

ISOMETER® IR420-D6

オフライン絶縁監視装置

(交流/直流共用、接地/非接地配線方式共用)



Ordering information

Supply voltage ¹⁾ U _s		Type	Art. No.	
AC	DC		Screw-type terminal	Push-wire terminal
16...72 V, 42...460 Hz	9.6...94 V	IR420-D6-1	B91016415	B71016415
70...300 V, 42...460 Hz	70...300 V	IR420-D6-2	B91016407	B71016407
		IR420-D64-2	B91016408	B71016408

¹⁾ Absolute values

Accessories

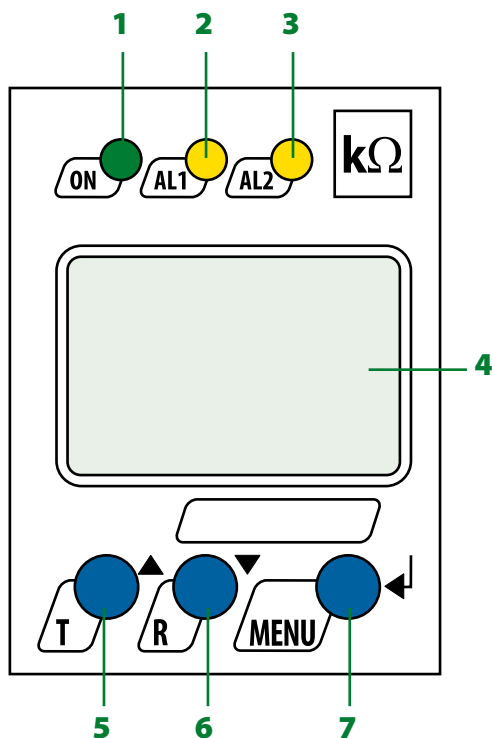
Description	Art. No.
Mounting clip for screw mounting (1 piece per device)	B98060008

Suitable system components

Description	Nominal voltage U _n ¹⁾	Type	Art. No.
Coupling device	AC 0...1150 V, DC 0...1100 V	AGH150W	B915576
	AC 0...1650 V AC + DC 0...1300 V	AGH204S-4	B914013
	AC 50...400 Hz, 0...7200 V	AGH520S	B913033
	AC 230 V; 50 Hz	AG70	B984718
	3 AC 50...400 Hz, 0...500 V	DS2-31	B984092

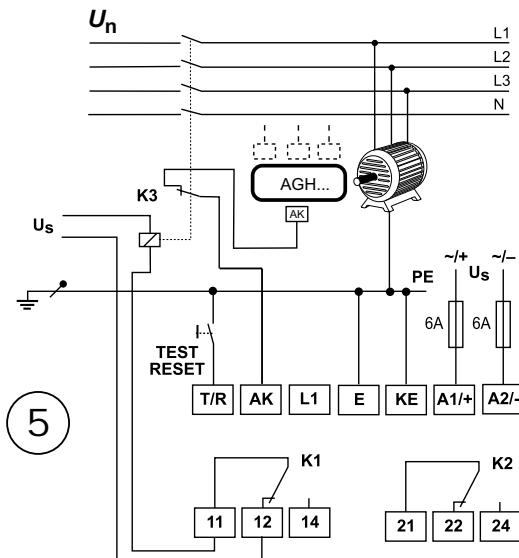
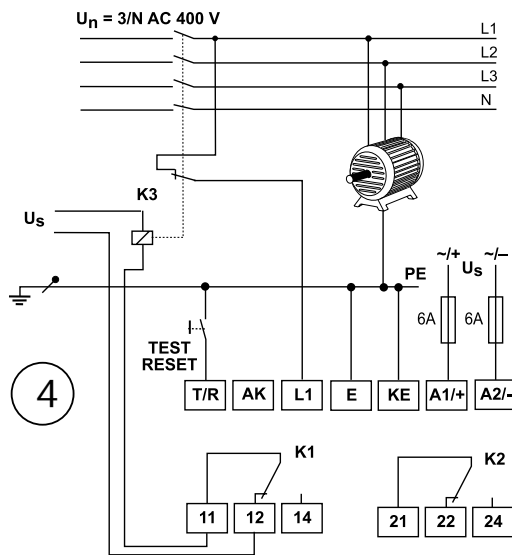
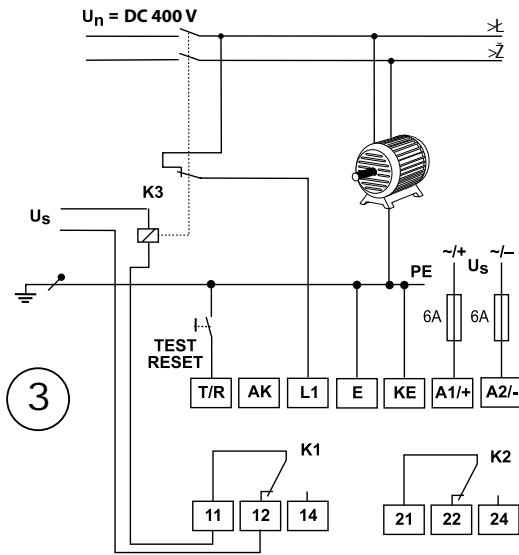
¹⁾ Absolute values

Operating elements

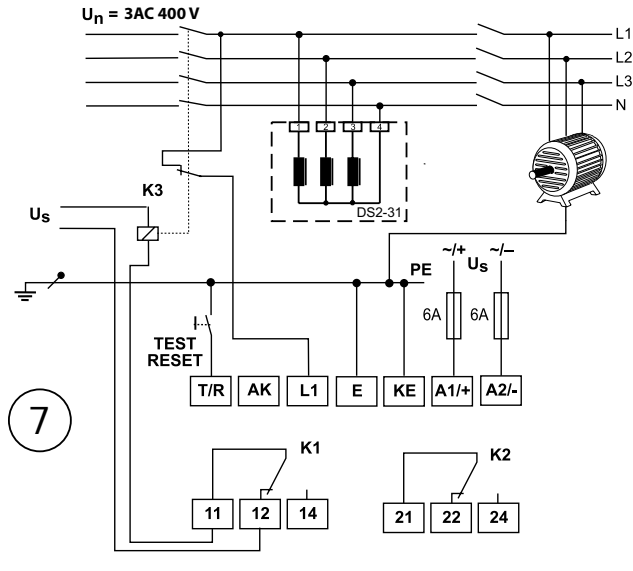
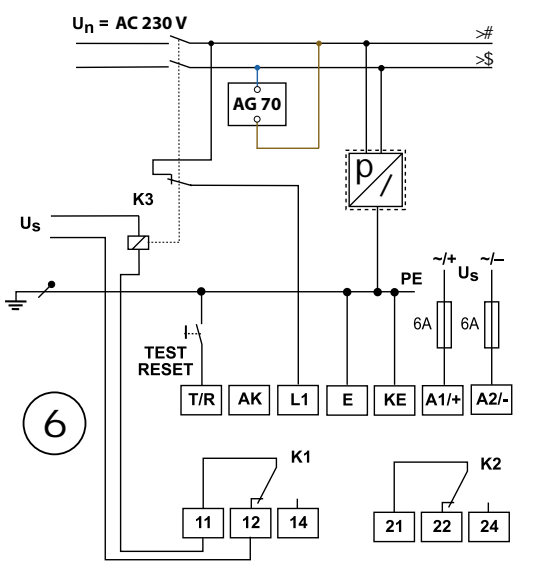


- 1 - Bai VdA` >76 zA @Š XSeZVè[lSeNax[fVdtg bfa` aXfZW
Lb` ` VWF[Y VŠVe 7! =7
- 2 - 3`Sd_ >76 z3>#Š ųYZfei ZW fZW hS`gW S`e TWai fZW eW
d/Vba` eW hS`gW B`Sd_ # S` V XSeZVè[lSeNax[fVdtg bfa` aX
fZW Lb` ` VWF[Y VŠVe 7! =7
- 3 - 3`Sd_ >76 z3>\$Š ųYZfei ZW fZW hS`gW S`e TWai fZW eW
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fZW Lb` ` VWF[Y VŠVe 7! =7
- 4 - >5 V[eb`Sk
- 5 - FVèf Tgffa` zFŠ fa lS`^gb fZW eW XfVèfz
3dbai` gb Tgffa` , bScS_ VVdLZS` YVWfa` _ ahWgb [fZW_ Wg
- 6 - DVèV Tgffa` zDŠ fa VVWVefadW [eg`Sf[à` Xsg`f`S`Sd_ e
bScS_ VVdLZS` YVWfa` _ ahWai` ` [fZW_ Wg
- 7 - z? 7@ŠTgffa` , fa lS`^gb fZW_ Wg ekefW_ ž
7 fVdtg bfa` , fa Lb` ` Xd_ bScS_ VVdLZS` YVè

Wiring diagrams (examples)



U_n AC 0...1150 V DC 0...1100 V	U_n AC 0...1650 V AC + DC 0...1300 V	U_n AC 3(N)AC 0...7,2 kV
L1 L2 L1 L2 39: # "1	L1 L2 L3 U3 V3 W3 39: \$" &E&	L1 2 39: ' \$" E
AK80 AK	AK80 AK	5 4 3 AK PE PE



Description	
(A)	Monitoring of disconnected DC loads up to 400 V with a low-resistance connection between L + and L- via the load.
(B)	Monitoring of disconnected 3-phase AC loads up to 400 V with a low-resistance connection between L1, L2 and L3 via the load.
(C)	Monitoring of disconnected AC loads up to U_n with a low-resistance connection between L1, L2, and L3 via the load.
(D)	Monitoring of disconnected lines or disconnected loads with high resistance between the active conductors L1 and L2. The inductive load AG70 connects the lines L1 and L2 via an inductance so that both lines can be monitored.
(E)	Monitoring of disconnected lines or disconnected loads with high resistance between the active conductors L1, L2 and L3. The inductive star-point coupling device DS2-31 connects lines L1, L2 and L3 via an inductance so that four lines can be monitored.

Terminal	Connection
E, KE	Connect the leads E and KE separately to PE
A1, A2	Supply voltage U_s (see nameplate) via 6 A fuse
11, 12, 14	Alarm relay K1
21, 22, 23	Alarm relay K2 (system fault relay)
K3	relay for isolating the ISOMETER®
AGH...	Coupling device for the monitoring of loads up to U_n
AG70 DS2-31	For the monitoring of loads with an undefined internal resistance or an open single conductor in cables
T/R	for combined external test/reset button
L1, AK	Connection to the system being monitored

Technical data

Insulation coordination acc. to IEC 60664-1/IEC 60664-3

Rated insulation voltage	
(A1, A2) - (11, 12, 14) - (21, 22, 24)	300 V
(L1, AK, E, KE, T/R)	500 V
Rated impulse voltage	6 kV
Overvoltage category	II
Pollution degree	3
Protective separation (reinforced insulation) between:	
(A1, A2) - (L1, AK, E, KE, T/R) - (11, 12, 14) - (21, 22, 24)	
Voltage test acc. IEC 61010-1	2.2 kV

Supply voltage

IR420-D6-1:

Supply voltage U_s	AC 16...72 V/DC 9.6...94 V
Frequency range U_s	42...460 Hz/DC

IR420-D6-2:

Supply voltage U_s	AC/DC 70...300 V
Frequency range U_s	42...460 Hz, DC
Power consumption	≤ 3 VA

System being monitored

Nominal system voltage U_n	AC 0...400 V
Tolerance of U_n	25 %
Frequency range of U_n	42...460 Hz
without AGH nominal contact voltage of the N/C. contact K3 (switch-on contactor)	
with AGH520S	AC 50...400 Hz, 0...7200 V
with AGH150W	AC 0...1150 V
	DC 0...1100 V
with AGH204S-4	AC 0...1650 V
including DC components	0...1300 V

Response values

Response value R_{an1} (AL 1)	100 k ... 10 M (1 M) *
Response value R_{an2} (AL 2)	100 k ... 10 M (100 k) *
Operating error (≤ 1 M)	±15 %
Hysteresis	+25 %

Time response

Response time t_{an} at $R_F = 0,5 \times R_{an}$ and $C_e = 1 \mu F$	≤ 4 s
Start-up delay t	0...10 s (0 s)*
Response delay t_{on}	0...99 s (0 s)*

Measuring circuit

Measuring voltage U_m	+12 V
Measuring current I_m ($R_F = 0 \Omega$)	≤ 10 μA
Internal d.c. resistance R_i	≥ 1.2 M
Internal impedance Z_i (50 Hz)	≥ 1.1 M
Admissible extraneous d.c. voltage U_{fg}	≤ DC 300 V
System leakage capacitance C_e	≤ 10 μF

Displays, memory

Display	LC display, multi-functional, non-illuminated
Display range, measuring value	10 k ... 20 M
Percentage operating error (≤ 1 M)	±15 %
Password	off/0...999 (off)*
Fault memory (alarm relay)	on/off (off)*

Inputs

Cable length external test/reset button	≤ 10 m
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Switching elements

Number of	2 (changeover contacts K1, K2)
Operating principle	N/O operation, N/C operation (N/O operation n.o.)*
Electrical endurance	10000 switching operations

Contact data according IEC 60947-5-1

Utilization category	AC-13	AC-14	DC-12	DC-12	DC-12
Rated operational voltage	230 V	230 V	220 V	110 V	24 V
Rated operational current	5 A	3 A	0.1 A	0.2 A	1 A
Minimum current	1 mA at AC/DC ≥ 10 V				

Technical data (continuation)

Environment/EMC

EMC	acc. to IEC 61326
Operating temperature	-25...+55 °C

Climatic classes acc. to IEC 60721 (without condensation and formation of ice)

Stationary use (IEC 60721-3-3)	3K24
Transport (IEC 60721-3-2)	2K11
Storage (IEC 60721-3-1)	1K22

Classification of mechanical conditions acc. to IEC 60721:

Stationary use (IEC 60721-3-3)	3M11
Transport (IEC 60721-3-2)	2M4
Storage (IEC 60721-3-1)	1M12

Connection

Connection	screw terminals
Connection properties	
rigid	0.2...4 mm ² (AWG 24...12)
flexible	0.2...2.5 mm ² (AWG 24...14)
Two conductors with the same cross section	
rigid/flexible	0.2...1.5 mm ² (AWG 24...16)
Stripping length	8 mm
Tightening torque, terminal screws	0.5...0.6 Nm

Connection

Connection properties	push-wire terminals
rigid	0.2...2.5 mm ² (AWG 24...14)
flexible	
without ferrules	0.75...2.5 mm ² (AWG 19...14)
with ferrules	0.2...1.5 mm ² (AWG 24...16)
Stripping length	10 mm
Opening force	50 N
Test opening, diameter	2.1 mm

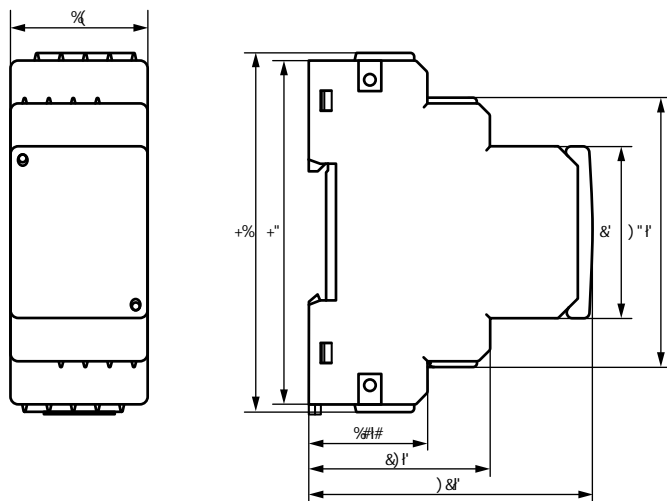
Other details

Operating mode	continuous
Position	any position
Degree of protection internal components (EN 60529)	IP30
Degree of protection terminals (EN 60529)	IP20
Enclosure material	polycarbonat
Flammability class	UL94 V-0
DIN rail mounting acc. to	IEC 60715
Screw mounting	2 x M4 with mounting clip
Documentation number	D00117
Weight	approx. 150 g

(*) = Factory setting

Dimension diagram XM420

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