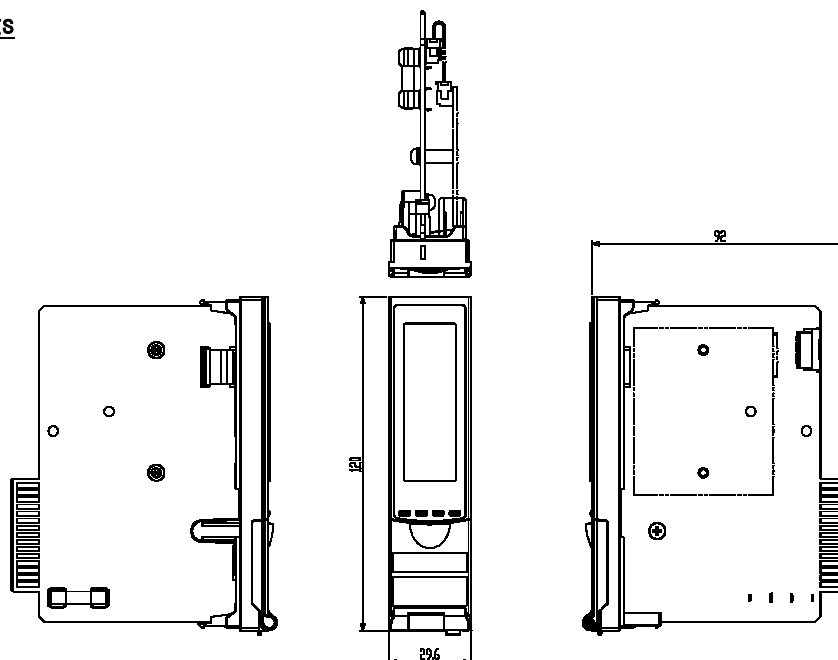


INDICATOR/ALARM UNIT GP-5001 SPECIFICATION

Detectable gas	Combustible gas
Applicable detector head	Catalytic combustion method gas detector head
Gas concentration display	LCD(digital and bar-meter display<three colors:green, orange, red>>)
Power indication	POWER lamp lighting(green)
Gas alarm type	Two-level alarm(H-HH)
Gas alarm indication	1st : ALM1 lamp blinking or lighting(red) 2nd : ALM2 lamp blinking or lighting(red)
Gas alarm action	Latched or Auto-recover, Lock-in
Gas alarm contact	Each no-voltage contact 1a or 1b(contact output for each alarm) · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Trouble alarm · Self diagnosis	System failure/Detecting circuit failure/Communication failure(digital transmission only)
Trouble alarm indication	FAULT lamp blinking(yellow)/content display
Trouble alarm action	Auto-recover
Trouble alarm contact	No-voltage contact 1a or 1b · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Contact capacity	AC100V · 0.5A/DC30V · 1.5A(resistive load)
Transmission scheme	Analog transmission/Digital transmission 【Option】
Specification of transmission	Analog transmission : DC4~20mA(non-isolated · load resistance less than 300Ω)/Digital transmission : RS-485
Gas detector head signal	Direct signal from sensor
Cable between detector	CVV worth cable(1.25sq or 2.0sq) · 4-core
Distance between detector	Less than 2km by CVV · 2.0sq cable
Various functions	Alarm delay/Suppress/Zero tracking/Peak hold/Calibration history/ Alarm trend history/Event history
Power supply	DC24V(DC21.6~26.4V)
Power consumption	MAX. 7W(detector head including. Approx. 10VA by using Multi-Case)
Initial clear	Approx. 25sec
Operating temperature	-10~40°C(non-rapidly-vary)
Operating humidity	10~90%RH(non-condensing)
Structure	Housing type for the case · front identification card type(put into Single case or Multi case)
Outer dimension	Approx. 29.6(W) × 120(H) × 92(D)mm(projection excluding)
Weight	Approx. 0.10kg(unit only)

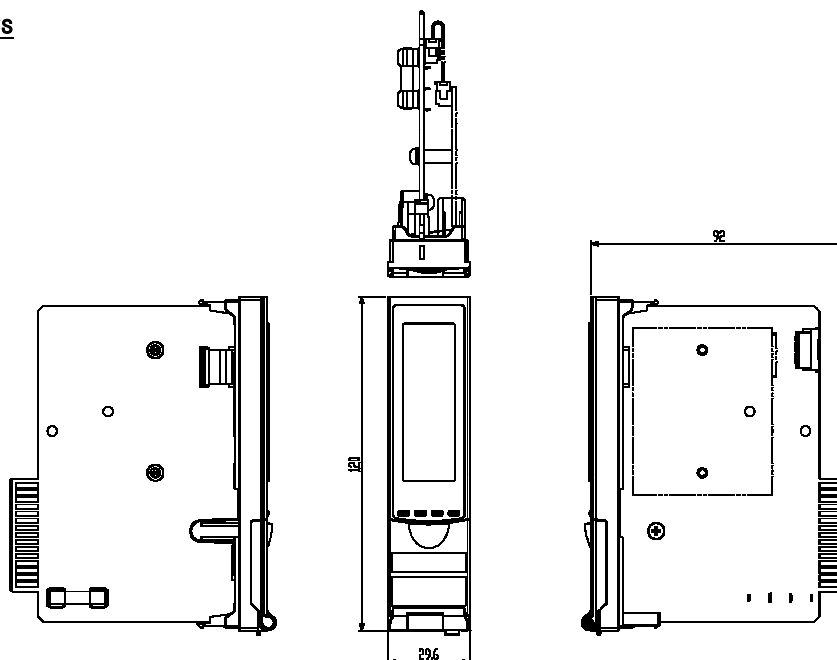
Outline Drawings



INDICATOR/ALARM UNIT NC-5001 SPECIFICATION

Detectable gas	<u>Combustible gas</u>
Applicable detector head	<u>New ceramic method gas detector head</u>
Gas concentration display	LCD(digital and bar-meter display<three colors:green, orange, red>>)
Power indication	POWER lamp lighting(green)
Gas alarm type	Two-level alarm(H-HH)
Gas alarm indication	1st : ALM1 lamp blinking or lighting(red) 2nd : ALM2 lamp blinking or lighting(red)
Gas alarm action	<u>Latched or Auto-recover, Lock-in</u>
Gas alarm contact	<u>Each no-voltage contact 1a or 1b(contact output for each alarm) · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)</u>
Trouble alarm · Self diagnosis	System failure/Detecting circuit failure/Communication failure(digital transmission only)
Trouble alarm indication	FAULT lamp blinking(yellow)/content display
Trouble alarm action	Auto-recover
Trouble alarm contact	<u>No-voltage contact 1a or 1b · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)</u>
Contact capacity	AC100V · 0.5A/DC30V · 1.5A(resistive load)
Transmission scheme	Analog transmission/Digital transmission 【Option】
Specification of transmission	Analog transmission : DC4~20mA(non-isolated · load resistance less than 300Ω)/Digital transmission : RS-485
Gas detector head signal	Direct signal from sensor
Cable between detector	CVV worth cable(1.25sq or 2.0sq) · 4-core
Distance between detector	Less than 2km by CVV · 2.0sq cable
Various functions	Alarm delay/Suppress/Zero tracking/Peak hold/Calibration history/Alarm trend history/Event history
Power supply	DC24V(DC21.6~26.4V)
Power consumption	MAX. 7W(detector head including. Approx. 10VA by using Multi-Case)
Initial clear	Approx. 25sec
Operating temperature	-10~40°C(non-rapidly-vary)
Operating humidity	10~90%RH(non-condensing)
Structure	Housing type for the case · front identification card type(put into Single case or Multi case)
Outer dimension	Approx. 29.6(W) × 120(H) × 92(D)mm(projection excluding)
Weight	Approx. 0.10kg(unit only)

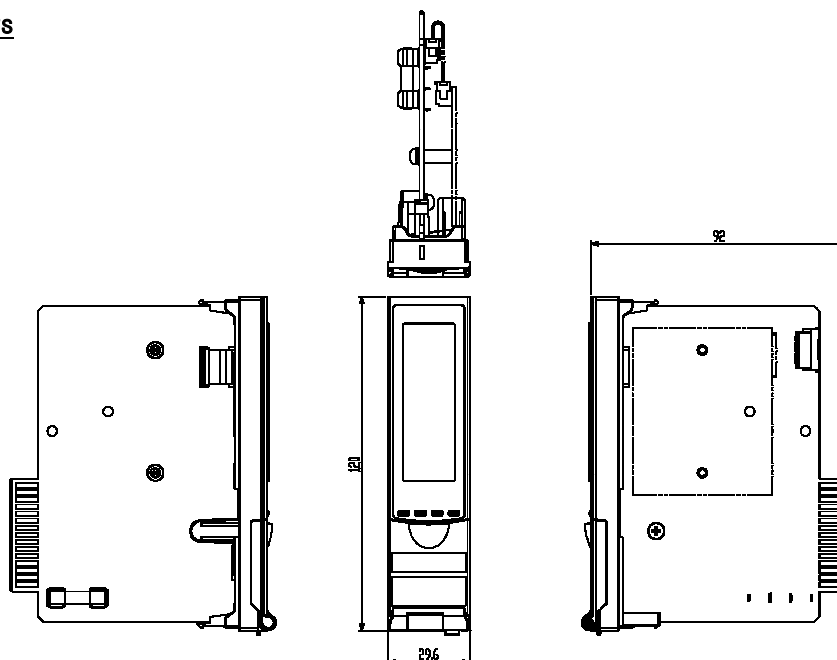
Outline Drawings



INDICATOR/ALARM UNIT NC-5001W SPECIFICATION

Detectable gas	Combustible gas
Applicable detector head	New ceramic method gas detector head
Gas concentration display	LCD(digital and bar-meter display<three colors:green, orange, red>>)
Power indication	POWER lamp lighting(green)
Gas alarm type	Two-level alarm(H-HH)
Gas alarm indication	1st : ALM1 lamp blinking or lighting(red) 2nd : ALM2 lamp blinking or lighting(red)
Gas alarm action	Latched or Auto-recover, Lock-in
Gas alarm contact	Each no-voltage contact 1a or 1b(contact output for each alarm) · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Trouble alarm · Self diagnosis	System failure/Detecting circuit failure/Communication failure(digital transmission only)
Trouble alarm indication	FAULT lamp blinking(yellow)/content display
Trouble alarm action	Auto-recover
Trouble alarm contact	No-voltage contact 1a or 1b · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Contact capacity	AC100V · 0.5A/DC30V · 1.5A(resistive load)
Transmission scheme	Analog transmission/Digital transmission 【Option】
Specification of transmission	Analog transmission : DC4~20mA(non-isolated · load resistance less than 300Ω)/Digital transmission : RS-485
Gas detector head signal	Direct signal from sensor
Cable between detector	CVV worth cable(1.25sq or 2.0sq) · 4-core
Distance between detector	Less than 2km by CVV · 2.0sq cable
Various functions	Alarm delay/Suppress/Zero tracking/Peak hold/Calibration history/ Alarm trend history/Event history
Power supply	DC24V(DC21.6~26.4V)
Power consumption	MAX. 7W(detector head including. Approx. 10VA by using Multi-Case)
Initial clear	Approx. 25sec
Operating temperature	-10~40°C(non-rapidly-vary)
Operating humidity	10~90%RH(non-condensing)
Structure	Housing type for the case · front identification card type(put into Single case or Multi case)
Outer dimension	Approx. 29.6(W) × 120(H) × 92(D)mm(projection excluding)
Weight	Approx. 0.10kg(unit only)

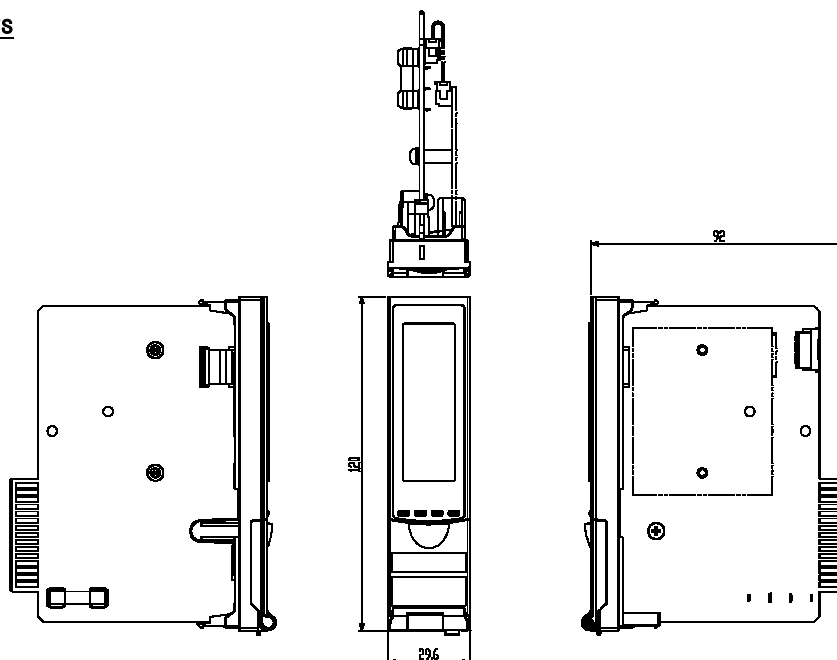
Outline Drawings



INDICATOR/ALARM UNIT NP-5001 SPECIFICATION

Detectable gas	High concentration gas
Applicable detector head	Thermal conductivity method gas detector head
Gas concentration display	LCD(digital and bar-meter display<three colors:green, orange, red>>)
Power indication	POWER lamp lighting(green)
Gas alarm type	Two-level alarm(H-HH)
Gas alarm indication	1st : ALM1 lamp blinking or lighting(red) 2nd : ALM2 lamp blinking or lighting(red)
Gas alarm action	Latched or Auto-recover, Lock-in
Gas alarm contact	Each no-voltage contact 1a or 1b(contact output for each alarm) · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Trouble alarm · Self diagnosis	System failure/Detecting circuit failure/Communication failure(digital transmission only)
Trouble alarm indication	FAULT lamp blinking(yellow)/content display
Trouble alarm action	Auto-recover
Trouble alarm contact	No-voltage contact 1a or 1b · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Contact capacity	AC100V · 0.5A/DC30V · 1.5A(resistive load)
Transmission scheme	Analog transmission/Digital transmission 【Option】
Specification of transmission	Analog transmission : DC4~20mA(non-isolated · load resistance less than 300Ω)/Digital transmission : RS-485
Gas detector head signal	Direct signal from sensor
Cable between detector	CVVS worth shielded cable(1.25sq or 2.0sq) · 4-core
Distance between detector	Less than 2km by CVVS · 2.0sq cable
Various functions	Alarm delay/Suppress/Peak hold/Calibration history/ Alarm trend history/Event history
Power supply	DC24V(DC21.6~26.4V)
Power consumption	MAX. 7W(detector head including. Approx. 10VA by using Multi-Case)
Initial clear	Approx. 25sec
Operating temperature	-10~40°C(non-rapidly-vary)
Operating humidity	10~90%RH(non-condensing)
Structure	Housing type for the case · front identification card type(put into Single case or Multi case)
Outer dimension	Approx. 29.6(W) × 120(H) × 92(D)mm(projection excluding)
Weight	Approx. 0.10kg(unit only)

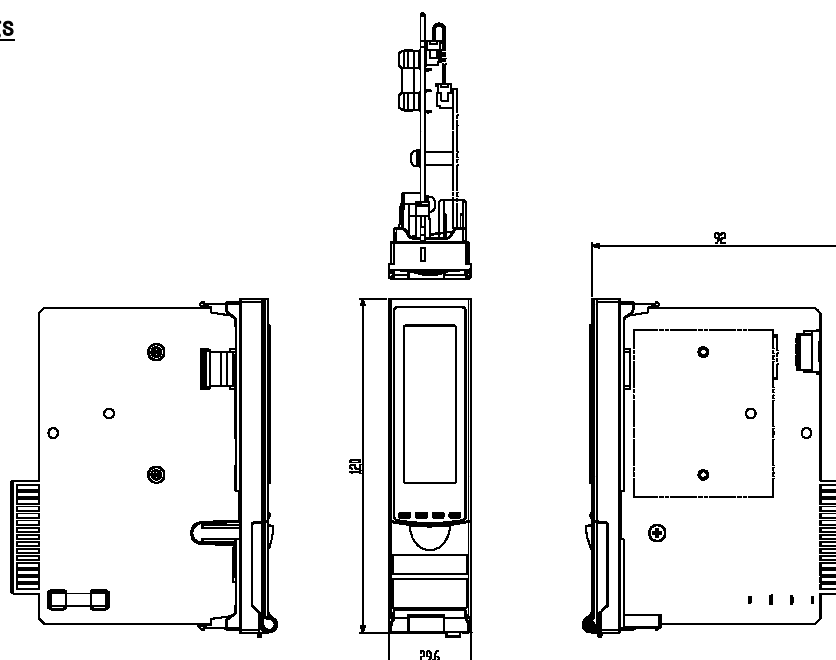
Outline Drawings



INDICATOR/ALARM UNIT SP-5001 SPECIFICATION

Detectable gas	Combustible gas/Toxic gas
Applicable detector head	Hot-wire semi-conductor method gas detector head
Gas concentration display	LCD(digital and bar-meter display<three colors:green, orange, red>)
Power indication	POWER lamp lighting(green)
Gas alarm type	Two-level alarm(H-HH)
Gas alarm indication	1st : ALM1 lamp blinking or lighting(red) 2nd : ALM2 lamp blinking or lighting(red)
Gas alarm action	Latched or Auto-recover, Lock-in
Gas alarm contact	Each no-voltage contact 1a or 1b(contact output for each alarm) · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Trouble alarm · Self diagnosis	System failure/Detecting circuit failure/Communication failure(digital transmission only)
Trouble alarm indication	FAULT lamp blinking(yellow)/content display
Trouble alarm action	Auto-recover
Trouble alarm contact	No-voltage contact 1a or 1b · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Contact capacity	AC100V · 0.5A/DC30V · 1.5A(resistive load)
Transmission scheme	Analog transmission/Digital transmission 【Option】
Specification of transmission	Analog transmission : DC4~20mA(non-isolated · load resistance less than 300Ω)/Digital transmission : RS-485
Gas detector head signal	Direct signal from sensor
Cable between detector	CVV worth cable(1.25sq or 2.0sq) · 4-core
Distance between detector	Less than 2km by CVV · 2.0sq cable
Various functions	Alarm delay/Suppress/Peak hold/Calibration history/ Alarm trend history/Event history
Power supply	DC24V(DC21.6~26.4V)
Power consumption	MAX. 7W(detector head including. Approx. 10VA by using Multi-Case)
Initial clear	Approx. 25sec
Operating temperature	-10~40°C(non-rapidly-vary)
Operating humidity	10~90%RH(non-condensing)
Structure	Housing type for the case · front identification card type(put into Single case or Multi case)
Outer dimension	Approx. 29.6(W) × 120(H) × 92(D)mm(projection excluding)
Weight	Approx. 0.10kg(unit only)

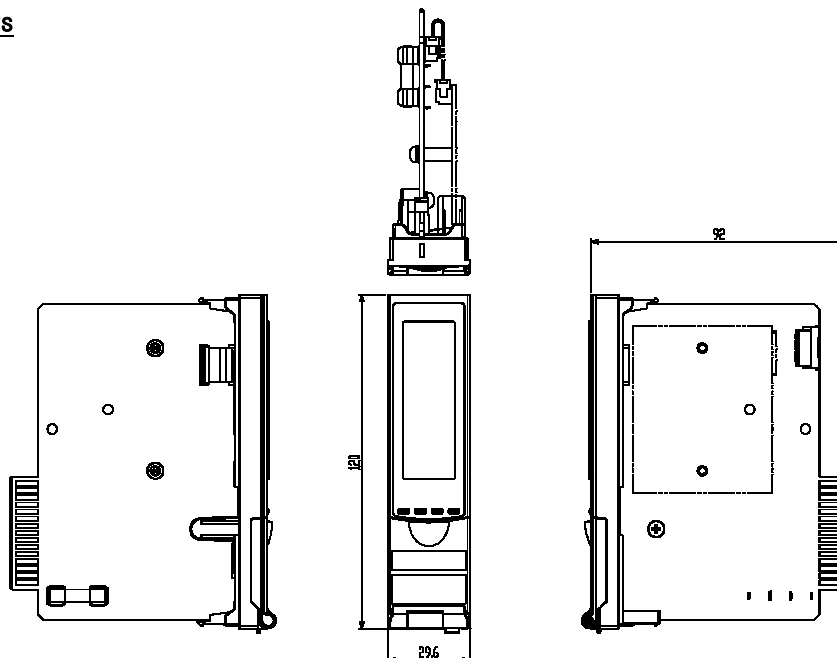
Outline Drawings



INDICATOR/ALARM UNIT GH-5001 SPECIFICATION

Detectable gas	Combustible gas/Toxic gas
Applicable detector head	Semi-conductor method gas detector head
Gas concentration display	LCD(digital and bar-meter display<three colors:green, orange, red>>)
Power indication	POWER lamp lighting(green)
Gas alarm type	Two-level alarm(H-HH)
Gas alarm indication	1st : ALM1 lamp blinking or lighting(red) 2nd : ALM2 lamp blinking or lighting(red)
Gas alarm action	Latched or Auto-recover, Lock-in
Gas alarm contact	Each no-voltage contact 1a or 1b(contact output for each alarm) · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Trouble alarm · Self diagnosis	System failure/Detecting circuit failure/Communication failure(digital transmission only)
Trouble alarm indication	FAULT lamp blinking(yellow)/content display
Trouble alarm action	Auto-recover
Trouble alarm contact	No-voltage contact 1a or 1b · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Contact capacity	AC100V · 0.5A/DC30V · 1.5A(resistive load)
Transmission scheme	Analog transmission/Digital transmission 【Option】
Specification of transmission	Analog transmission : DC4~20mA(non-isolated · load resistance less than 300Ω)/Digital transmission : RS-485
Gas detector head signal	Direct signal from sensor
Cable between detector	CVVS worth shielded cable(1.25sq or 2.0sq) · 3-core
Distance between detector	Less than 2km by CVVS · 2.0sq cable
Various functions	Alarm delay/Suppress/Peak hold/Calibration history/ Alarm trend history/Event history
Power supply	DC24V(DC21.6~26.4V)
Power consumption	MAX. 7W(detector head including. Approx. 10VA by using Multi-Case)
Initial clear	Approx. 25sec
Operating temperature	-10~40°C(non-rapidly-vary)
Operating humidity	10~90%RH(non-condensing)
Structure	Housing type for the case · front identification card type(put into Single case or Multi case)
Outer dimension	Approx. 29.6(W) × 120(H) × 92(D)mm(projection excluding)
Weight	Approx. 0.10kg(unit only)

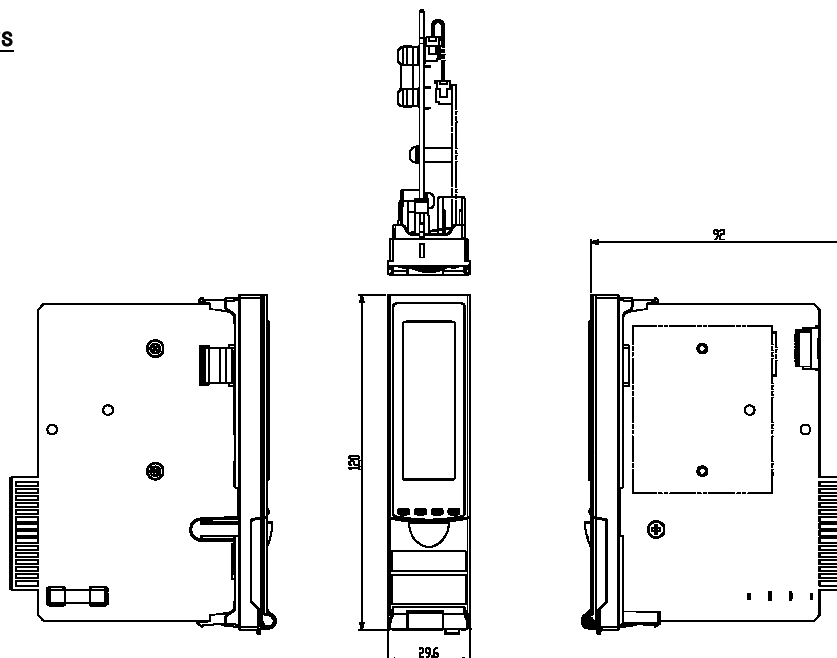
Outline Drawings



INDICATOR/ALARM UNIT EC-5002 SPECIFICATION

Detectable gas	Toxic gas
Applicable detector head	Electrochemical method gas detector head/Pyrolysis-particle method gas detector head
Gas concentration display	LCD(digital and bar-meter display<three colors:green, orange, red>)
Power indication	POWER lamp lighting(green)
Gas alarm type	Two-level alarm(H-HH)
Gas alarm indication	1st : ALM1 lamp blinking or lighting(red) 2nd : ALM2 lamp blinking or lighting(red)
Gas alarm action	Latched or Auto-recover, Lock-in
Gas alarm contact	Each no-voltage contact 1a or 1b(contact output for each alarm) · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Trouble alarm · Self diagnosis	System failure/Detecting circuit failure/Flow failure of gas detector head/Communication failure(digital transmission only)
Trouble alarm indication	FAULT lamp blinking(yellow)/content display
Trouble alarm action	Auto-recover
Trouble alarm contact	No-voltage contact 1a or 1b · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Contact capacity	AC100V · 0.5A/DC30V · 1.5A(resistive load)
Transmission scheme	Analog transmission/Digital transmission 【Option】
Specification of transmission	Analog transmission : DC4~20mA (non-isolated · load resistance less than 300Ω)/Digital transmission : RS-485
Gas detector head signal	Current signal (DC4~20mA)
Cable between detector	CVVS worth shielded cable(1.25sq or 2.0sq) · 2-core
Distance between detector	Less than 2km by CVVS · 2.0sq cable
Various functions	Alarm delay/Suppress/Peak hold/Calibration history/ Alarm trend history/Event history
Power supply	DC24V (DC21.6~26.4V)
Power consumption	MAX.3W(detector head including. Approx.3VA by using Multi-Case)
Initial clear	Approx.25sec
Operating temperature	-10~40°C (non-rapidly-vary)
Operating humidity	10~90%RH (non-condensing)
Structure	Housing type for the case · front identification card type (put into Single case or Multi case)
Outer dimension	Approx. 29.6 (W) × 120 (H) × 92 (D) mm(projection excluding)
Weight	Approx.0.10kg(unit only)

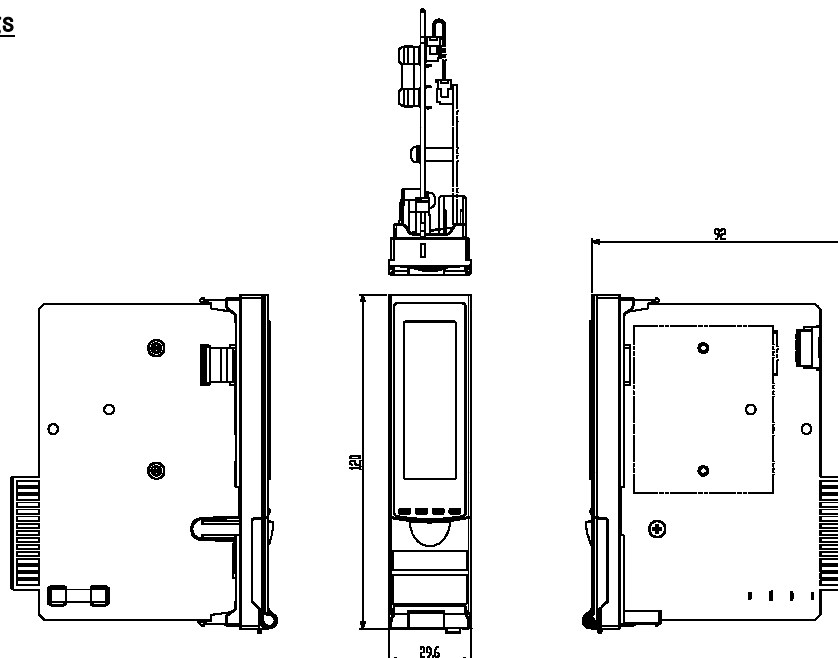
Outline Drawings



INDICATOR/ALARM UNIT OX-5001 SPECIFICATION

Detectable gas	Oxygen
Applicable detector head	Galvanic cell method gas detector head
Gas concentration display	LCD(digital and bar-meter display<three colors:green, orange, red>>)
Power indication	POWER lamp lighting(green)
Gas alarm type	Two-level alarm(H-HH or L-H or L-LL)
Gas alarm indication	1st : ALM1 lamp blinking or lighting(red) 2nd : ALM2 lamp blinking or lighting(red)
Gas alarm action	Latched or Auto-recover, Lock-in
Gas alarm contact	Each no-voltage contact 1a or 1b(contact output for each alarm) · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Trouble alarm · Self diagnosis	System failure/Detecting circuit failure/Communication failure(digital transmission only)
Trouble alarm indication	FAULT lamp blinking(yellow)/content display
Trouble alarm action	Auto-recover
Trouble alarm contact	No-voltage contact 1a or 1b · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Contact capacity	AC100V · 0.5A/DC30V · 1.5A(resistive load)
Transmission scheme	Analog transmission/Digital transmission 【Option】
Specification of transmission	Analog transmission : DC4~20mA(non-isolated · load resistance less than 300Ω)/Digital transmission : RS-485
Gas detector head signal	Direct signal from sensor
Cable between detector	CVVS worth shielded cable(1.25sq or 2.0sq) · 2-core
Distance between detector	Less than 600m by CVVS · 2.0sq cable
Various functions	Alarm delay/Peak hold/Calibration history/Alarm trend history/ Event history
Power supply	DC24V(DC21.6~26.4V)
Power consumption	MAX. 2W(detector head including. Approx. 2VA by using Multi-Case)
Initial clear	Approx. 25sec
Operating temperature	-10~40°C(non-rapidly-vary)
Operating humidity	10~90%RH(non-condensing)
Structure	Housing type for the case · front identification card type(put into Single case or Multi case)
Outer dimension	Approx. 29.6(W) × 120(H) × 92(D)mm(projection excluding)
Weight	Approx. 0.10kg(unit only)

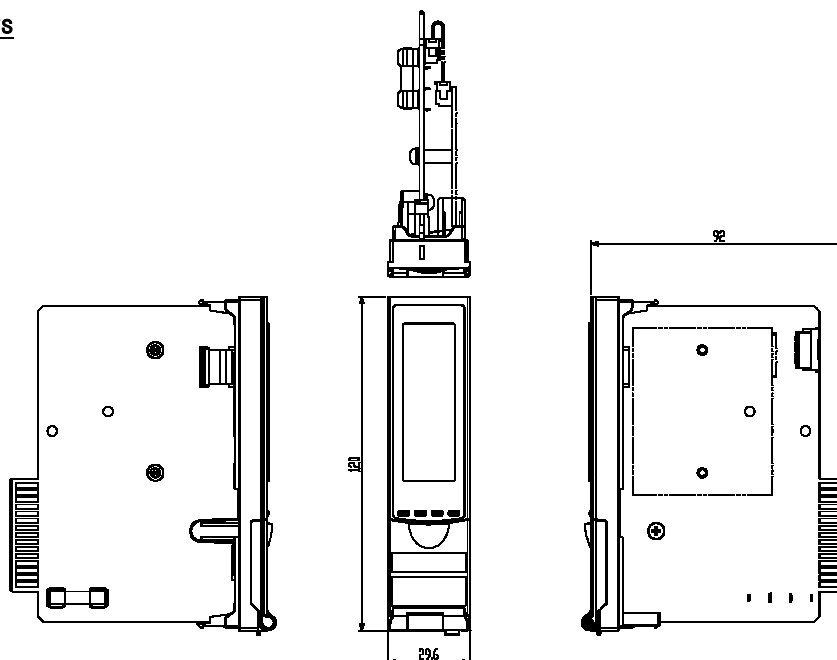
Outline Drawings



INDICATOR/ALARM UNIT OX-5002 SPECIFICATION

Detectable gas	Oxygen
Applicable detector head	Galvanic cell method gas detector head
Gas concentration display	LCD(digital and bar-meter display<three colors:green, orange, red>>)
Power indication	POWER lamp lighting(green)
Gas alarm type	Two-level alarm(H-HH or L-H or L-LL)
Gas alarm indication	1st : ALM1 lamp blinking or lighting(red) 2nd : ALM2 lamp blinking or lighting(red)
Gas alarm action	Latched or Auto-recover, Lock-in
Gas alarm contact	Each no-voltage contact 1a or 1b(contact output for each alarm) · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Trouble alarm · Self diagnosis	System failure/Detecting circuit failure/Flow failure of gas detector head/Communication failure(digital transmission only)
Trouble alarm indication	FAULT lamp blinking(yellow)/content display
Trouble alarm action	Auto-recover
Trouble alarm contact	No-voltage contact 1a or 1b · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Contact capacity	AC100V · 0.5A/DC30V · 1.5A(resistive load)
Transmission scheme	Analog transmission/Digital transmission 【Option】
Specification of transmission	Analog transmission : DC4~20mA(non-isolated · load resistance less than 300Ω)/Digital transmission : RS-485
Gas detector head signal	Current signal (DC4~20mA)
Cable between detector	CVVS worth shielded cable(1.25sq or 2.0sq) · 2-core
Distance between detector	Less than 2km by CVVS · 2.0sq cable
Various functions	Alarm delay/Peak hold/Calibration history/Alarm trend history/ Event history
Power supply	DC24V (DC21.6~26.4V)
Power consumption	MAX. 3W(detector head including. Approx. 3VA by using Multi-Case)
Initial clear	Approx. 25sec
Operating temperature	-10~40°C(non-rapidly-vary)
Operating humidity	10~90%RH(non-condensing)
Structure	Housing type for the case · front identification card type(put into Single case or Multi case)
Outer dimension	Approx. 29.6 (W) × 120 (H) × 92 (D) mm(projection excluding)
Weight	Approx. 0.10kg(unit only)

Outline Drawings

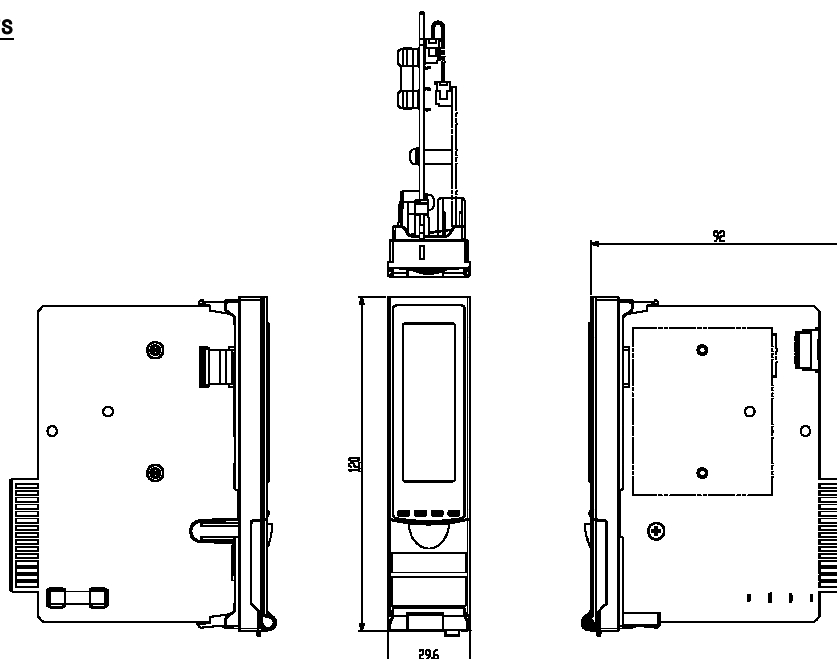


INDICATOR/ALARM UNIT

RM-5002 SPECIFICATION

Detectable gas	Depend on the connected detector head
Applicable detector head	General measurement signal output detector head
Gas concentration display	LCD(digital and bar-meter display<three colors:green, orange, red>>)
Power indication	POWER lamp lighting(green)
Gas alarm type	Two-level alarm(H-HH or L-H or L-LL)
Gas alarm indication	1st : ALM1 lamp blinking or lighting(red) 2nd : ALM2 lamp blinking or lighting(red)
Gas alarm action	Latched or Auto-recover, Lock-in
Gas alarm contact	Each no-voltage contact 1a or 1b(contact output for each alarm) · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Trouble alarm · Self diagnosis	System failure/Detecting circuit failure/Flow failure of gas detector head/Communication failure(digital transmission only)
Trouble alarm indication	FAULT lamp blinking(yellow)/content display
Trouble alarm action	Auto-recover
Trouble alarm contact	No-voltage contact 1a or 1b · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Contact capacity	AC100V · 0.5A/DC30V · 1.5A(resistive load)
Transmission scheme	Analog transmission/Digital transmission 【Option】
Specification of transmission	Analog transmission : DC4~20mA (non-isolated · load resistance less than 300Ω)/Digital transmission : RS-485
Gas detector head signal	Current signal (DC4~20mA)
Cable between detector	CVVS worth shielded cable(1.25sq or 2.0sq) · 2-core
Distance between detector	Depend on the connected detector head
Various functions	Alarm delay/Peak hold/Alarm trend history/Event history
Power supply	DC24V (DC21.6~26.4V)
Power consumption	MAX. 2W(detector head excluding. Approx. 2VA by using Multi-Case)
Initial clear	Approx. 25sec
Operating temperature	-10~40°C (non-rapidly-vary)
Operating humidity	10~90%RH(non-condensing)
Structure	Housing type for the case · front identification card type (put into Single case or Multi case)
Outer dimension	Approx. 29.6 (W) × 120 (H) × 92 (D) mm (projection excluding)
Weight	Approx. 0.10kg (unit only)

Outline Drawings



INDICATOR/ALARM UNIT

RM-5003 SPECIFICATION

Detectable gas	Depend on the connected detector head
Applicable detector head	Various gas detector heads
Gas concentration display	LCD(digital and bar-meter display<three colors:green, orange, red>>)
Power indication	POWER lamp lighting(green)
Gas alarm type	Two-level alarm(H-HH or L-H or L-LL)
Gas alarm indication	1st : ALM1 lamp blinking or lighting(red) 2nd : ALM2 lamp blinking or lighting(red)
Gas alarm action	Latched or Auto-recover, Lock-in
Gas alarm contact	Each no-voltage contact 1a or 1b(contact output for each alarm) · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Trouble alarm · Self diagnosis	System failure/Detecting circuit failure/Flow failure of gas detector head/Communication failure(digital transmission only)
Trouble alarm indication	FAULT lamp blinking(yellow)/content display
Trouble alarm action	Auto-recover
Trouble alarm contact	No-voltage contact 1a or 1b · Non-exciting at normal(exciting at alarm) or exciting at normal (non-exciting at alarm)
Contact capacity	AC100V · 0.5A/DC30V · 1.5A(resistive load)
Transmission scheme	Analog transmission/Digital transmission 【Option】
Specification of transmission	Analog transmission : DC4~20mA (non-isolated · load resistance less than 300Ω)/Digital transmission : RS-485
Gas detector head signal	Current signal (DC4~20mA)
Cable between detector	CVVS worth shielded cable (1.25sq or 2.0sq) · 3-core (power · signal · common)
Distance between detector	Depend on the connected detector head
Various functions	Alarm delay/Peak hold/Alarm trend history/Event history
Power supply	DC24V (DC21.6~26.4V)
Power consumption	MAX. 2W(detector head excluding. Approx. 2VA by using Multi-Case)
Initial clear	Approx. 25sec
Operating temperature	-10~40°C (non-rapidly-vary)
Operating humidity	10~90%RH (non-condensing)
Structure	Housing type for the case · front identification card type (put into Single case or Multi case)
Outer dimension	Approx. 29.6 (W) × 120 (H) × 92 (D) mm (projection excluding)
Weight	Approx. 0.10kg (unit only)

Outline Drawings

