

Konfiguracja źródeł Kemppi A7 z robotami Kawasaki

Zalecenia sprzętowe:

- Kontroler typu E0x, E4x,
- Wersja oprogramowania zalecana ASE_033300X4Q lub nowsza
- Źródło Kemppi A7,
- Komunikacja w protokole Ethernet IP.

Przedstawiony przykład konfiguracji komunikacji obsługuje 32 wejścia/wyjścia fizyczne oraz ramkę 128 bitów źródeł Kemppi A7.

Konfiguracja źródła Kemppi

- 1. Ustawić adres źródła spawalniczego
- 2. Uruchomić przeglądarkę InternetExplorer i wywołać stronę odwołując się do adresu IP z punktu 1.
- 3. Przejść do zakładki Fieldbus Settings.
- 4. W polu Configuration Parameters wyłączyć DHCP oraz nadać statyczny adres IP.

KEMPPI Untitled device			
WELDING DISPLAY	FIFI DRUS SETTINGS: ETHERNET/	IP 2.PORT	
GAS, AIR AND WIRE INCH			
		4400	
LOGBOOK	ODVA VENDOR ID ODVA DEVICE TYPE	100	
ABOUT	PRODUCT CODE VERSION	1	
☆ WELDING SETTINGS:	SERIAL NUMBER	750140076	
MEMORY CHANNELS	PRODUCT NAME	A7 MIG Welder	
WELDING SYSTEM			
¢ SETTINGS:	ADAPTER INFORMATION		
LANGUAGE	MAC ADDRESS	00:30:11:24:F9:E8	
LISTRE			
USERS	CONFIGURATION PARAMETERS		
FIELDBUS		OFF ON	
NETWORK			
INPUT/OUTPUT	IP ADDRESS		
BACKUP, RESTORE AND RESET			
	SUBNET MASK	255 · 255 · 255 · 0	
LICENSES			
	GATEWAY		
	DNS 1	10 . 110 . 0 . 0	
	DNS 2	10 . 0 . 0 . 0	
	HOST NAME		
	DOMAIN NAME		
	COMM 1 SETTINGS	Auto	
	COMM 2 SETTINGS	Auto	

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- 5. Przejść do zakładki Welding system.
- 6. Ustawić w polu Watchdog Setting wartość Watchdog w pozycję ON oraz Timeout na 1 s.

WATCHDOG SETTINGS		
Ф WATCHDOG	OFF	ON
TIMEOUT		1.0 s
himeoor		

7. Zrestartować źródło spawalnicze.

Konfiguracja robota Kawasaki

Komunikacja w protokole Ethernet IP

- 1. Wgrać plik konfiguracyjny *Kemppi_opt.as*.
- 2. Zrestartować kontroler robota.
- 3. Przejść do zakładki Aux function-->Input/Output Signal-->Number of I/O Signals. Wprowadzić Number of Master Signals 128.

Multi Function Panel No.0 INSPECT Program Consent 0.000000	PC RUN NOTE: CVCLE 1 attost Aux 522, 520 STEP CONT. STEP CONT. NML SPEED LV2 SFP. CONT.
Number of Output Signals 33 Number of Inten Signals 33 Number of Intena Signals 326 Number of Huster Signals 112 Number of Slave Signals 0 Number of Slave Signals 0	20
Unio	

4. Przejść do Aux function-->Input/Output Signal-->Signal Allocation-->Allocate Signals to Ports. Dokonać przypisania sygnałów do odpowiednich kanałów.

Multi Function Panel No.0	– 0 X	Multi Function Panel No.0	- 0 X
SEPRAT SC-hone ()	FC RIN HOTOR CVCLE 1 autost Aux. \$52°. 52°D 3 3:5b.se TONE TONE LV2 STEP CONT. \$60°C	Program Comment STI go_home 1 [[PC RUN MOTOS CYCLE 1 autost Aux BEP. SPD 10% 3:305.36 STEP ONT NMALSEED LV2 SPP. ONT
Aux.:Input/Output Signal:Signal Alloc	ation:Allocate Signals to Ports 1/ 2	Aux.:Input/Output Signal:Signal Allocat:	ion:Allocate Signals to Ports 2/2
Othput Control Control <thcontrol< th=""> <thcontrol< th=""> <thco< td=""><td>Input Coldination Coldination Coldination 128 0 32 1001-106 Pert Address 1001-106 Pert Address 1001-106 Pert Address 1001-106 Pert Address 1001-108 Pert BAC 1001-111 Pert BAC </td><td>Output (Iotal raw of mig: 160) NGTER SLAWS LOOK 123 0 32 Fort Address 125-144 P MG SLA LOC 137 146-181 P MG SLA LOC 113</td><td>Input [Ctal ma of mig: 160) MSTER SLAWS LOOK 128 0 32 Fort Middrew 1129-1144 M MS SLA LOC 1297 1145-1160 M MS SLA LOC 1113</td></thco<></thcontrol<></thcontrol<>	Input Coldination Coldination Coldination 128 0 32 1001-106 Pert Address 1001-106 Pert Address 1001-106 Pert Address 1001-106 Pert Address 1001-108 Pert BAC 1001-111 Pert BAC	Output (Iotal raw of mig: 160) NGTER SLAWS LOOK 123 0 32 Fort Address 125-144 P MG SLA LOC 137 146-181 P MG SLA LOC 113	Input [Ctal ma of mig: 160) MSTER SLAWS LOOK 128 0 32 Fort Middrew 1129-1144 M MS SLA LOC 1297 1145-1160 M MS SLA LOC 1113
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5. Przejść do Aux function-->Input/Output Signal-->Signal Allocation-->Assign Ports to Physical Interfaces. Ustawić urządzenie Master Software Ethernet IP - 12.





6. Przejść do Aux function-->Input/Output Signal-->Signal Allocation-->Set Signal Order. Ustawić parametry ramki komunikacyjnej dla portu Master – First Signal # Bit In a Byte – LSB First, Bytes Order in a Word (16 Bits) - Little Endian.

Multi Function Panel No.0 - 🗆 🗡
leared error state.
Aux.:Input/Output Signal:Signal Allocation:Set Signal Order
Namber Port II Finst Sammed Bit Inn a Nor Hoten Order In a Nord (If Bits) Deten Order In a Nord (If Bits) Dig Borian IV Little Endian
Slave Port — 0

7. Przejść do Aux function-->Input/Output Signal-->Signal Allocation-->Software Ethernet IP setting --> Port setting. Ustawić adres IP portu Master w robocie zgodny z adresem ustawionym na źródle Kemppi.

Multi Function Panel No.0		- 0 ×
REPEAT	SIRP FC go_home 1 1 3 1 3	RUN POTOR CYCLE
	Tar2	REP. CONT.
Jure "Intert/Dataset Signa	1:Simal Allocation:Software Ether	Net/IP setti
Port2		
IP Address Host Name Subnet Mask Gateway Prinary DNS Server Secondary DNS Server Donain Name	133. 1.68. 1.40 255. 255. 0 0.000 0.000 0 0.000 0.000 0	
MAC Address Network Address	eth1 00:09:0F:08:01:13 192.168. 1. 0	
Sets IP Adiress Input range : [0 - 255]		

8. Przejść do Aux function-->Input/Output Signal-->Signal Allocation-->Software Ethernet IP setting-->Assembly display and setting. Ustawić wielkość ramki na 0 dla Output Signal i Input Signal.

Multi Function Panel No.0	[Connent] go_hone]		PC 1 autost 3 job_se Lv:	RUN HOTOR CYCLE AUE BEP. SPD STEP CONT. HAN. SPED EP. CONT. HAN. SPED
OutputSignal InputSignal ConfigData	Instance 00000064 00000064 00000064	Туре 09 09 09	Size(byte)	Offset (byte)
linio Input range : [0 - 65	635]			

9. Przejść do Aux function-->Input/Output Signal-->Signal Allocation-->Software Ethernet IP setting-->I/O communication Setting-->Setting 1. Wprowadzić parametry komunikacyjne zgodnie z wartościami odczytanymi z pliku *.eds.

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Multi Function Panel No.0 - 🗆 🛛	🛃 Multi Function Panel No.0 - 🗆 🛛	🐮 Multi Function Panel No.0 - 🗆 🗙
Displays Displays	Program Connect. STUP 1 Attic Res <	Program Covert STOP 1 E. Non No
Aux, :Input/Output Signal:Signal Allocation:Software EtherNet/IP setti 1/ 3	Aux, :Input/Output Signal:Signal Allocation:Software EtherNet/IP setti 2/ 3	Aux, :Input/Output Signal:Signal Allocation:Software EtherNet/IP setti 3/ 3
Setting 1	Setting 1	Setting 1
Instance	ProducingConnectionType 4000	InputScamerUffset ()
Tempt Carfie Cam Instance	DeschoinsDeicenity 0000	Inputodementsize Ib
TargetOnLigonEnint 100	CommingPriority (600	DistrutScamerSize
TargetConsumingComPoint 150	TransportClass	Shared/emoryOffset
TargetConsumingConnTag	TransportType 00	QuickConnect
TargetProducingConnTag	TimeoutMultiplier 2	
ProducingDataRate 20	NatchdogTimeoutAction 3	
ConsumingDataRate 10	NatchdogTimeoutReconnectDelay 2000	
Untput on Programmaner	nostirsoir Intrinti	
millionumstruktumsanet i ň		
Undo Next Page	Undo Prev Page Vent Page	Undo Prev Page
Input range : [0 - 128]	Input range : [0x0 - 0xFFFF]	Input range : [0 - 2147483647]

10. Przejść do Aux function-->Input/Output Signal-->Dedicated Input Signal. Przypisać wejścia dedykowane zgodnie z ustawioną alokacją sygnałów i dokumentacją Kemppi.

White Process Proof No.0 Image: no	N STORE COLLEGE NUCCOUNT, SERVEST DURT, SERVEST	SIBP PC RUN go_hose 1 3_3bse Aux. U/2 U/2 U/2 U/2	C X K Math Function Panel No.3 FORM STATE OF THE STATE OF TH	STEP 1 3 (3-3), and 5 (3-2), and 5 (3-2)
Instruction Stand Money Light Law Set News Light Law Set News Code (0:Elsters) 13(3) PENNWY STL 11 Set News STL 21 Set News STL 21 Set News STL 21 Set News STL 22 Set News STL 23 Set News Strate Weit Agral SETONES PO Nations of Indu SETONES PO J.P FWEI, Meit Statt SETONES PO J.S. Statt Statt SETONES PO	Signal Webs/ Signal Webs/ D Am. Encode Mathematics (Control Methods) D Control Methods (Control Methods) Control Methods (Control Methods) NSL Control Methods (Control Methods) Control Methods) NSL Control Methods) Control Methods) NSL	Districtional Signal Signal Image: Signal	Signal No. 6.2 - Link March Result	First Struct Stand 10, 71 GR/Merit Stand 10, 71 F GR/DATE

11. Przejść do Aux function-->Input/Output Signal-->Dedicated Output Signal. Przypisać wyjścia dedykowane zgodnie z ustawioną alokacją sygnałów i dokumentacją Kemppi.

Multi Function Panel No.0	- 0 X	Multi Function Panel No.0	– 🗆 X	Multi Function Panel No.0	- 0 X
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	EP FC RUN HOTOEL CYCLE Aux. REP. CPD STEP OUNT Log SP. OUNT	Forgram [Connent.] [] [] [] [] [] [] [] [] [] [] [] [] [] []	ETEP PC RUN MOTOR CVCLE	Espekit [Program [Connent]] STEP [] [] [] [] [] [] [] []	FC RIN MOTOR CVCLS J Aux. 522 520 STEP CONT. MAL SPEED LU2 SSP. CONT. MAL SPEED
Aux.: Input/Output Signal: Dedicated Output	ut Signals 8/13	Aux, :Input/Output Signal:Dedicated O	tput Signals 9/13	Aux, :Input/Output Signal:Dedicated Output	Signals 10/13
Signal Name Error code and number	Set/Meset Signal Number	Sagnal Name	DEDICATED CANCEL CONCEL	Sugnal Name FTT IT not set to hold	Set/Weset Signal Number
ERROR #S	DEDICATED CANCEL	ARC WELD-MIRE INCHING	F DEDICATED CANCEL	NO ERROR	SET CANCEL
Type for start erorr(P:1 W:2 E:3 D:4)	NUM. OF SIG.		MOTOR POMER ON	SET 🔽 CANCEL
Error code start number		NUM. OF START SIG.		ARC WELD-Working mode select	F DEDICATED CANCEL
Type for end error(P:1 W:2 E:3 D:4)		AND WELD-MIRE RETRACT	M DEDICATED CANCEL	NUM, OF SIG.	
BIFOT CODE ENI NUMBER		NUT, UP DIG.		NUT, UP DIREL DIG.	T DEDICATED CONCEL
RUBOI_HULD RUBOT_WATT	DEDICATED CANCEL	ABC WEID-ADC ON	DEDICATED CANCEL CI	MIN OF STG	P DEDICATED CANVED
ROBOT RETOP	DEDICATED CANCEL	ARC WELD-Stick Detect/Touch sensing	DEDICATED CANCEL	NUM. OF START SIG.	15
ARC WELD-TOUCH SENSING	F DEDICATED CANCEL	ARC WELD-WATCH DOG SIGNAL	DEDICATED CANCEL	Wire Feed Speed	T DEDICATED F CANCEL
ARC WELD-STICK DETECT	DEDICATED 🔽 CANCEL 🚺 🕧	ARC WELD-ENHANCED WATCH DOG SIGNAL	DEDICATED CANCEL 92	NUM, OF SIG.	16
ARC WELD-FEEDER ON	DEDICATED CANCEL	Panel switch in RUN.	SET CANCEL	NUM. OF START SIG.	
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Damas - 10-00003 (0-Net Hand)				Denne + [1-100-2001-2250] (0-Net Head)	

Multi Function Panel No.0	- 0 X
EEPEAT [Program [Connent] STEP FC []] []] []] []	RUN MOTOR CYCLE ALE, REP. SPD
Cleared error state.	STEP CONT. NWW. SPAND
Star, Linger, Charge, Short, Horisontof, Orene, Banal, Singal, Ram Birocher, Engenzinze, Ricco Birocher, Engenzinze, Ricco Birocher, Star Birocher, Star Bir	13/13 Signal Number ▼ CONTEL 0 CONTEL 0 CONTEL 0 CONTEL 0
Undo Free Page	

12. Sprawdzić status komunikacji w Monitor 1-->Software Ethernet IP Status.



13. Napisać program interpretujący kody błędów źródła Kemppi i uruchomić go na wybranym wątku.

.PROGRAM autostart5.pc()

```
WHILE 1 DO

r_err = BITS(1067,8)

IF r_err>0 THEN

SOUT 2250

TWAIT 1

SOUT -2250

TWAIT 1

ELSE

SOUT -2250

END

END

END

END
```

14. Ustawić uruchamianie programu autostart5.pc w Aux function-->Advanced Setting-->System Switch.

Aux.:Advanced Setting:System Switch		3/8
Class Switch Name		
RPS	🗆 On	▼ 0ff
STP_ONCE	🗌 🗆 On	▼ 0ff
AFTER. WAIT. TMR	🗌 On	▼ 0ff
FLEXCOMP	🔽 On	□ 0ff
MESSAGES	🗹 On	□ 0ff
SCREEN	🔽 On	□ 0ff
AUTOSTART, PC	🗌 On	▼ 0ff
AUTOSTART2, PC	🗆 On	▼ 0ff
AUTOSTART3, PC	🗌 On	▼ 0ff
AUTOSTART4. PC	🗌 On	▼ 0ff
AUTOSTART5, PC	🔽 On	🗆 Off
ERRSTART. PC	🗌 On	▼ 0ff
Undo Prev Page Next Page		
Remote Program Selection ON:Enable,	OFF:Disable	

- 15. Przejść do Aux-->>Arc Weld -->> Arc Weld Enviremental setting.
- 16. W polu Watch dog signal output interval for Welder wprowadzić wartość 0.5.

Multi Function Panel No.0		- 0 X
REPEAT Program Connent I [] [] [[STEP	RUN MOTOR CYCLE
Cleared error state.		LV2 REP. CONT.
Aux.: Arc Weld: Arc Weld Environmental	setting	
Welding I/F Board	🗆 Used	₽ Not Used
Gas control type	F Welder	□ Robot Controller
Match dog signal output interval for Welder		0.50 s
Undo 📔 👘		

- 17. Przejść do Aux-->>Arc Weld -->>Welder error detect setting.
- 18. Ustawić Welder Error 1 jako Error.