Compatibility of IP cameras and switches

Abstract

This document describes basic rules for using IP cameras with compatible switches. Document also describes meaning of pins of cabling.

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Appendix

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Table of contents

Revision history

Version	Date	Author of change	Changes
100	13. 9. 2017	Roman Hajda	New document
101	14. 11. 2017	Roman Hajda	IP camera pin assignment according to 802.3af Standards A and B. Split tables for better clarity.

Related documentation

1. **AP3905-R/B –** IP camera AXIS, M12 **–** datasheet
   file: ap3905-rxxb_d_en_102.pdf

2. **AP209FD –** IP camera AXIS, RJ45 –datasheet
   link: https://www.axis.com/files/datasheet/ds_209fd_mfd_37723_en_0912_lo.pdf

3. **AP209FDR –** IP camera AXIS, RJ45, M12 –datasheet
   link: https://www.axis.com/files/datasheet/ds_209fdr_mfdr_37731_en_0912_lo.pdf

4. **KKR-AL01/xx –** External camera cover **–** guide
   file: kkr-al01_g_en_100.pdf

5. **KKR-AL01H/xx** – External camera cover - guide
   file: kkr-al01hc1_g_en_100.pdf

6. **KKR-AL02/E –** External camera cover **–** guide
   file: kkr-al02_g_en_100.pdf

7. **KKR-MD85/x –** External camera cover **–** guide
   file: kkr-md85b_g_en_100.pdf

8. **KKR-S60/x –** External camera cover **–** guide
   file: kkr-s60c_g_en_100.pdf

9. **KKR-VP06/xx –** External camera cover **–** guide
   file: kkr-vp06d1_g_en_100.pdf

10. **KKR-13T/x –** External camera cover **–** guide
    file: kkr-13t_g_cz_100.pdf

11. **KKR-15T/x –** External camera cover **–** datasheet
    file: kkr-15t_d_en_100.pdf

12. **KKR-19T/x –** External camera cover **–** datasheet
    file: kkr-19t_d_en_100.pdf

13. **ESW06A –** Industrial Ethernet switch with PoE **–** guide
    file: esw06a_g_en_104.pdf

14. **ESW06P –** Industrial Ethernet switch with PoE **–** guide
    file: esw06p_g_cz_104.pdf

15. **RB-SW006/AR1 –** Industrial Ethernet switch with PoE **–** guide
    file: rd-sw006ar1_g_en_100.pdf

16. **RB-SW006/AM1 –** Industrial Ethernet switch with PoE **–** guide
    file: rd-sw006am1_g_en_102.pdf

17. **VPORT06xx –** IP camera MOXA – User's manual
    link: https://www.moxa.com/doc/man/VPort_P06-1MP-M12_UM_2e.pdf

18. **MD8562** – IP camera VIVOTEK – User's manual
    link: https://www.manualslib.com/manual/533637/Vivotek-Md8562.html

1   Introduction

This document provides a compatibility overview of IP cameras and switches or camera covers offered by the AMiT Company.

Additionally, some more technical aspects of the system are discussed and basic guide how to choose an appropriate solution is provided.

1.1   How to read this document

The document should allow you to safely jump to any chapter you need to consult.

2   Terminology

2.1   Common abbreviations

PoE

Power over Ethernet

3 Connection of Ethernet connectors of IP cameras

This chapter provides description of each pin of every IP camera offered by AMiT Company.

3.1 IP cameras AXIS

	RJ45		M12	
PIN	AP3905-Rxx/A	AM3114-Rxx/A	AP3905-Rxx/B	AM3114-Rxx/B
1	Tx+ / DC+	Tx+ / DC+	Tx+ / DC+	Tx+ / DC+
2	Tx- / DC+	Tx- / DC+	Rx+ / DC-	Rx+ / DC-
3	Rx+ / DC-	Rx+ / DC-	Tx- / DC+	Tx- / DC+
4	DC+	DC+	Rx- / DC-	Rx- / DC-
5	DC+	DC+	-	-
6	Rx- / DC-	Rx- / DC-	-	-
7	DC-	DC-	-	-
8	DC-	DC-	-	-

3.2 IP cameras MOXA (VPORT06xx), VIVOTEK (MD8562)

	RJ45		M12
PIN	VPORT06Rx	MD8562	VPORT06Mx
1	Tx+ / DC+	Tx+ / DC+	Tx+ / DC+
2	Tx- / DC+	Tx- / DC+	Rx+ / DC-
3	Rx+ / DC-	Rx+ / DC-	Tx- / DC+
4	-	DC+	Rx- / DC-
5	-	DC+	-
6	Rx- / DC-	Rx- / DC-	-
7	-	DC-	-
8	-	DC-	-

4 Compatibility of PoE switch and IP cameras

This chapter describes which cameras can be used with full functionality with following PoE switches.

4.1 IP cameras AXIS

RJ45

Switch	AP3905-Rxx/A	AM3114-Rxx/A
ESW06A	NO	YES
ESW06P	YES	YES
RB-SW006/AR1	YES	YES
RD-SW006/AR1	YES	YES

M12

Switch	AP3905-Rxx/B	AM3114-Rxx/B
RB-SW006/AM1	YES	YES

4.2 IP cameras MOXA (VPORT06xx), VIVOTEK (MD8562)

RJ45

Switch	VPORT06Rx	MD8562
ESW06A	NO	YES
ESW06P	NO	YES
RB-SW006/AR1	YES	YES
RD-SW006/AR1	YES	YES

M12

Switch	VPORT06Mx
RB-SW006/AM1	YES

5 Compatibility of camera covers and IP cameras

This chapter describes which camera cover is suitable, provides clear view and corresponding dimensions for following IP cameras.

Camera cover	VPORT06xx	AP3905-Rxx/x	AM3114-Rxx/x	MD8562	A209FD/A209FD-R
KKR-AL01/xx	YES	YES	YES	NO	NO
KKR-AL01H/xx	YES	YES	YES	NO	NO
KKR-AL02/E *	NO	NO	NO	NO	NO
KKR-MD85/x	NO	NO	NO	YES	NO
KKR-S60/x **	NO	NO	NO	NO	NO
KKR-VP06/xx	YES	NO	NO	NO	NO
KKR-13T/x	NO	YES	NO	NO	NO
KKR-15T/x	NO	NO	YES	NO	YES
KKR-19T/x	NE	NO	YES	NO	NO

* - KKR-AL02/E is compatible with IP cameras Nexcom NCm-301-V, Nexcom NCm-301-2V (these cameras are not offered by AMiT Company).

** - KKR-S60/x is compatible with IP camera SAMSUNG SNV-6012M

Field of view for available lenses is described in chapter 8 Appendix A – IP cameras lenses overall and field of view.

6   Substitution of IP cameras AXIS

This chapter decribes possible substitution of original IP cameras by newer type of IP cameras AXIS.

Original camera	Possible substitution of camera	
Camera	Camera	Note
AP209FD	AP3905-R36/A	Mechanically different, Software updates needed
AP209FDR	AP3905-R36/x	

Original camera	Possible substitution of camera	
Camera	Camera	Note
AM3114-R28/x	AP3905-R36/x	Mechanically identical, Software updates needed
AM3114-R36/x	AP3905-R36/x	
AM3114-R60/x	AP3905-R60/x	
AM3114-R80/x	AP3905-R80/x	

If the cameras are replaced in the camera cover, it is necessary to check observing angles.

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8 Appendix A – IP cameras lenses overall and field of view

This chapter describes available lenses with horizontal and vertical viewing angles for following IP cameras.

8.1 IP cameras lenses and fields of view

IP Camera	Lens [mm]	H [º]	V [º]
AM3114-R28/x	2.8	77	50
AM3114-R36/x	3.6	60	38
AM3114-R60/x	6.0	37	22
AM3114-R80/x	8.0	28	15.5

IP Camera	Lens [mm]	H [º]	V [º]
AP3905-R28/x	2.8	115	63
AP3905-R36/x	3.6	87	47
AP3905-R60/x	6.0	52	33
AP3905-R80/x	8.0	40	22.5

IP Camera	Lens [mm]	H [º]	V [º]
VPORT06M25	2.5	130	98
VPORT06M25T			
VPORT06M36	3.6	96	56
VPORT06M36T			
VPORT06M42	4.2	81	47
VPORT06M42T			
VPORT06M60	6.0	51	38
VPORT06M60T			
VPORT06M80	8.0	38	24
VPORT06M80T			

IP Camera	Lens [mm]	H [º]	V [º]
MD8562	2.8	110	81

H – Horizontal angle of view

V – Vertical angle of view