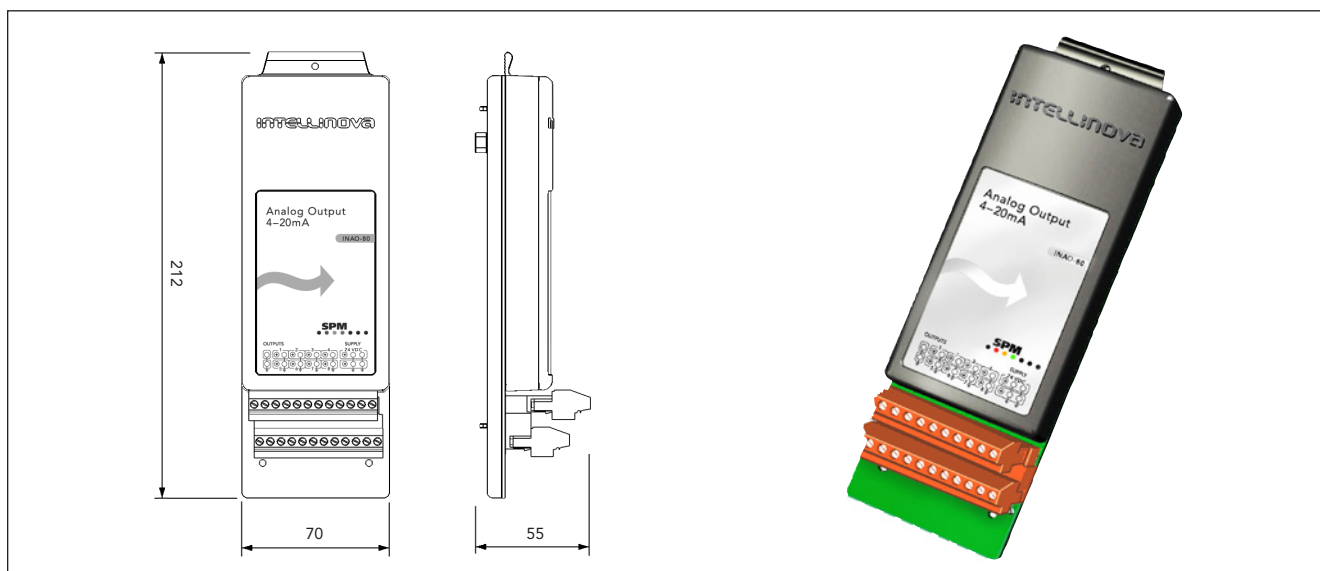
The unit is simply plugged into the socket in the Intellinova Commander Unit. Measuring units, range, quantities, alarm limits etc. are set up in Condmaster®.

Technical data

Current inputs:	8 channels, multiplexing
Voltage inputs:	2 channels, multiplexing
Input resistance:	current 100 Ω , voltage 86 k Ω
Measuring time:	approx. 1 sec. per channel
Measurement range:	0 to 20 mA, 0 to 10 V DC
Resolution:	0.01 mA, 0.02 V
Meas. accuracy:	$\pm (1\% + 0.1 \text{ mA})$, $\pm (1\% + 0.1 \text{ V})$
Design:	encapsulated circuit board, not protected
Input connectors:	screw terminal
Power consumption:	max. 0.5 W, typical 0.2 W
Operating temperature:	0 to +60 °C (32 to 140 °F)
Storage temperature:	-20 to +80 °C (-4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Mounting:	plug-in connector and holding screws for attachment in Commander Unit
Dimensions:	212 x 70 x 55 mm
Weight:	approx. 200 g



Intellinova® – Analog Output Unit INAO80



The Analog Output Unit INAO80 is a part of the Intellinova System and has eight current outputs. The unit is simply plugged into the socket in the Intellinova Commander Unit.

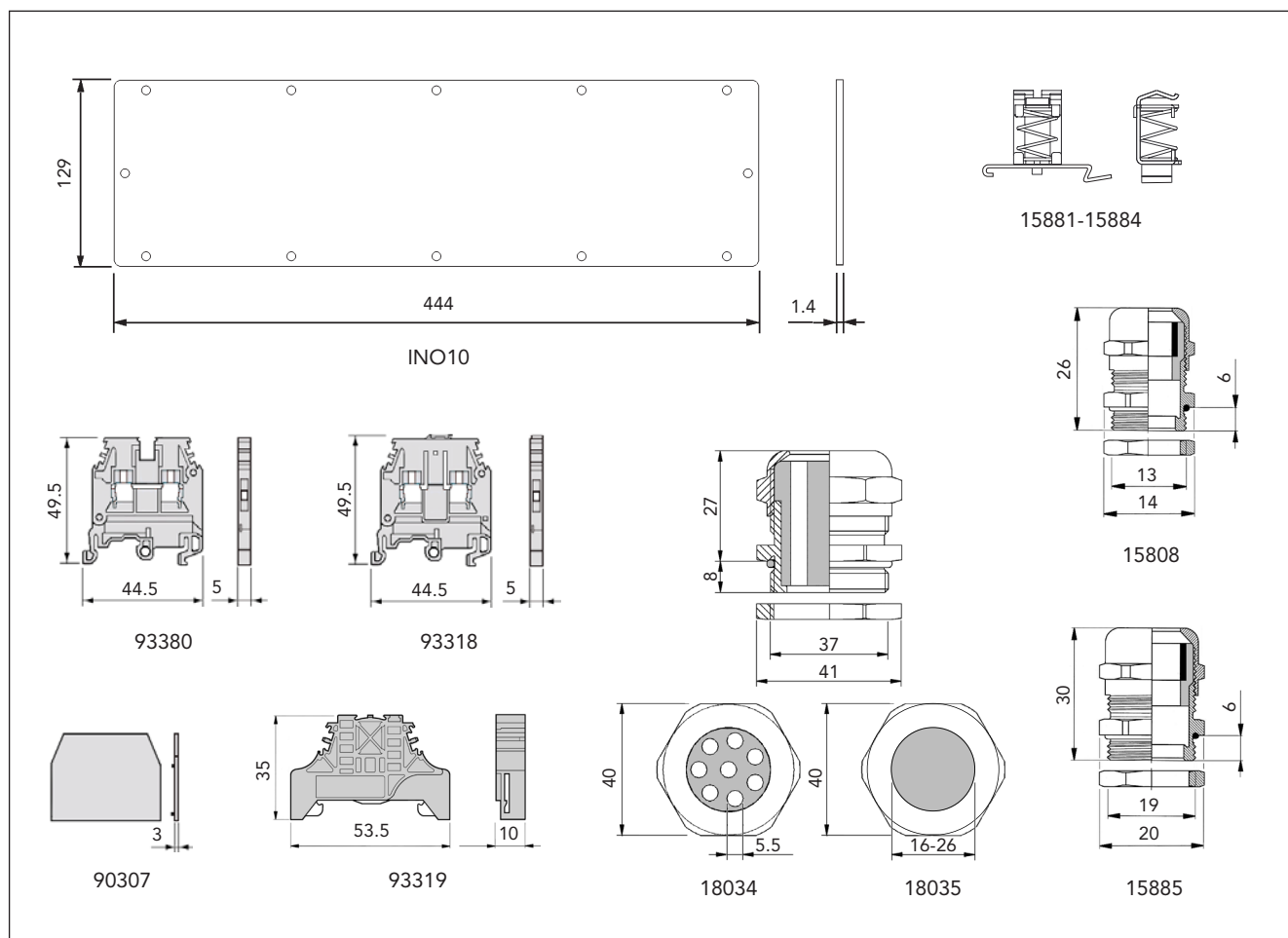
The unit converts the measuring values from the monitoring units to analog signals 4 – 20 mA for connection to PLC, DCS or other control systems.

Technical specifications

Analog outputs:	8
Output:	4 to 20 mA
Power supply:	18 to 36 V DC, nom. 24 V DC
Output connectors:	screw terminal
Design:	encapsulated circuit board, not protected
Power consumption:	0.1 W from INC40 and 2 W from external power supply
Operating temperature:	0 to +60 °C (32 to 140 °F)
Storage temperature:	-20 to +80 °C (-4 to 176 °F)
Relative humidity:	10% to 90% (non-condensing)
Mounting:	plug-in connector and holding screws for attachment in Commander Unit
Dimensions:	212 x 70 x 55 mm
Weight:	approx. 200 g



Intellinova® – Accessories

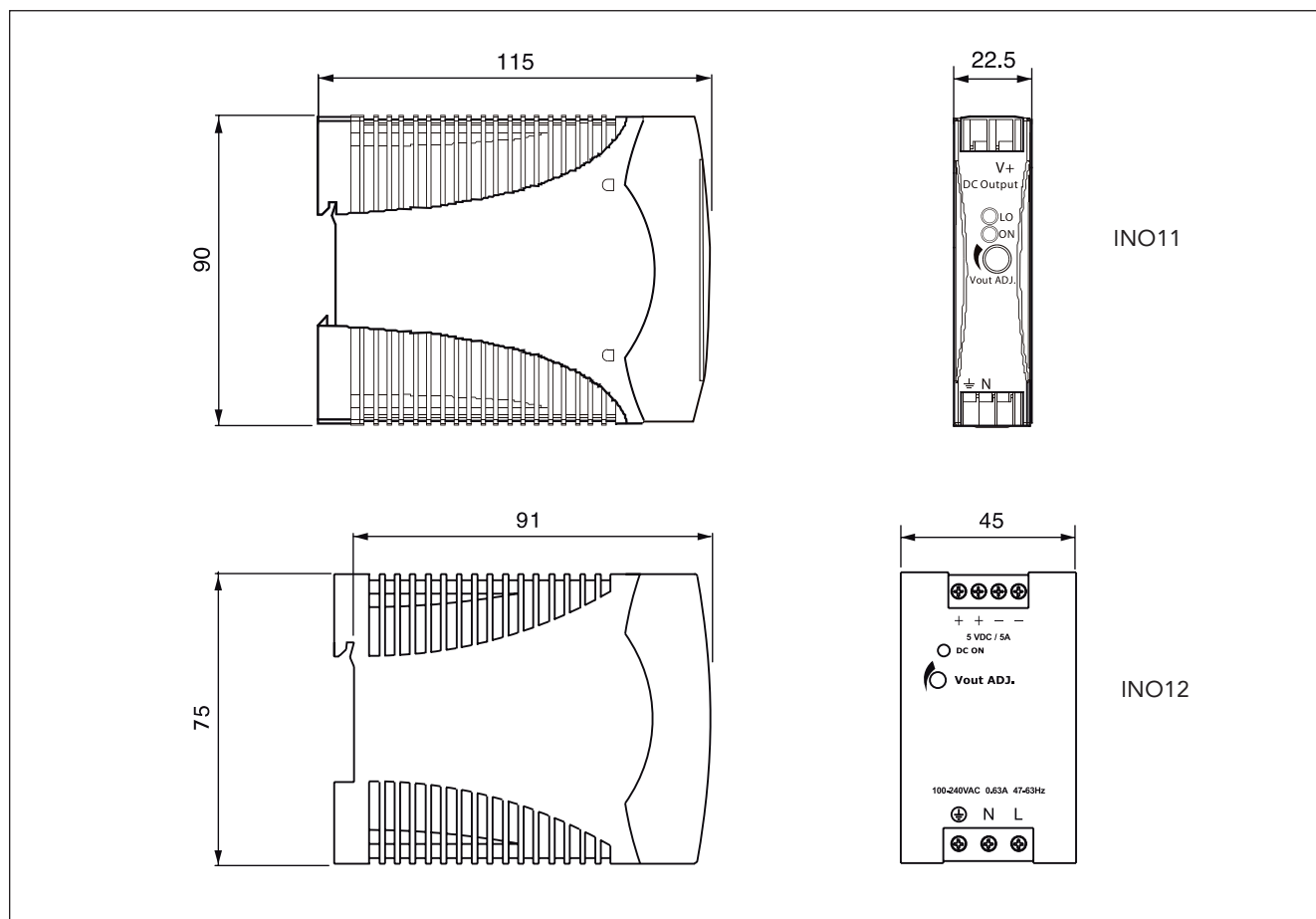


Part numbers

INO10	Blind flange for Intellinova cabinet INO18/IND16	18035	Cable inlet, Pg29, diam. 16-26 mm, IP68, brass/nickel-plated, PVC sealing
15881	Clamping yoke for earth rail, DIN, cable 3-8 mm	18122	Cable inlet, M20, for cable 4-10 mm, IP68, brass/nickel-plated, Neoprene sealing. Suitable for network cables with connector
15882	Clamping yoke for earth rail, DIN, cable 4-13.5 mm	93380	Terminal block for DIN rail, nom. area 2.5 mm ²
15883	Clamping yoke for earth rail, DIN, cable 10-20 mm	93318	Switch block for DIN rail, nom. area 2.5 mm ²
15884	Clamping yoke for earth rail, DIN, cable 15-32 mm	90307	End section for switch and terminal block
15808	Cable inlet, Pg7, for cable 2.5-6.5 mm, IP68, brass/nickel-plated, Neoprene sealing	93319	End stop for DIN rail
15885	Cable inlet, Pg11, for cable 6-11.5 mm, IP68, brass/nickel-plated, Neoprene sealing		
18034	Cable inlet, Pg29, for 8 measuring cables diam. 5.5 mm, IP65, brass/nickel-plated, PVC sealing		



Intellinova® – Power Supply Units



The power supply units in the Intellinova system are intended for mounting on standard DIN rail. INO11 is used to supply a standard Intellinova System Unit with a power consumption of max. 18 W.

Technical specifications, INO11

Rated input voltage:	100 to 240 V AC (85 to 265 VAC)
Frequency:	50/60 Hz
Power rating:	18 W
Rated output voltage:	+ 24 V DC
Voltage adjustment range:	–10% to +20%
Output current:	750 mA
Protection:	input fuse, over load, over voltage, output short circuit
Ambient temperature:	–10 to +70 °C
Storage temperature:	–25 to +85 °C (with no icing or condensation)
Relative humidity:	20% to 95% RH
Dimensions (w x h x d):	22.5 x 90 x 115 mm
Approved standards:	UL/cUL (UL508/UL1310 Listed, Class 2 Power Supply), TUV (EN60950), CE (EN5008-1/EN55022 for EMI, EN50082-1/EN55024 for EMS), FCC (Class B)

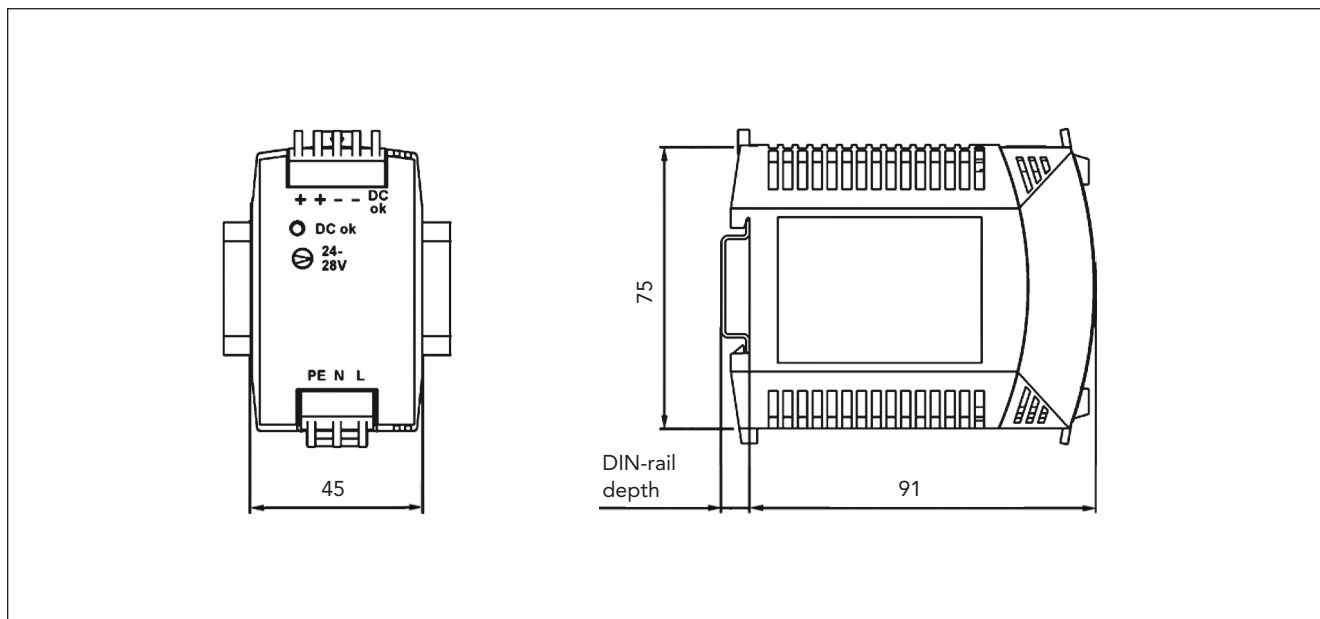
INO12 is required when supplying a System Unit and optional equipment with power consumption up to max. 50 W. The units are delivered complete with internal cabling and terminal blocks for DIN rail.

Technical specifications, INO12

Rated input voltage:	100 to 240 VAC (85 to 264 VAC)
Frequency:	47/63 Hz
Power rating:	50 W
Rated output voltage:	+ 24 V DC
Voltage adjustment range:	22.5 to 28.5 V
Rated output current:	2.1 A
Protection:	input fuse, over load, over voltage
Ambient temperature:	–10 to +71 °C
Storage temperature:	–25 to +85 °C (non condensation)
Relative humidity:	20% to 90% RH
Dimensions (w x h x d):	45 x 75 x 91 mm
Approved standards:	UL60950-1, UL508, NEC Class 2(2), EN60950-1, CE Mark Emissions - EN55011, EN55022 class B Radiated & Conducted, EN61000-6-3 Immunity - EN61000-6-2, EN61000-4-2 Level 4, EN61000-4-3, EN61000-4-6 Level 3, EN61000-4-4 Level 4 (I/P) Level 3 (O/P), EN61000-4-5 Level 4, EN61000-4-8, EN61000-4-11



Intellinova® – Power Supply Unit INO28



INO28 is a compact design power supply unit for simple mounting on a DIN rail outside an Intellinova System Unit for 19" rack. Quick connect spring-clamp terminals makes the unit easy to install. DIN rail and cables are not included.

A rugged electrical and mechanical design as well as high immunity against electrical disturbances on the mains provides reliable output power. This offers superior protection for the equipment when exposed to a critical industrial environment.

Technical specifications, INO28

Rated input voltage: 100 to 240 V AC (85 to 375 V AC)

Frequency: 50/60 Hz $\pm 6\%$

Power rating: 50 W

Rated output voltage: + 24 V DC

Voltage adjustment range: 24 to 28 V DC

Output current: 2.1 to 1.8 A

Protection: over-load, over-voltage, no-load and short-circuits

Ambient temperature: -10 to $+70$ °C

Storage temperature: -40 to $+85$ °C (with no icing or condensation)

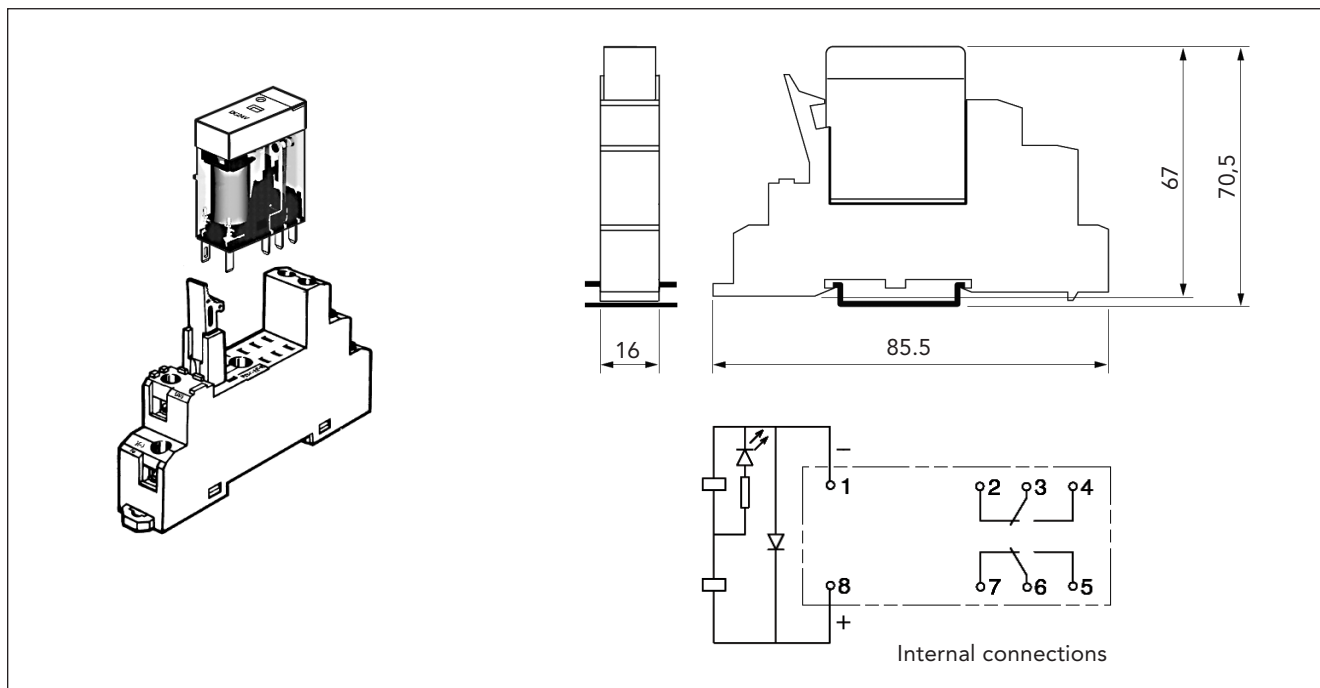
Relative humidity: 5% to 95% RH (IEC 60068-2-30)

Dimensions (w x h x d): 45 x 75 x 91 mm
(1.77 x 2.95 x 3.58 in)

Approved standards: IEC 60950-1, IEC 60601-1, UL 508 (listed), UL 60950-1 (recognized E137006), NEC Class 2 (listed), UL 1604 (recognized E246877), Marine (category: C, EMC2), SEMI F47 (120 Vac or 208 Vac input)



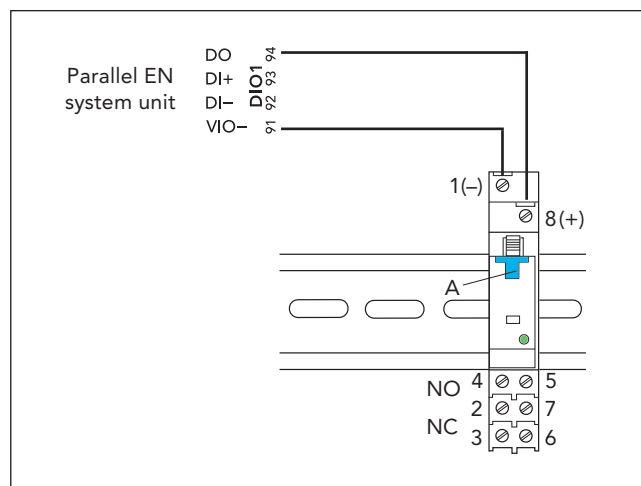
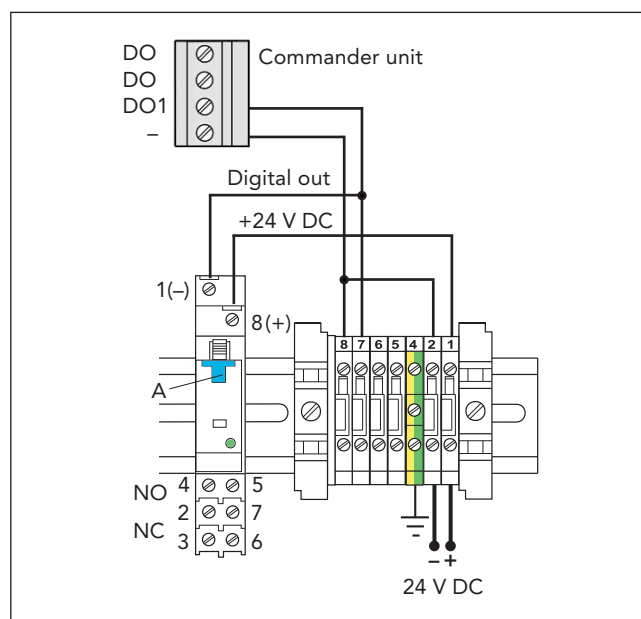
Intellinova® – Relay INO16



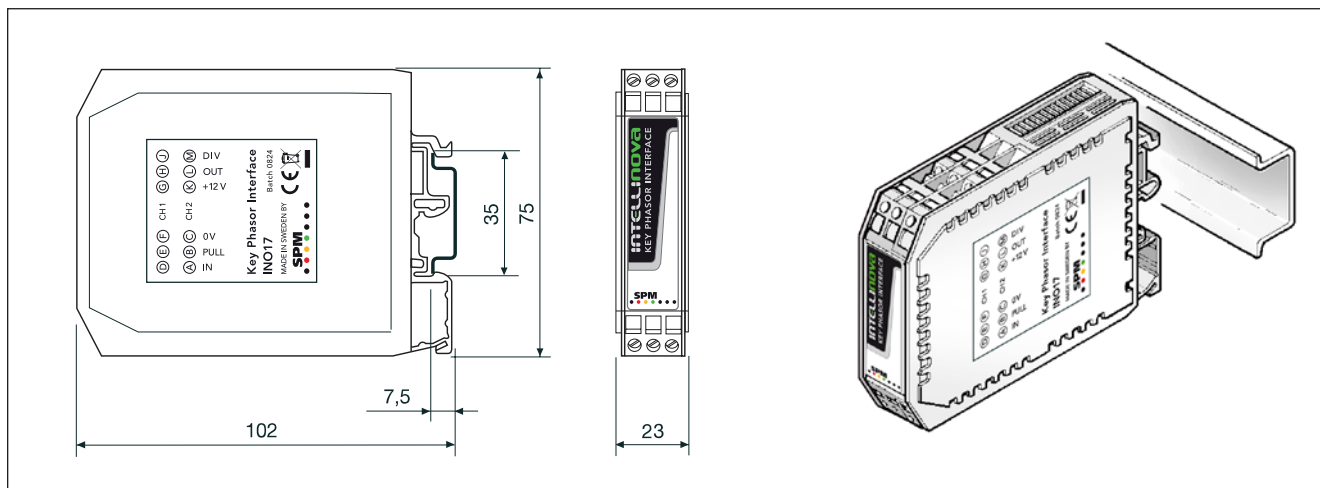
INO16 is a slim relay of plug-in type mounted in a socket for DIN rail mounting. It has a LED indicator showing mechanical operation and a test button (A). The relay is delivered complete with socket and internal cabling for Intellinova system unit.

Technical specifications

Poles: 2
 Rated coil voltage: 24 VDC
 Rated coil current: 21.6 mA
 Power consumption: 0.53 W
 Load: resistive load ($\cos\phi = 1$), inductive load ($\cos\phi = 0.4$; $L/R = 7$ ms)
 Rated load: resistive; 5 A/250 VAC, 5 A/30 VDC
 inductive; 2 A/250 VAC, 3 A/30 VDC
 Rated carry current: 5 A
 Max. switching voltage: 380 VAC, 125 VDC
 Max. switching current: 5 A
 Max. switching power: resistive; 1250 VA, 150 W
 inductive; 500 VA, 90 W
 Amb. temperature: -40° to 70° °C (non-condensing)
 Amb. humidity: 5% to 85% (operating)
 Dimensions: 85.5x67x16 mm
 Mounting: DIN rail
 Approved standards: UL508 (File No. E41643), IEC/VDE (EN61810), CSA 22.2 No.0, No.14 (File No. LR311928), LR



Intellinova® – Key phasor interface INO17



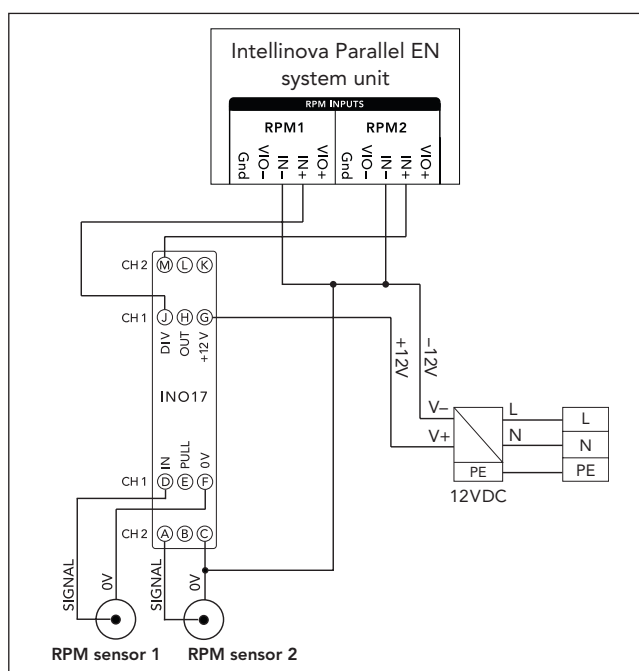
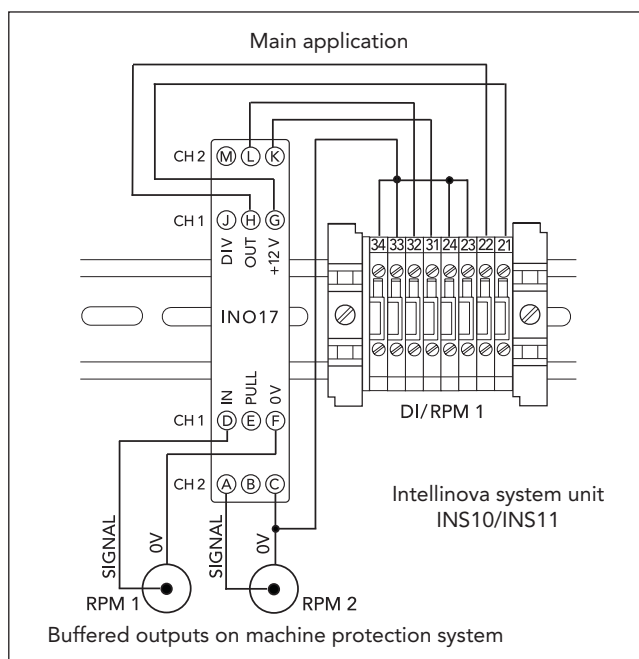
INO17 is a tachometer sensor interface ideal for connecting the Intellinova online system to buffered outputs of a machine protection system. It has two input channels with common 12V power supply from Intellinova. The interface has three main functions:

1. It converts signals from proximity probes (Eddy current) via buffered outputs of a machine protection system. The interface will automatically find the voltage threshold for the various sensors.
2. When using sensors with high output frequency the 'DIV' output can be used for division of the frequency to 1/10 of the input signal. Additional division to 1/100 can be made by connecting both channels in series.
3. When the interface is connected to an open collector output the 'PULL' input can be used to ensure the trigger level and filter out noise.

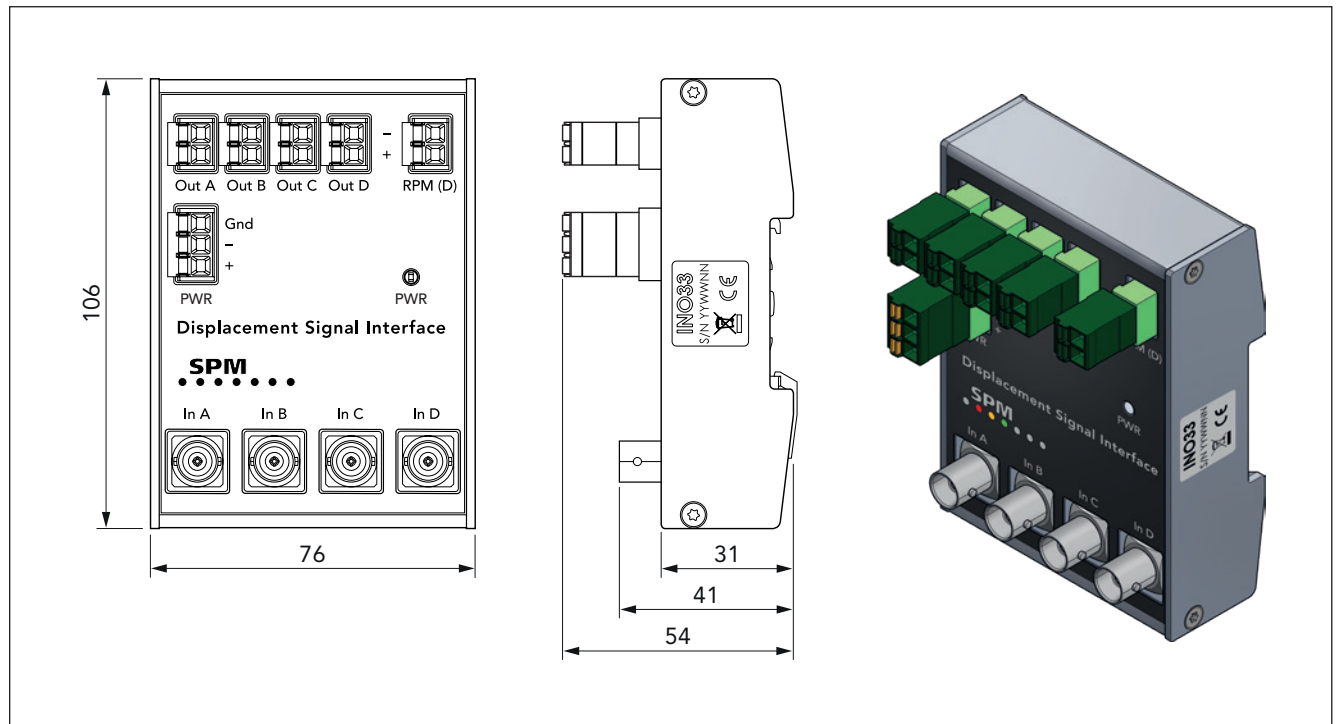
INO17 is intended for DIN rail mounting and is delivered with internal cabling for connection to the Intellinova system unit.

Technical specifications

Power supply:	12 VDC
Power consumption:	0.3 W
Pulse frequency:	max. 100 kHz at 50% duty cycle
Pulse amplitude:	min. 2V
Input pulse:	low level –33 V to +2.5 V
	high level –22 V to +33 V
Amb. temperature:	0° to 60 °C (non-condensing)
Amb. humidity:	10% to 90% (operating)
Dimensions:	102x23x75 mm
Mounting:	DIN rail 35 mm



Displacement signal interface



The displacement signal interface is an adapter that enables connection of inductive proximity sensors to the online system Intellinova Parallel EN. INO33 converts up to four signals from inductive proximity sensors, via buffered outputs of a machine protection system, for connection to the transducer inputs of Intellinova Parallel EN system unit (TD-543).

A keyphasor signal can be received from the rotating shaft to input **In D**, provided that the generated once-per-revolution voltage pulse is at least 2 V with a minimum pulse width of 5 μ s. The channel D output to INCEN16 is then available on **Out D** while there is a speed signal available on **RPM (D)**.

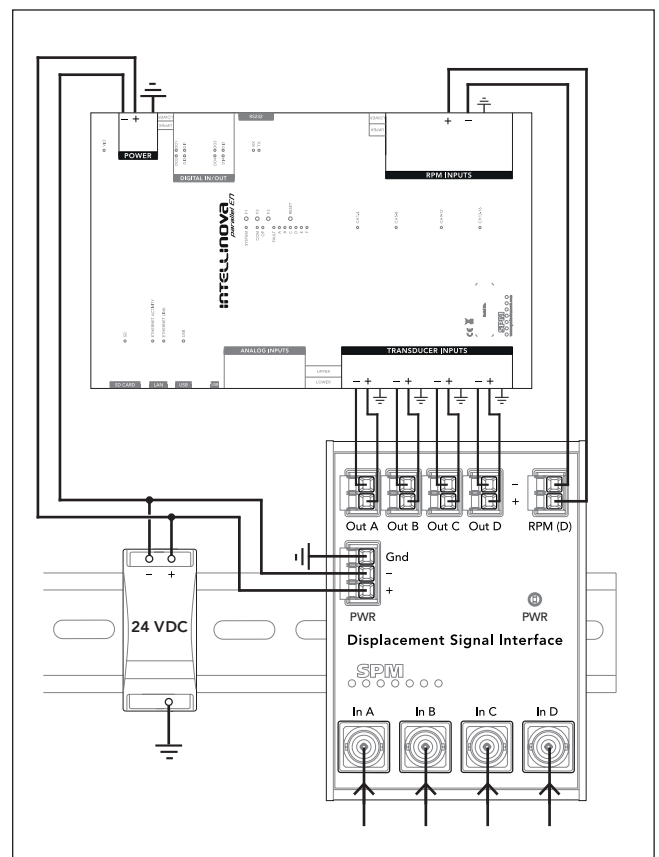
INO33 is intended for DIN rail mounting and is delivered with internal cabling for connection to the transducer inputs on INCEN16. It is powered with 18-36 V and preferably uses the same power supply as INCEN16.

Technical specifications

Power supply:	18-36 VDC
Power consumption:	max. 1.5 W
Ambient temperature:	0° to 60 °C
Ambient humidity:	10% to 90% (operating)
Dimensions:	106x76x54 mm
Mounting:	DIN rail, 35 mm
Input signal:	negative -25 V to 0 V positive 0 V to 25 V
Signal frequency/speed:	0 Hz to 10 kHz/600 000 RPM
Pulse amplitude:	min. 2 V
Pulse frequency:	0.1 Hz to 10 kHz
Duty cycle, pulse:	min. 1% and/or min. 5 μ s pulse width

Part numbers

INO33 Displacement signal interface

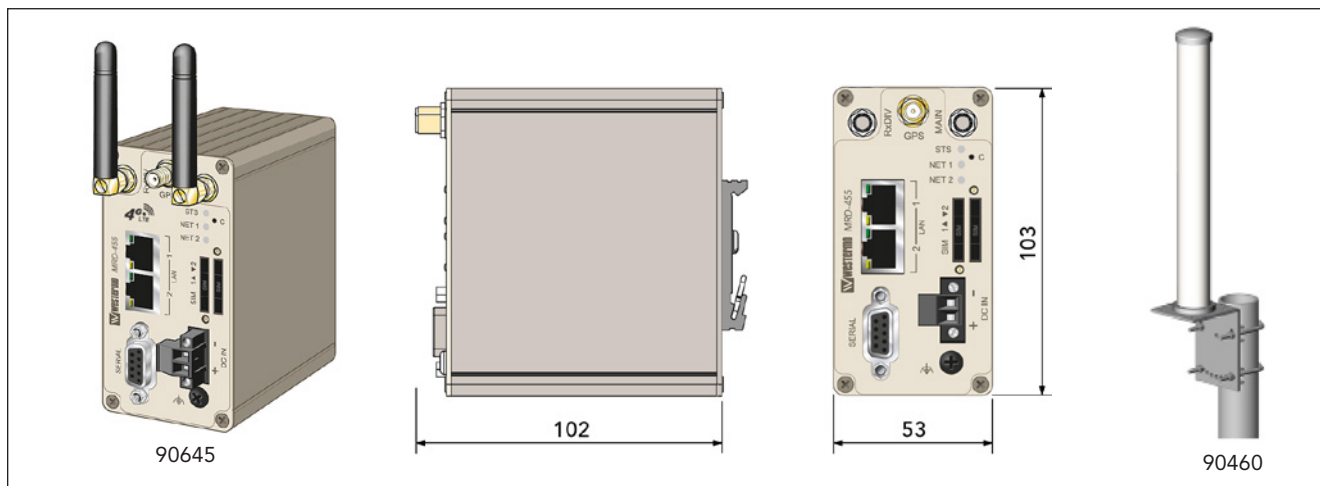


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Intellinova® – 4G Router 90645



90645 is an industrial mobile broadband GPRS/EDGE/3G/4G LTE router that uses the Internet to cost effectively inter-connect systems, allowing HMI, PLCs, sensors etc. to communicate with each other.

A compact design bundled with all interfaces and LEDs in the front make the unit extremely well suited for industrial applications. With isolation between the PSU and the Ethernet and serial ports the router protects against issues caused by ground loops.

Technical specifications

Dimension W x H x D	53x103x103 mm (2.08x4.05x4.05 in)
Weight	0.4 kg
Degree of protection	IP40

Power (isolated)

Operating voltage	10 to 60 VDC
Rated voltage	12 to 48 VDC
Rated current	140 mA @ 24 VDC

Interfaces

RS-232	1 x 300 bit/s to 115.2 kbit/s
Ethernet TX	2 x 10 Mbit/s or 100 Mbit/s
SIM	2 x SIM slots (3 volts SIM supported)

Antennas

Connection	Main and GPS SMA female
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Temperature

Operating	-40 to +70°C (-40 to +158°F)
Storage & Transport	-40 to +85°C (-40 to +185°F)

Ethernet Technologies

	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseTX
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Cellular Technologies

	Circuit Switched Data mode (CSD) GSM, GPRS Multi-slot class 12, mobile station class B, PBCCH support, coding schemes CS 1-4, EDGE Multi-slot class 12 (max 236.8 kbit/s), mobile station class B, modulation and coding scheme MCS 1-9, 3G (WCDMA / UMTS) 384 kbit/s downlink / uplink HSDPA up to 42.0 Mbit/s downlink, HSUPA up to 5.7 Mbit/s uplink, 4G LTE up to 100 Mbit/s downlink, 4G LTE up to 50 Mbit/s uplink
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Serial Port Technologies

	RS-232, Serial Over IP (Serial Extender and Virtual Serial Port), Modem emulation, AT command interpreter, MODBUS, DNP3, SMS
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The dual SIM support in the device ensures that site connectivity is not dependent on a single carrier, should something happen the unit just switches to the other SIM.

The router offers protection of transmissions from malicious eavesdroppers via encrypted communication tunnels (VPN), and features a simple, yet powerful, packet inspection firewall.

Layer-2 QoS

IEEE 802.1p Class of Service

IP Routing, Firewall,

VPN and Cyber Security

Static IP routing
Dynamic IP routing, RIPv1/v2
VRRP
GRE
Stateful inspection Firewall / ACL, NAT, Port Forwarding
25 x IPsec VPN, PSK & X.509, Fail-over
1 x L2TP client
1 x PPTP client
1 x OpenVPN / SSL VPN client
Simple Certificate Enrollment Protocol
RADIUS
PPP Dial in/Dial out

Manageability

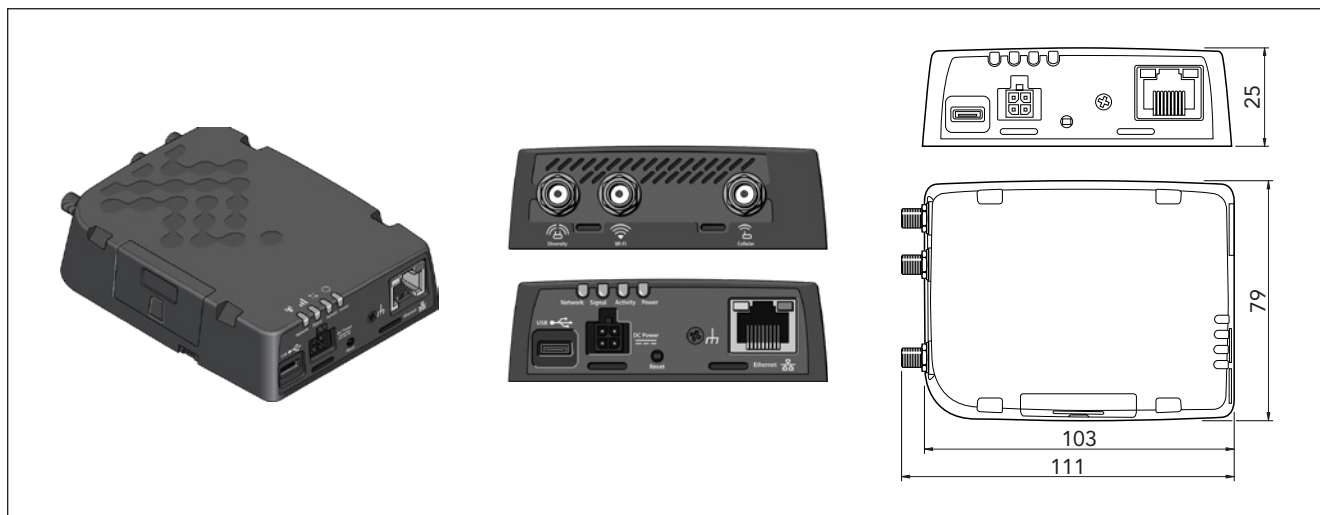
Management tools: Web interface (HTTP and HTTPS), Command Line Interface (CLI) via SSHv2 and TELNET, SNMPv1/v2c/v3, SMS Control
Flexible alarm/event handling system
Syslog (log files and remote syslog server)
SNTP (NTP client)
DHCP client
DHCP server
DDNS (Dynamic DNS update client)

Options

90460	Omni-directional antenna for 4G router 90645
90451	Network cable for 4G router, shielded, 0.3 m
90457	Internal antenna cable with connectors, 0.3 m
90500	External antenna cable with connectors, 0.75 m
90580	External antenna cable with connectors, 2 m
90458	External antenna cable with connectors, 10 m
93001	Bulkhead adapter for antenna cable
93002	Dust cap for bulkhead adapter 93001



4G/Wi-Fi router 90679



The 4G/Wi-Fi router 90679 is a compact LTE and LTE-M/ NB-IoT router, which offers out-of-the-box connectivity that is simple to install, and easy to manage.

90679 provides purpose-built, secure, managed LTE networking. 90679 is ideal for connecting industrial, remote data logging and sensing equipment in protected locations, and enables processing of IoT data at the edge.

The router is designed to meet the environmental and performance requirements of industrial applications, while delivering superior reliability and uninterrupted operation in fixed, indoor and protected outdoor environments.

Technical specifications

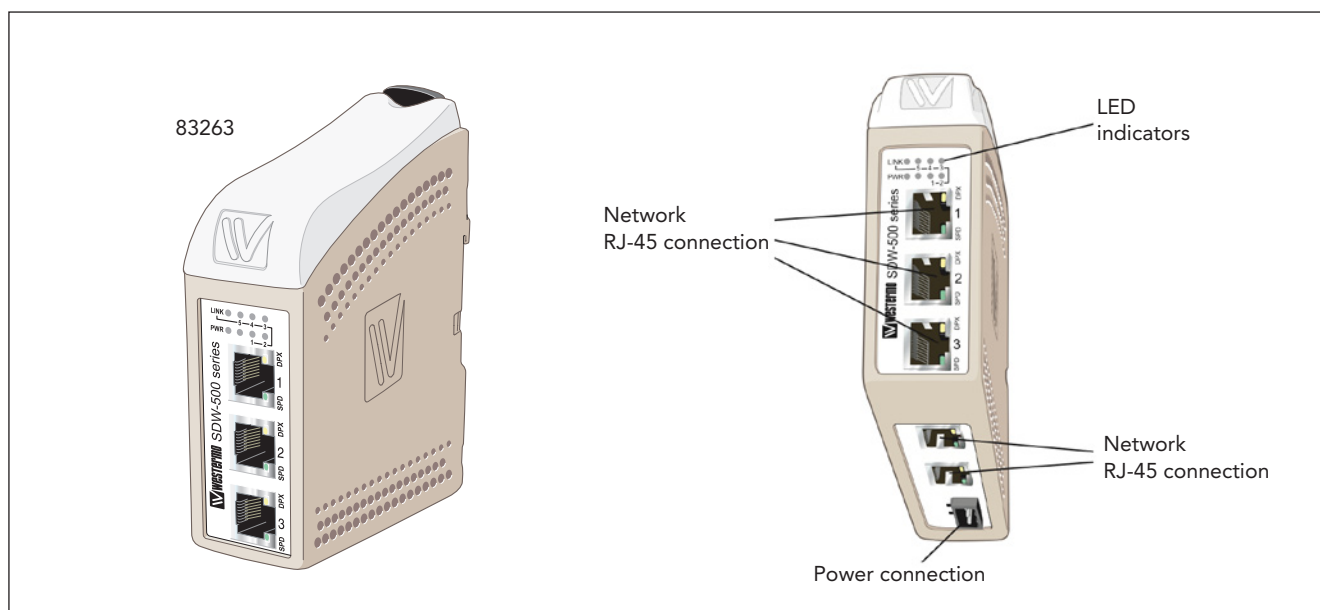
4G frequency band:	2100(B1), 1800(B3), 2600(B7), 900(B8), 800(B20), 700(B28)
3G frequency band:	2100(B1), 900(B8)
2G frequency band:	900, 1800
Firewall:	NAT mode or fully transparent mode
Applications:	SMS, Telnet/SSH, Telnet, SMTP, SNMP, SNTP
Speed 4G (LTE):	uplink: 50 Mbps, downlink: 150 Mbps
Speed 3G (HSPA+):	uplink: 5.76 Mbps, downlink: 21 Mbps
VPN:	IPsec, GRE, and OpenVPN Client, up to five concurrent tunnels, Split Tunnel, Dead Peer Detection (DPD)
Wi-Fi:	Dual Band 2.4/5GHz Wi-Fi, 802.11 b/g/n/ac (Wave2 Client Mode), support for 10 clients, WPA2 Enterprise, Access Point or Client Mode, Single SSID Support
Connections:	1 pc RJ45: Gigabit LAN with 10/100/1000 Mbps Ethernet, 1 pc micro-USB, 1 pc I/O via power connector. Digital/analog input.
Operating temp.:	-30° to +65 °C (-22° to +149 °F)
Storage temp.:	-40° to +85 °C (-40° to +185 °F)
Power supply:	7-36V DC (DC cable included)
Antennas:	3G/4G (SMA), Wi-Fi (RP-SMA)
Dimensions:	111x79x25 mm
Weight:	397 g

Part numbers

90679 Wireless 4G/Wi-Fi router



Ethernet switch 83263



83263 is an unmanaged 5 port industrial Ethernet switch designed for easy use in heavy duty industrial applications. The unit supports 802.1Q long packets which allows all standard industrial Ethernet protocols to be used. Total galvanic isolation between each port is reinforced by the unique isolation provided between each chassis screen helping to avoid ground loop currents.

Network diagnostics are simplified with the inclusion of port mirroring on one port allowing data flow through the switch to be monitored using a network analyzer. All five ports can have data rate and flow control locked by DIP switch which can eliminate problems with old legacy Ethernet equipment that is unable to support auto negotiation.

Technical specifications

Dimensions: 34x123x121 mm (1.33x4.84x4.76 in)
Weight: 0.25 kg
Degree of protection: IP 21
Operating voltage: 9.6 – 57.6 VDC
Rated current: 320 mA @ 12VDC
Ethernet TX: 5xRJ-45, 10 Mbit/s or 100 Mbit/s
Temp. range: -25 to +70 °C (-13 to +158 °F)

Agency approvals and standards compliance

EMC EN 61000-6-2, Immunity industrial environments
EN 61000-6-3, Emission residential environments
EN 61000-6-4, Emission industrial environments
E-Mark, Road Vehicles, 10R-04 7216 (optional art. no 3644-6001)
Safety UL 60950-1, 1st Edition
Marine DNV Standard for Certification no. 2.4

Part numbers

83263 Ethernet switch with RJ-45 connection

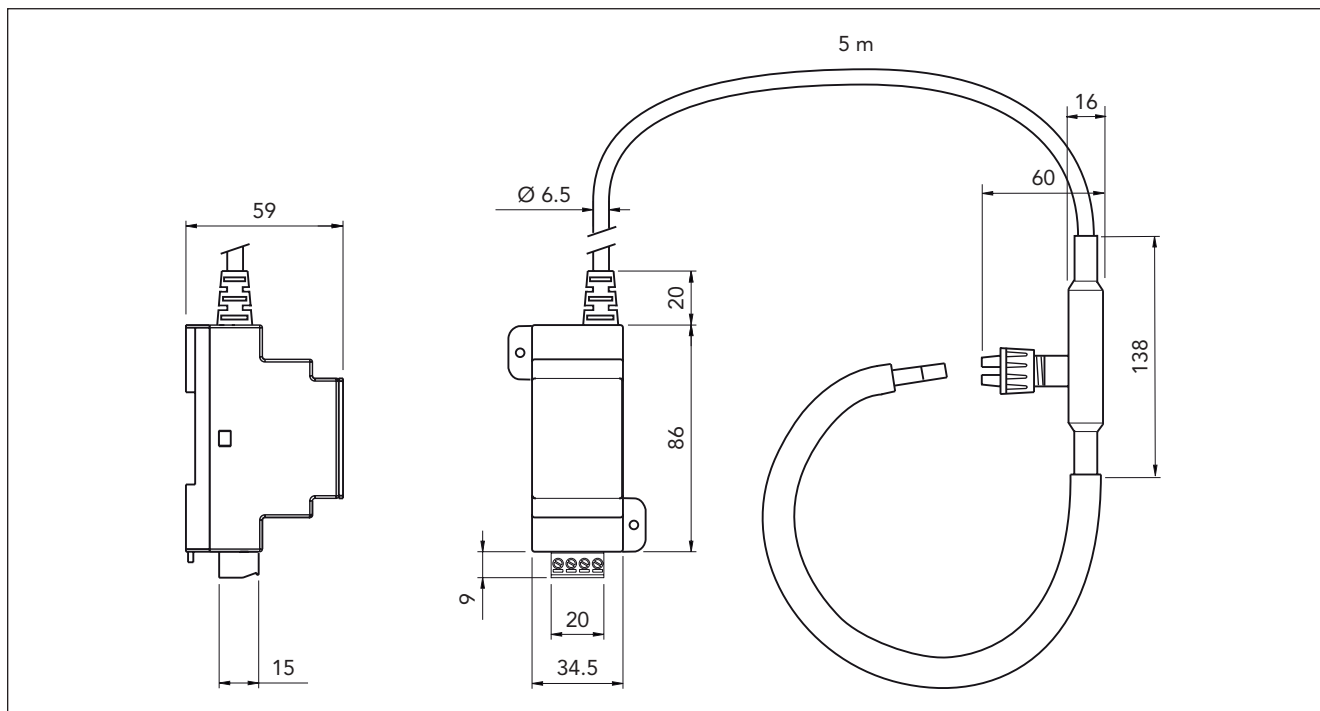


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Intellinova® – Rogowski Coil 90015



The Rogowski Coil is an industrially specified AC current transducer for permanent installation. It combines the benefits of a thin, flexible, clip-around coil sensor with a signal conditioner providing true rms measurement of AC current.

The Rogowski coil is specified with industry standard output 4-20mA, making it ideal for use with the Intellinova online condition monitoring system.

Featuring

- True rms measurement of AC current up to 2500 A
- Easy to install flexible "clip-around" sensor
- Fully isolated measurement
- Safety approvals EN61010

Technical specifications

Rated current (rms):	2500 A
Rated output:	4–20 mA (full scale FS)
Output limit:	150% FS (7.5 V or 28 mA)
Supply voltage:	12 VDC (–10%) to 24 VDC (+20%)
Power consumption:	0.7 W
Operating temperature:	–5 °C to +65 °C
Bandwidth (-3dB):	2 Hz to 100 kHz
Max. response time:	1000 ms
Accuracy:	±1.5% at 25 °C
Output load:	<300 Ohm
Coil insulation voltage:	10 kV
Coil length:	300 mm (11.8")
Cable length:	5 m
Output connectors:	Screw terminals
Wire size:	0.5 to 4.0 mm ²
Mounting:	DIN rail or panel mount (M4)
Weight:	470 g
Standards and approvals:	Complies with EN 61010:2001, EMC EN 61326, CE marked

