

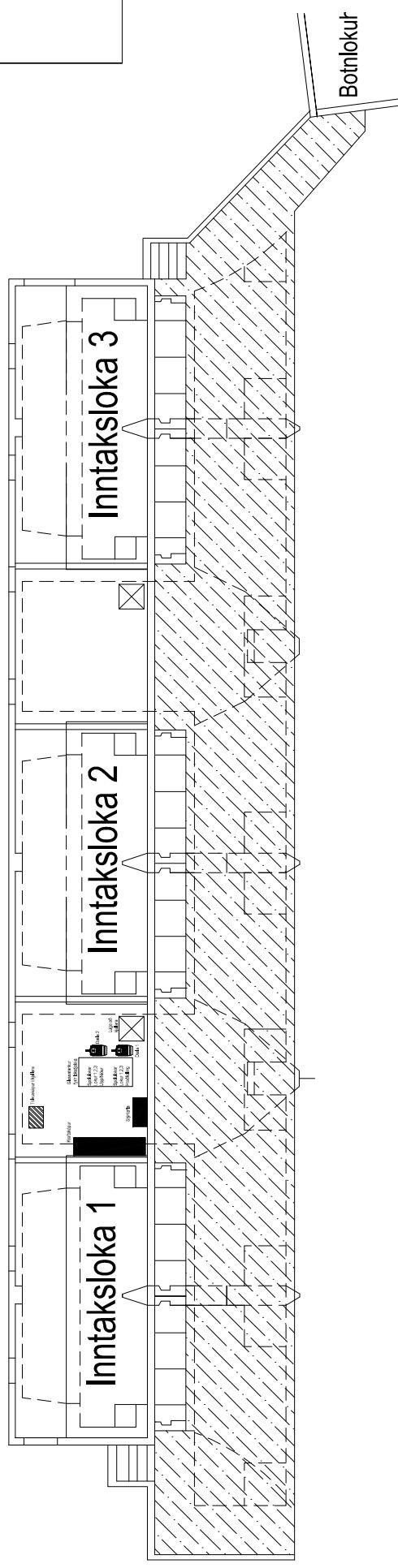


Fylgiskjöl

Í þessu skjali eru gögn sem voru notuð á einn eða annan hátt við undirbúning og framkvæmd á verkefninu.

Hér er t.d töflur og ladderforrit í heild ásamt upplýsingum um búnað frá framleiðendum.

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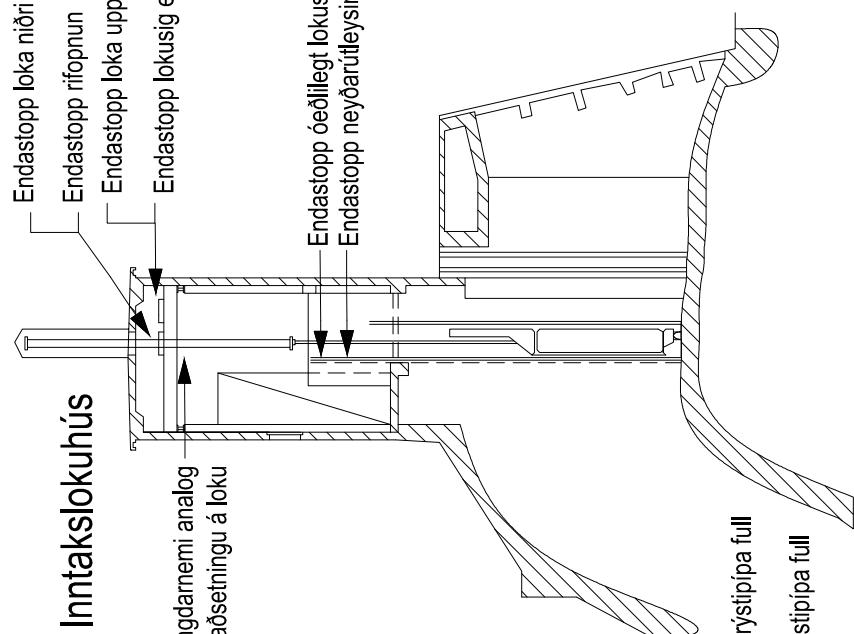


Inntakslokuhús

Ljóslegrarnemi analog fyrir staðsettningu á lóku

- Endastopp loka niðri
- Endastopp rifopnun
- Endastopp loka uppi

- Endastopp óeðillegt lokusig
- Endastopp neyðarútleysing



Digital prystykyjari prystipia full
Analog prystinemi prystipia full

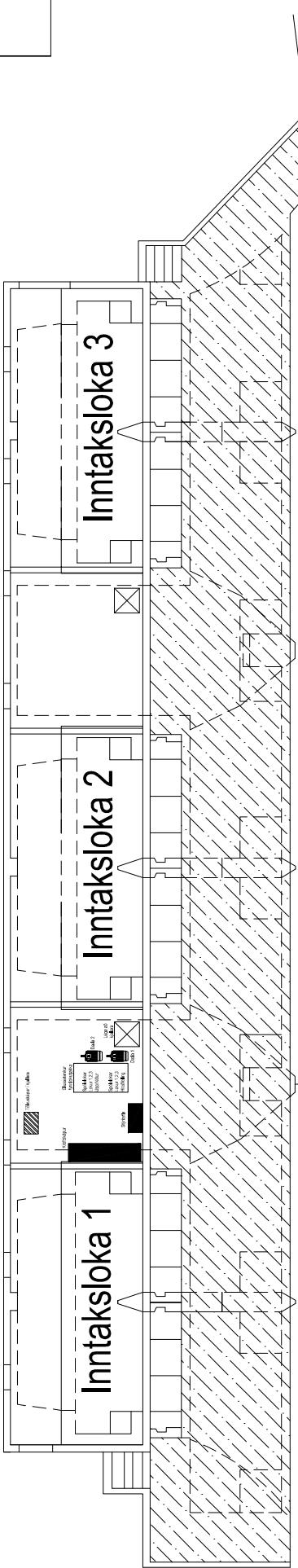
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Hunni: Brigitte Steiner		Kennr.: Samt: 865 99 86		BLADS: 1af 1	1 Formulat:
Vifab: Brigitte Steiner		Aðilsmárunúmer:		1 Heft MEIL/Verginni	Datos: 05/04/2013
				1 Heft	
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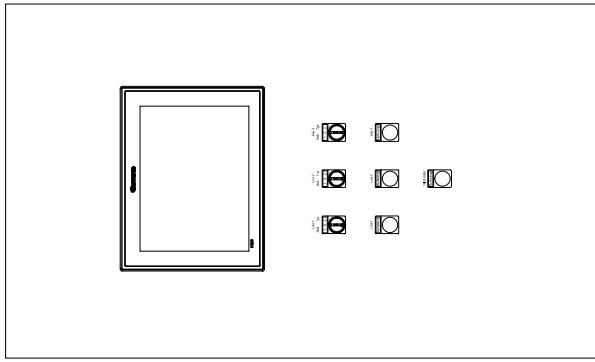
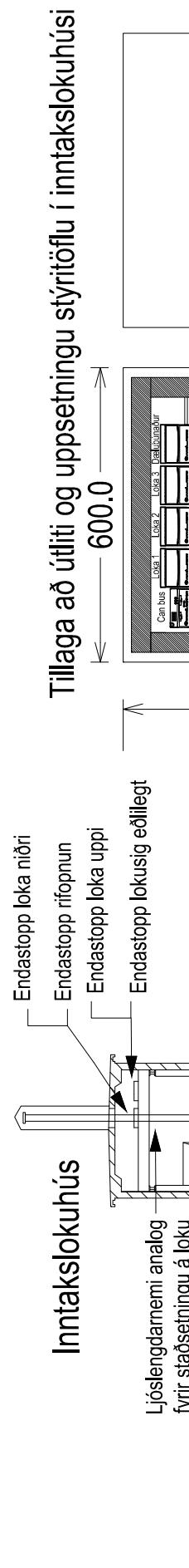
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BLADS. I ÅR

Grunnmynd inntakslokuhús



Snið inntakslokuhús



1	Formati:	2	Dates: 05.04.2013
A	BLADS: 1 af 1	B	1 Hæð MEUKVenginn
C	Grunnmynd, smið og útlit töflu	D	Inntakskinnis íafoss
E	Hálfur	F	Íslensk

Digital þrýstiskynjari þrýstíþá full
Analog þrýstiskynjari þrýstíþá full

Botnlokuhús

Kraftskápur

Botnloka 1

Mótor fyrir opnum/lokun
á botnloku í gegnum
stóran gírbúnað

Botnloka 2

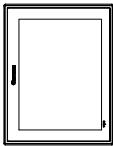
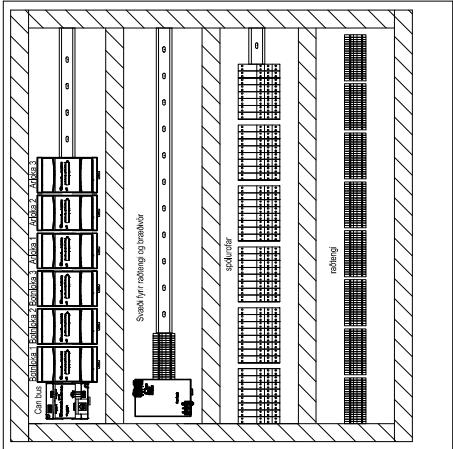
Mótor fyrir opnum/lokun
á botnloku í gegnum
stóran gírbúnað

Botnloka 3

Mótor fyrir opnum/lokun
á botnloku í gegnum
stóran gírbúnað

Ný Styritafía

Tillaga að útliti og uppsætingu stýritöflu í botnlokuhúsi



Herranð:
Björn og Steinþór
Yfleðið:
Björn og Steinþór
Samþ. BRS og SC
Kermt:
Adalheiður:

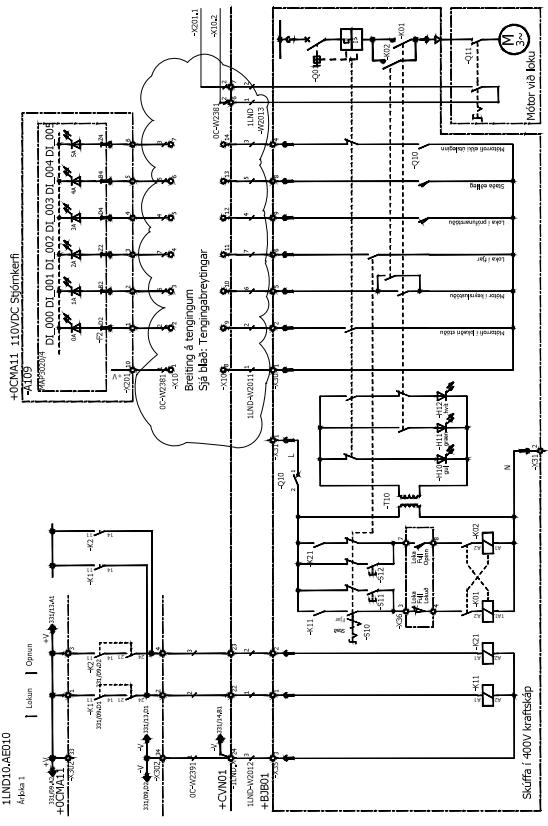
Grunnmynd og útlit töflu
Botnlokuhús
Írafoss

M/E/L/K/V: enginn

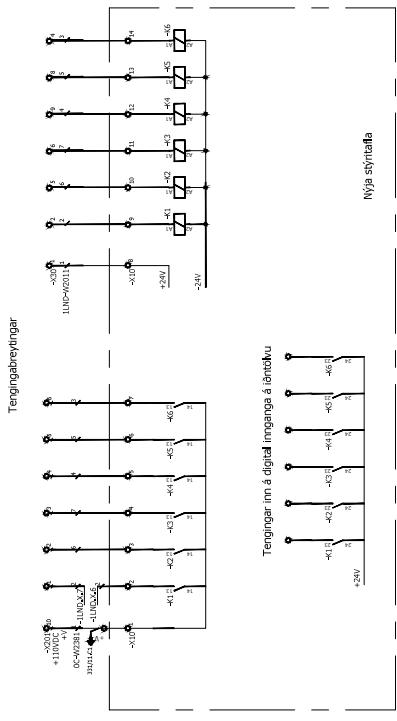
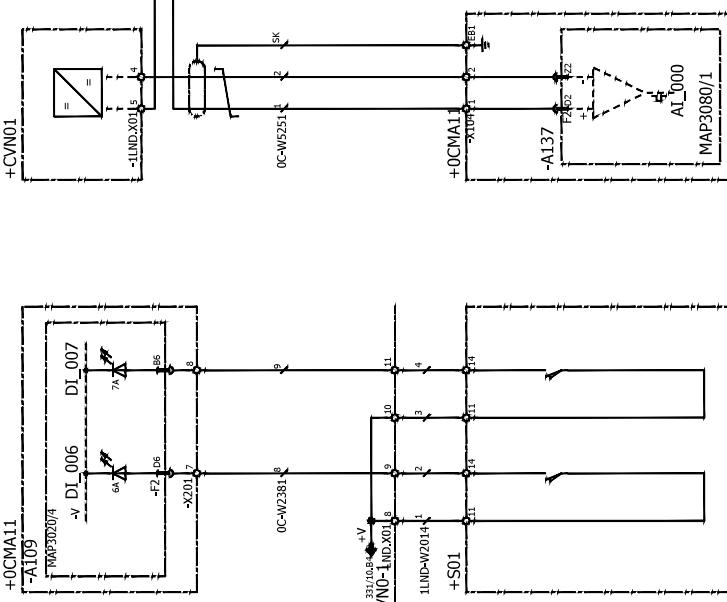
BLADS: 1 af 1

DAGSS 05/04/2013

Fjármálf.



Árloka 1



Hannad:	Birgr og Steinar
Yfirlætt:	Birgr og Steinar
Samb.: BRS og S	
Aðalþróunarjúr:	

MÆLIKV: enginn

Inntakslokuhús		
Innmerki	Analog	Digital
Inntaksloka 1	1	12
Inntaksloka 2	1	12
Inntaksloka 3	1	12
Dælukerfi	2	9
Samtals	5	45

Inntakslokuhús.	
Útmerki.	Digital.
Inntaksloka 1	12
Inntaksloka 2	12
Inntaksloka 3	12
Dælukerfi	2
Samtals	38

Stöðvarhús		
Innmerki	Analog	Digital
Inntaksloka 1	3	2
Inntaksloka 2	3	2
Inntaksloka 3	3	2
Samtals	9	6

Stöðvarhús	
Útmerki.	Digital.
Inntaksloka 1	1
Inntaksloka 2	1
Inntaksloka 3	1
Samtals	3

Botnlokuhús.		
Innmerki	Analog	Digital
Botnloka 1	1	9
Botnloka 2	1	9
Botnloka 3	1	9
Árloka 1	1	9
Árloka 2	1	9
Árloka 3	1	9
Annað.	2	
Samtals	8	54

Botnlokuhús.	
Útmerki.	Digital.
Botnloka 1	2
Botnloka 2	2
Botnloka 3	2
Árloka 1	2
Árloka 2	2
Árloka 3	2
Annað.	
Samtals	12

Samtals innmerki.		
	Analog	Digital
	22	105

Samtals útmerki.	
	Digital.
	53



Innmerki og útmerki (Input og output)

Inntaksloka 1.

Innmerki: Staðsett í lokuhúsi.

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacer
Loka 1 staðsetning Analog	Analog	MI-700	4-20mA
Loka 1 uppi	Digital	MB-708	
Loka 1 lokusig	Digital	MB-709	
Loka 1 óeðlilegt lokusig	Digital	MB-710	
Loka 1 (lokusig) neyðarútleysing	Digital	MB-711	
Loka 1 áfyllistaða	Digital	MB-712	
Loka 1 niðri	Digital	MB-713	
Loka 1 þrýstipípa full.	Digital	MB-714	
Loka 1 neyðarútleysing (hnappur)	Digital	MB-715	
Loka 1 Hand / Auto	Digital	MB-716	
Opnun á loku (-K3)	Digital	MB-732	Elcad: 310/24
Lokun á loku (-K2)	Digital	MB-729	Elcad: 310/24
Neyðarstöðvun frá vél (-K87)	Digital	MB-725	Elcad: 310/24

Innmerki: Staðsett í vélasal stöðvarhúsi.

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacer
Vél 1 MW.	Analog	MI-701	4-20mA
Vél 1 leiðiskóflustaða	Analog	MI-702	4-20mA
Loka 1 þrýstingur > 1.5 bar	Analog	MI-704	4-20mA
Vél 1 prófunarhamur á inntakslokustýringu	Digital	MB-730	
Vél 1 stopp V<90% („niður“)	Digital	MB-717	



Útmerki. Inntaksloka 1.

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacing
Loka upp. (spóla)	Digital	MB-740	
Loka niður. (spóla)	Digital	MB-741	
Felling. (spóla)	Digital	MB-742	
Loka lokuð (-K106)	Digital	MB-713	Elcad: 310/26
Loka opin (-K104)	Digital	MB-708	Elcad: 310/26
Loka í fjarstýringu (-S2)	Digital	MB-703	Elcad: 310/26
Loka í lokun (-K100) (-K105)	Digital	MB-743	Elcad: 310/26
Óeðlilegt lokusig (-K107)	Digital	MB-744	Elcad: 310/26
Loka í opnum (-K103)	Digital	MB-745	Elcad: 310/26
Almenn viðvörun frá loku.	Digital	MB-746	Elcad: 310/26
DC viðvörun	Digital	MB-747	Elcad: 310/26
Lokusig viðvörun	Digital	MB-748	Elcad: 310/26

Útmerki: Staðsett í vélasal stöðvarhúsi.

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacing
Gaumljós fyrir prófunarham á inntakslokustýringu	Digital	MB-749	



Inntaksloka 2.

Innmerki: Staðsett í lokuhúsi.

Lýsing	Gerð	Nafn (m-bit)	Tegund analog / Teikningarnúmer Efacing
Loka 2 staðsetning Analog	Analog	MI-800	4-20mA
Loka 2 uppi	Digital	MB-808	
Loka 2 lokusig	Digital	MB-809	
Loka 2 óeðlilegt lokusig	Digital	MB-810	
Loka 2 (lokusig) neyðarútleysing	Digital	MB-811	
Loka 2 áfyllistaða	Digital	MB-812	
Loka 2 niðri	Digital	MB-813	
Loka 2 þrýstipípa full	Digital	MB-814	
Loka 2 Neyðarútleysing (hnappur)	Digital	MB-815	
Loka 2 Hand / Auto	Digital	MB-816	
Opnun á loku (-K3)	Digital	MB-832	Elcad: 310/24
Lokun á loku (-K2)	Digital	MB-829	Elcad: 310/24
Neyðarstöðvun frá vél (-K87)	Digital	MB-825	Elcad: 310/24

Innmerki: Staðsett í vélasal stöðvarhúsi.

Lýsing	Gerð	Nafn (m-bit)	Tegund analog / Teikningarnúmer Efacing
Vél 2 MW.	Analog	MI-801	4-20mA
Vél 2 leiðiskóflustaða	Analog	MI-802	4-20mA
Loka 2 þrýstingur > 1.5 bar	Analog	MI-804	4-20mA
Vél 2 prófunarhamur á inntakslokustýringu	Digital	MB-830	
Vél 2 stopp („niður“)	Digital	MB-817	



Útmerki: Inntaksloka 2.

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacer
Loka upp. (spóla)	Digital	MB-840	
Loka niður. (spóla)	Digital	MB-841	
Felling .(spóla)	Digital	MB-842	
Loka lokuð (-K106)	Digital	MB-813	Elcad: 310/26
Loka opin (-K104)	Digital	MB-808	Elcad: 310/26
Loka í fjarstýringu (-S2)	Digital	MB-803	Elcad: 310/26
Loka í lokun (-K100) (-K105)	Digital	MB-843	Elcad: 310/26
Óeðlilegt lokusig (-K107)	Digital	MB-844	Elcad: 310/26
Loka í opnum (-K103)	Digital	MB-845	Elcad: 310/26
Almenn viðvörun frá loku.	Digital	MB-846	Elcad: 310/26
DC viðvörun	Digital	MB-847	Elcad: 310/26
Lokusig viðvörun	Digital	MB-848	Elcad: 310/26

Útmerki: Staðsett í vélasal stöðvarhúsi.

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacer
Gaumljós fyrir prófunarham á inntakslokustýringu	Digital	MB-849	



Inntaksloka 3.

Innmerki: Staðsett í lokuhúsi.

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacing
Loka 3 staðsetning Analog	Analog	MI-900	4-20mA
Loka 3 uppi	Digital	MB-908	
Loka 3 lokusig	Digital	MB-909	
Loka 3 óeðlilegt lokusig	Digital	MB-910	
Loka 3 (lokusig) neyðarútleysing	Digital	MB-911	
Loka 3 áfyllistaða	Digital	MB-912	
Loka 3 niðri	Digital	MB-913	
Loka 3 þrýstipípa full	Digital	MB-914	
Loka 3 neyðarútleysing (hnappur)	Digital	MB-915	
Loka 3 Hand / Auto	Digital	MB-916	
Opnun á loku (-K3)	Digital	MB-932	Elcad: 310/24
Lokun á loku (-K2)	Digital	MB-929	Elcad: 310/24
Neyðarstöðvun frá vél (-K87)	Digital	MB-925	Elcad: 310/24

Innmerki: Staðsett í vélasal stöðvarhúsi.

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacing
Vél 3 MW.	Analog	MI-901	4-20mA
Vél 3 leiðiskóflustaða.	Analog	MI-902	4-20mA
Loka 3 þrýstingur > 1.5 bar	Analog	MI-904	4-20mA
Vél 3 prófunarhamur á inntakslokustýringu	Digital	MB-930	
Vél 3 stopp („niður“)	Digital	MB-917	



Útmerki: Inntaksloka 3.

Lýsing	Gerð	Nafn (m-bití)	Skölun (upplausn) / Teikningarnúmer
Loka upp. (spóla)	Digital	MB-940	
Loka niður. (spóla)	Digital	MB-941	
Felling. (Spóla)	Digital	MB-942	
Loka lokuð (-K106)	Digital	MB-913	Elcad: 310/26
Loka opin (-K104)	Digital	MB-908	Elcad: 310/26
Loka í fjarstýringu (-S2)	Digital	MB-903	Elcad: 310/26
Loka í lokun (-K100) (-K105)	Digital	MB-943	Elcad: 310/26
Óeðlilegt lokusig (-K107)	Digital	MB-944	Elcad: 310/26
Loka í opnum (-K103)	Digital	MB-945	Elcad: 310/26
Almenn viðvörun frá loku	Digital	MB-946	Elcad: 310/26
DC viðvörun	Digital	MB-947	Elcad: 310/26
Lokusig viðvörun	Digital	MB-948	Elcad: 310/26

Útmerki: Staðsett í vélasal stöðvarhúsi.

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacing
Gaumljós fyrir prófunarham á inntakslokustýringu	Digital	MB-949	



Innmerki: Dælukerfi inntakslokur

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacer
Dælukerfi þrýstingur	Digital / Analog	MI-1000	4-20mA
Dæla 1 Fjar/stað	Digital	MB-1006	Elcad: 330/360
Dæla 1 Bilun	Digital	MB-1025	Elcad: 330/360
Dæla 1 Í gangi	Digital	MB-1027	Elcad: 330/360
Dæla 2 Fjar/stað	Digital	MB-1007	Elcad: 330/361
Dæla 2 Bilun	Digital	MB-1026	Elcad: 330/361
Dæla 2 Í gangi	Digital	MB-1028	Elcad: 330/361
Dæla 1 Valin	Digital	MB-1000	
Dæla 2 Valin	Digital	MB-1001	
Dælustýring neyðarútleysing (hnappur)	Digital	MB-1029	
Olíuhæð á forðatank	Analog	MI-1001	4-20mA

Útmerki: Dælukerfi inntakslokur.

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacer
Dæla 1 í gang	Digital	MB-1030	
Dæla 2 í gang	Digital.	MB-1031	

**Innmerki: Botnloka 1.**

Lýsing	Gerð	Nafn (m-bití)	Skölun (upplausn) / Teikningarnúmer
Botnloka 1 staða %	Analog	MI-100	4-20mA Elcad: 331/23
Botnloka 1 stað/fjar	Digital	MB-126	Elcad: 331/22
Botnloka 1 fullöpin	Digital	MB-133	Elcad: 331/23
Botnloka 1 fulllokuð	Digital	MB-134	Elcad: 331/23
Botnloka 1 bilun	Digital	MB-131	Elcad: 331/22
Keyrsla upp „Virk“	Digital	MB-124	Elcad: 331/22
Keyrsla niður „Virk“	Digital	MB-123	Elcad: 331/22
Opnun á loku. (-K7)	Digital	Fer beint á liða í skúffu	Elcad: 331/21
Lokun á loku. (-K8)	Digital	Fer beint á liða í skúffu	Elcad: 331/21
Staða eðlileg á skúffu	Digital	MB-132	Elcad: 331/22

Útmerki: Botnloka 1.

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacer
Keyrsla upp	Digital	MB-135	Elcad: 331/22
Keyrsla niður	Digital	MB-136	Elcad: 331/22



Innmerki: Botnloka 2

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacec
Botnloka 2 staða %	Analog	MI-200	4-20mA Elcad: 331/27
Botnloka 2 stað/fjar	Digital	MB-226	Elcad: 331/26
Botnloka 2 fullöpin	Digital	MB-233	Elcad: 331/27
Botnloka 2 fulllokuð	Digital	MB-234	Elcad: 331/27
Botnloka 2 bilun	Digital	MB-231	Elcad: 331/26
Keyrsla upp „Virk“	Digital	MB-224	Elcad: 331/26
Keyrsla niður „Virk“	Digital	MB-223	Elcad: 331/26
Opnun á loku. (-K9)	Digital	Fer beint á liða í skúffu	Elcad: 331/25
Lokun á loku. (-K10)	Digital	Fer beint á liða í skúffu	Elcad: 331/25
Staða eðlileg á skúffu	Digital	MB-232	Elcad: 331/26

Útmerki: Botnloka 2.

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacec
Keyrsla upp	Digital	MB-235	Elcad: 331/10
Keyrsla niður	Digital	MB-236	Elcad: 331/10



Innmerki: Botnloka 3

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacec
Botnloka 3 staða %	Analog	MI-300	4-20mA Elcad: 331/31
Botnloka 3 stað/fjar	Digital	MB-326	Elcad: 331/30
Botnloka 3 fullöpin	Digital	MB-333	Elcad: 331/31
Botnloka 3 fulllokuð	Digital	MB-334	Elcad: 331/31
Botnloka 3 bilun	Digital	MB-331	Elcad: 331/30
Keyrsla upp „Virk“	Digital	MB-324	Elcad: 331/30
Keyrsla niður „Virk“	Digital	MB-323	Elcad: 331/30
Opnun á loku. (-K11)	Digital	Fer beint á liða í skúffu	Elcad: 331/29
Lokun á loku. (-K12)	Digital	Fer beint á liða í skúffu	Elcad: 331/29
Staða eðlileg á skúffu	Digital	MB-332	Elcad: 331/30

Útmerki: Botnloka 3.

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacec
Keyrsla upp	Digital	MB-335	Elcad: 331/10
Keyrsla niður	Digital	MB-336	Elcad: 331/10



Innmerki: Árloka 1

Lýsing	Gerð	Nafn (m-bit)	Tegund analog / Teikningarnúmer Efacing
Árloka 1 staða %	Analog	MI-400	4-20mA Elcad: 331/11
Árloka 1 Stað/fjar	Digital	MB-426	Elcad: 331/10
Árloka 1 fulllopin	Digital	MB-433	Elcad: 331/11
Árloka 1 fulllokuð	Digital	MB-434	Elcad: 331/11
Árloka 1 bilun	Digital	MB-431	Elcad: 331/10
Keyrsla upp „Virk“	Digital	MB-424	Elcad: 331/10
Keyrsla niður „Virk“	Digital	MB-423	Elcad: 331/10
Opnun á loku. (-K1)	Digital	Fer beint á liða í skúffu	Elcad: 331/09
Lokun á loku. (-K2)	Digital	Fer beint á liða í skúffu	Elcad: 331/09
Staða eðlileg á skúffu	Digital	MB-432	Elcad: 331/10

Útmerki: Árloka 1.

Lýsing	Gerð	Nafn (m-bit)	Tegund analog / Teikningarnúmer Efacing
Keyrsla upp	Digital	MB-435	Elcad: 331/10
Keyrsla niður	Digital	MB-436	Elcad: 331/10



Innmerki: Árloka 2

Lýsing	Gerð	Nafn (m-bit)	Tegund analog / Teikningarnúmer Efacing
Árloka 2 staða %	Analog	MI-500	4-20mA Elcad: 331/15
Árloka 2 stað/fjar	Digital	MB-526	Elcad: 331/14
Árloka 2 fulllopin	Digital	MB-533	Elcad: 331/15
Árloka 2 fulllokuð	Digital	MB-534	Elcad: 331/15
Árloka 2 bilun	Digital	MB-531	Elcad: 331/14
Keyrsla upp „Virk“	Digital	MB-524	Elcad: 331/14
Keyrsla niður „Virk“	Digital	MB-523	Elcad: 331/14
Opnun á loku. (-K3)	Digital	Fer beint á liða í skúffu	Elcad: 331/13
Lokun á loku. (-K4)	Digital	Fer beint á liða í skúffu	Elcad: 331/13
Staða eðlileg á skúffu.	Digital	MB-532	Elcad: 331/14

Útmerki: Árloka 2.

Lýsing	Gerð	Nafn (m-bit)	Tegund analog / Teikningarnúmer Efacing
Keyrsla upp	Digital	MB-535	Elcad: 331/14
Keyrsla niður.	Digital	MB-536	Elcad: 331/14



Innmerki: Árloka 3

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacer
Árloka 3 staða %	Analog	MI-600	4-20mA Elcad: 331/19
Árloka 3 stað/fjar	Digital	MB-626	Elcad: 331/18
Árloka 3 fulllopin	Digital	MB-633	Elcad: 331/19
Árloka 3 fulllokuð	Digital	MB-634	Elcad: 331/19
Árloka 3 bilun	Digital	MB-631	Elcad: 331/18
Keyrsla upp „Virk“	Digital	MB-624	Elcad: 331/18
Keyrsla niður „Virk“	Digital	MB-623	Elcad: 331/18
Opnun á loku. (-K5)	Digital	Fer beint á liða í skúffu	Elcad: 331/17
Lokun á loku. (-K6)	Digital	Fer beint á liða í skúffu	Elcad: 331/17
Staða eðlileg á skúffu.	Digital	MB-632	Elcad: 331/18

Útmerki: Árloka 3.

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacer
Keyrsla upp	Digital	MB-635	Elcad: 331/18
Keyrsla niður.	Digital	MB-636	Elcad: 331/18

Innmerki: Sameiginlegt

Lýsing	Gerð	Nafn (m-bití)	Tegund analog / Teikningarnúmer Efacer
Vatnshæð írafosslón	Analog	MI-4	4-20mA
Útihiði botnlokuhús.	Analog	MI-5	4-20mA



Í þessu skjali eru listaðir upp allir MB-bitar og MI-bitar sem eru notaðir í verkefninu.

Einnig eru upplýsingar um staðsetningu á hverjum bita. (ATH hver biti getur verið á fleiri en einum stað)

M-Bitar (Memory bits)

Biti_NR	Sameiginlegt	Hvar
MB_0	Hnappur "Inntakslokur"	Start-up. HMI
MB_1	Hnappur "Botnlokur"	Start-up. HMI
MB_2	Hnappur "Árlokur"	Start-up. HMI
MB_3	Hnappur "Dælustýring"	Start-up. HMI
MB_4	Hnappur "Endursetning"	Start-up. HMI
MB_5	Hnappur "Aðvaranir"	Start-up. HMI
MB_6	Gaumljós "aðvörun" Inntakslokur	Start-up. HMI
MB_7	Gaumljós "aðvörun" Botnlokur	Start-up. HMI
MB_8	Gaumljós "aðvörun" Árlokur	Start-up. HMI
MB_9	Gaumljós "aðvörun" Dælustýring	Start-up. HMI
MB_10	Hnappur "Til baka" á skjámyndum	Start-up. HMI
MB_11	Hnappur "Til baka" frá "Aflestur"	Aflestur HMI
MB_12	Hnappur fyrir skjámynd "Aflestur"	Inntakslokur HMI
MB_13	Hnappur fyrir "Truflanastýringu"	Árlokur og botnlokur HMI
MB_14	Fyrir áminningu á "Truflanastýringu"	Aflestur Ladder.
MB_15	Truflanastýring í gang	Aflestur Ladder.
MB_16	Truflanastýring stöðvun	Aflestur Ladder.
MB_17	Set-Reset hjálparbiti fyrir truflanast.	Aflestur Ladder.
MB_18	Vetur eða sumar frá dagatali	Aflestur Ladder.
MB_19	Árlokur opnun truflun	Aflestur Ladder.
MB_20	Rennsli +10%	Aflestur Ladder.
MB_21	Rennsli -10%	Aflestur Ladder.
MB_22	Rennslistruflun Lei 76	Aflestur Ladder.
MB_23	Botnlokur opnun truflun	Aflestur Ladder.



Biti _ NR	Botnloka 1	Hvar
MB_100	Hnappur Botnloku 1 0%	Botnlokur HMI
MB_101	Hnappur Botnloku 1 25%	Botnlokur HMI
MB_102	Hnappur Botnloku 1 50%	Botnlokur HMI
MB_103	Hnappur Botnloku 1 75%	Botnlokur HMI
MB_104	Hnappur Botnloku 1 100%	Botnlokur HMI
MB_105	Hnappur Botnloku 1 Stopp	Botnlokur HMI
MB_106	Gaumljós Botnloku 1 opnun	Botnlokur HMI
MB_107	Gaumljós Botnloku 1 lokun	Botnlokur HMI
MB_108	Gaumljós Botnloku 1 Fullopin	Botnlokur HMI
MB_109	Gaumljós Botnloku 1 Fulllokuð	Botnlokur HMI
MB_110	Gaumljós Botnloku 1 Bilun	Botnlokur HMI
MB_111	Set-Reset 0%	Botnloka 1 Ladder
MB_112	Set-Reset 25% UPP	Botnloka 1 Ladder
MB_113	Set-Reset 50% UPP	Botnloka 1 Ladder
MB_114	Set-Reset 75% UPP	Botnloka 1 Ladder
MB_115	Set-Reset 100%	Botnloka 1 Ladder
MB_116	Set-Reset 25% Niður	Botnloka 1 Ladder
MB_117	Set-Reset 50% Niður	Botnloka 1 Ladder
MB_118	Set-Reset 75% Niður	Botnloka 1 Ladder
MB_119	Skygging á hnappa 0%	Botnloka 1 Ladder
MB_120	Skygging á hnappa 25%	Botnloka 1 Ladder
MB_121	Skygging á hnappa 50%	Botnloka 1 Ladder
MB_122	Skygging á hnappa 75%	Botnloka 1 Ladder
MB_123	Loka í gangi niður	Botnloka 1 Ladder
MB_124	Loka í gangi upp.	Botnloka 1 Ladder
MB_125	Lokukeyrsla.	Botnloka 1 Ladder
MB_126	"Stað % Fjar"	Botnloka 1 Ladder
MB_127	Set-Reset á bilun.	Botnloka 1 Ladder
MB_128	Hnappur fyrir reset á bilun	Botnloka 1 Ladder
MB_129	Biti fyrir stöðvun á keyrslu	Botnloka 1 Ladder
MB_130	Merki frá truflanastýringu	Botnloka 1 Ladder
MB_131	Safnviðvörun Bilun	Botnloka 1 Ladder
MB_132	Bilanir frá 400V skáp	Botnloka 1 Ladder
MB_133	Fullopin (innput)	Botnloka 1 Ladder
MB_134	Fulllokuð (Innput)	Botnloka 1 Ladder
MB_135	Keyrsla í gangi upp (output)	Botnloka 1 Ladder
MB_136	Keyrsla í gangi niður (output)	Botnloka 1 Ladder



Biti _ NR	Botnloka 2	Hvar
MB_200	Hnappur Botnloku 2 0%	Botnlokur HMI
MB_201	Hnappur Botnloku 2 25%	Botnlokur HMI
MB_202	Hnappur Botnloku 2 50%	Botnlokur HMI
MB_203	Hnappur Botnloku 2 75%	Botnlokur HMI
MB_204	Hnappur Botnloku 2 100%	Botnlokur HMI
MB_205	Hnappur Botnloku 2 Stopp	Botnlokur HMI
MB_206	Gaumljós Botnloku 2 opnun	Botnlokur HMI
MB_207	Gaumljós Botnloku 2 lokun	Botnlokur HMI
MB_208	Gaumljós Botnloku 2 Fullopin	Botnlokur HMI
MB_209	Gaumljós Botnloku 2 Fulllokuð	Botnlokur HMI
MB_210	Gaumljós Botnloku 2 Bilun	Botnlokur HMI
MB_211	Set-Reset 0%	Botnloka 2 Ladder
MB_212	Set-Reset 25% UPP	Botnloka 2 Ladder
MB_213	Set-Reset 50% UPP	Botnloka 2 Ladder
MB_214	Set-Reset 75% UPP	Botnloka 2 Ladder
MB_215	Set-Reset 100%	Botnloka 2 Ladder
MB_216	Set-Reset 25% Niður	Botnloka 2 Ladder
MB_217	Set-Reset 50% Niður	Botnloka 2 Ladder
MB_218	Set-Reset 75% Niður	Botnloka 2 Ladder
MB_219	Skygging á hnappa 0%	Botnloka 2 Ladder
MB_220	Skygging á hnappa 25%	Botnloka 2 Ladder
MB_221	Skygging á hnappa 50%	Botnloka 2 Ladder
MB_222	Skygging á hnappa 75%	Botnloka 2 Ladder
MB_223	Loka í gangi niður	Botnloka 2 Ladder
MB_224	Loka í gangi upp.	Botnloka 2 Ladder
MB_225	Lokukeyrsla	Botnloka 2 Ladder
MB_226	"Stað % Fjar"	Botnloka 2 Ladder
MB_227	Set-Reset á bilun.	Botnloka 2 Ladder
MB_228	Hnappur fyrir reset á bilun	Botnloka 2 Ladder
MB_229	Biti fyrir stöðvun á keyrslu	Botnloka 2 Ladder
MB_230	Merki frá truflanastýringu	Botnloka 2 Ladder
MB_231	Safnviðvörðun Bilun	Botnloka 2 Ladder
MB_232	Bilanir frá 400V skáp	Botnloka 2 Ladder
MB_233	Fullopin (innput)	Botnloka 2 Ladder
MB_234	Fulllokuð (Innput)	Botnloka 2 Ladder
MB_235	Keyrsla í gangi upp (output)	Botnloka 2 Ladder
MB_236	Keyrsla í gangi niður (output)	Botnloka 2 Ladder



Biti _ NR	Botnloka 3	Hvar
MB_300	Hnappur Botnloku 3 0%	Botnlokur HMI
MB_301	Hnappur Botnloku 3 25%	Botnlokur HMI
MB_302	Hnappur Botnloku 3 50%	Botnlokur HMI
MB_303	Hnappur Botnloku 3 75%	Botnlokur HMI
MB_304	Hnappur Botnloku 3 100%	Botnlokur HMI
MB_305	Hnappur Botnloku 3 Stopp	Botnlokur HMI
MB_306	Gaumljós Botnloku 3 opnun	Botnlokur HMI
MB_307	Gaumljós Botnloku 3 lokun	Botnlokur HMI
MB_308	Gaumljós Botnloku 3 Fullopin	Botnlokur HMI
MB_309	Gaumljós Botnloku 3 Fulllokuð	Botnlokur HMI
MB_310	Gaumljós Botnloku 3 Bilun	Botnlokur HMI
MB_311	Set-Reset 0%	Botnloka 3 Ladder
MB_312	Set-Reset 25% UPP	Botnloka 3 Ladder
MB_313	Set-Reset 50% UPP	Botnloka 3 Ladder
MB_314	Set-Reset 75% UPP	Botnloka 3 Ladder
MB_315	Set-Reset 100%	Botnloka 3 Ladder
MB_316	Set-Reset 25% Niður	Botnloka 3 Ladder
MB_317	Set-Reset 50% Niður	Botnloka 3 Ladder
MB_318	Set-Reset 75% Niður	Botnloka 3 Ladder
MB_319	Skygging á hnappa 0%	Botnloka 3 Ladder
MB_320	Skygging á hnappa 25%	Botnloka 3 Ladder
MB_321	Skygging á hnappa 50%	Botnloka 3 Ladder
MB_322	Skygging á hnappa 75%	Botnloka 3 Ladder
MB_323	Loka í gangi niður	Botnloka 3 Ladder
MB_324	Loka í gangi upp.	Botnloka 3 Ladder
MB_325	Lokukeyrsla	Botnloka 3 Ladder
MB_326	"Stað % Fjar"	Botnloka 3 Ladder
MB_327	Set-Reset á bilun	Botnloka 3 Ladder
MB_328	Hnappur fyrir reset á bilun	Botnloka 3 Ladder
MB_329	Biti fyrir stöðvun á keyrslu	Botnloka 3 Ladder
MB_330	Merki frá truflanastýringu	Botnloka 3 Ladder
MB_331	Safnviðvörun Bilun	Botnloka 3 Ladder
MB_332	Bilanir frá 400V skáp	Botnloka 3 Ladder
MB_333	Fullopin (innput)	Botnloka 3 Ladder
MB_334	Fulllokuð (Innput)	Botnloka 3 Ladder
MB_335	Keyrsla í gangi upp (output)	Botnloka 3 Ladder
MB_336	Keyrsla í gangi niður (output)	Botnloka 3 Ladder



Biti _ NR	Árloka 1	Hvar
MB_400	Hnappur Árloku 1 0%	Árlokur HMI
MB_401	Hnappur Árloku 1 25%	Árlokur HMI
MB_402	Hnappur Árloku 1 50%	Árlokur HMI
MB_403	Hnappur Árloku 1 75%	Árlokur HMI
MB_404	Hnappur Árloku 1 100%	Árlokur HMI
MB_405	Hnappur Árloku 1 Stopp	Árlokur HMI
MB_406	Gaumljós Árloku 1 opnun	Árlokur HMI
MB_407	Gaumljós Árloku 1 lokun	Árlokur HMI
MB_408	Gaumljós Árloku 1 Fullopin	Árlokur HMI
MB_409	Gaumljós Árloku 1 Fulllokuð	Árlokur HMI
MB_410	Gaumljós Árloku 1 Bilun	Árlokur HMI
MB_411	Set-Reset 0%	Árloka 1 ladder
MB_412	Set-Reset 25% UPP	Árloka 1 ladder
MB_413	Set-Reset 50% UPP	Árloka 1 ladder
MB_414	Set-Reset 75% UPP	Árloka 1 ladder
MB_415	Set-Reset 100%	Árloka 1 ladder
MB_416	Set-Reset 25% Niður	Árloka 1 ladder
MB_417	Set-Reset 50% Niður	Árloka 1 ladder
MB_418	Set-Reset 75% Niður	Árloka 1 ladder
MB_419	Skygging á hnappa 0%	Árloka 1 ladder
MB_420	Skygging á hnappa 25%	Árloka 1 ladder
MB_421	Skygging á hnappa 50%	Árloka 1 ladder
MB_422	Skygging á hnappa 75%	Árloka 1 ladder
MB_423	Loka í gangi niður	Árloka 1 ladder
MB_424	Loka í gangi upp.	Árloka 1 ladder
MB_425	Lokukeyrsla	Árloka 1 ladder
MB_426	"Stað % Fjar"	Árloka 1 ladder
MB_427	Set-Reset á bilun	Árloka 1 ladder
MB_428	Hnappur fyrir reset á bilun	Árloka 1 ladder
MB_429	Biti fyrir stöðvun á keyrslu	Árloka 1 ladder
MB_430	Merki frá truflanastýringu	Árloka 1 ladder
MB_431	Safnviðvörun Bilun	Árloka 1 ladder
MB_432	Bilanir frá 400V skáp	Árloka 1 ladder
MB_433	Fullopin (innput)	Árloka 1 ladder
MB_434	Fulllokuð (Innput)	Árloka 1 ladder
MB_435	Keyrsla í gangi upp (output)	Árloka 1 ladder
MB_436	Keyrsla í gangi niður (output)	Árloka 1 ladder



Biti _ NR	Árloka 2	Hvar
MB_500	Hnappur Árloku 2 0%	Árlokur HMI
MB_501	Hnappur Árloku 2 25%	Árlokur HMI
MB_502	Hnappur Árloku 2 50%	Árlokur HMI
MB_503	Hnappur Árloku 2 75%	Árlokur HMI
MB_504	Hnappur Árloku 2 100%	Árlokur HMI
MB_505	Hnappur Árloku 2 Stopp	Árlokur HMI
MB_506	Gaumljós Árloku 2 opnun	Árlokur HMI
MB_507	Gaumljós Árloku 2 lokun	Árlokur HMI
MB_508	Gaumljós Árloku 2 Fullopin	Árlokur HMI
MB_509	Gaumljós Árloku 2 Fulllokuð	Árlokur HMI
MB_510	Gaumljós Árloku 2 Bilun	Árlokur HMI
MB_511	Set-Reset 0%	Árloka 2 ladder
MB_512	Set-Reset 25% UPP	Árloka 2 ladder
MB_513	Set-Reset 50% UPP	Árloka 2 ladder
MB_514	Set-Reset 75% UPP	Árloka 2 ladder
MB_515	Set-Reset 100%	Árloka 2 ladder
MB_516	Set-Reset 25% Niður	Árloka 2 ladder
MB_517	Set-Reset 50% Niður	Árloka 2 ladder
MB_518	Set-Reset 75% Niður	Árloka 2 ladder
MB_519	Skygging á hnappa 0%	Árloka 2 ladder
MB_520	Skygging á hnappa 25%	Árloka 2 ladder
MB_521	Skygging á hnappa 50%	Árloka 2 ladder
MB_522	Skygging á hnappa 75%	Árloka 2 ladder
MB_523	Loka í gangi niður	Árloka 2 ladder
MB_524	Loka í gangi upp.	Árloka 2 ladder
MB_525	Lokukeyrsla	Árloka 2 ladder
MB_526	"Stað % Fjar"	Árloka 2 ladder
MB_527	Set-Reset á bilun	Árloka 1 ladder
MB_528	Hnappur fyrir reset á bilun	Árloka 1 ladder
MB_529	Biti fyrir stöðvun á keyrslu	Árloka 1 ladder
MB_530	Merki frá truflanastýringu	Árloka 1 ladder
MB_531	Safnviðvörun Bilun.	Árloka 1 ladder
MB_532	Bilanir frá 400V skáp	Árloka 1 ladder
MB_533	Fullopin (innput)	Árloka 1 ladder
MB_534	Fulllokuð (Innput)	Árloka 1 ladder
MB_535	Keyrsla í gangi upp (output)	Árloka 1 ladder
MB_536	Keyrsla í gangi niður (output)	Árloka 1 ladder



Biti _ NR	Árloka 3	Hvar
MB_600	Hnappur Árloku 3 0%	Árlokur HMI
MB_601	Hnappur Árloku 3 25%	Árlokur HMI
MB_602	Hnappur Árloku 3 50%	Árlokur HMI
MB_603	Hnappur Árloku 3 75%	Árlokur HMI
MB_604	Hnappur Árloku 3 100%	Árlokur HMI
MB_605	Hnappur Árloku 3 Stopp	Árlokur HMI
MB_606	Gaumljós Árloku 3 opnun	Árlokur HMI
MB_607	Gaumljós Árloku 3 lokun	Árlokur HMI
MB_608	Gaumljós Árloku 3 Fullopin	Árlokur HMI
MB_609	Gaumljós Árloku 3 Fulllokuð	Árlokur HMI
MB_610	Gaumljós Árloku 3 Bilun	Árlokur HMI
MB_611	Set-Reset 0%	Árloka 2 ladder
MB_612	Set-Reset 25% UPP	Árloka 2 ladder
MB_613	Set-Reset 50% UPP	Árloka 2 ladder
MB_614	Set-Reset 75% UPP	Árloka 2 ladder
MB_615	Set-Reset 100%	Árloka 2 ladder
MB_616	Set-Reset 25% Niður	Árloka 2 ladder
MB_617	Set-Reset 50% Niður	Árloka 2 ladder
MB_618	Set-Reset 75% Niður	Árloka 2 ladder
MB_619	Skygging á hnappa 0%	Árloka 2 ladder
MB_620	Skygging á hnappa 25%	Árloka 2 ladder
MB_621	Skygging á hnappa 50%	Árloka 2 ladder
MB_622	Skygging á hnappa 75%	Árloka 2 ladder
MB_623	Loka í gangi niður	Árloka 2 ladder
MB_624	Loka í gangi upp.	Árloka 2 ladder
MB_625	Lokukeyrsla.	Árloka 2 ladder
MB_626	"Stað % Fjar"	Árloka 2 ladder
MB_627	Set-Reset á bilun	Árloka 1 ladder
MB_628	Hnappur fyrir reset á bilun	Árloka 1 ladder
MB_629	Biti fyrir stöðvun á keyrslu	Árloka 1 ladder
MB_630	Merki frá truflanastýringu	Árloka 1 ladder
MB_631	Safnviðvörun Bilun.	Árloka 1 ladder
MB_632	Bilanir frá 400V skáp	Árloka 1 ladder
MB_633	Fullopin (innput)	Árloka 1 ladder
MB_634	Fulllokuð (Innput)	Árloka 1 ladder
MB_635	Keyrsla í gangi upp (output)	Árloka 1 ladder
MB_636	Keyrsla í gangi niður (output)	Árloka 1 ladder



Biti _ NR	Inntaksloka 1	Hvar
MB_700	Hnappur "upp" inntaksloka 1	Inntakslokur HMI
MB_701	Hnappur "Niður" inntaksloka 1	Inntakslokur HMI
MB_702	Hnappur "Felling" inntaksloka 1	Inntakslokur HMI
MB_703	Inntaksloka 1 "Staðstýring"	Inntakslokur HMI
MB_704	Merking "Loka Uppi"	Inntakslokur HMI
MB_705	Merking "Áfyllistaða"	Inntakslokur HMI
MB_706	Merking "Loka niðri"	Inntakslokur HMI
MB_707	Merking "Loka í prófunarham"	Inntakslokur HMI
MB_708	Loka "uppi" (K-104) (Endastopp)	Inntaksloka 1-ladder
MB_709	Lokusig (eðlilegt) (Endastopp)	Inntaksloka 1-ladder
MB_710	Lokusig (óeðlilegt) (Endastopp)	Inntaksloka 1-ladder
MB_711	Lokusig (Neyðarútleysing) (Endastopp)	Inntaksloka 1-ladder
MB_712	Loka í áfyllistöðu (Endastopp)	Inntaksloka 1-ladder
MB_713	Loka niðri (K-106) (Endastopp)	Inntaksloka 1-ladder
MB_714	Þrýstipípa full	Inntaksloka 1-ladder
MB_715	Neyðarstöðvunarhnappur	Inntaksloka 1-ladder
MB_716	Loka 1 "hand & auto"	Inntaksloka 1-ladder
MB_717	Vél Stopp (V<90%)	Inntaksloka 1-ladder
MB_718	Set-Reset biti fyrir "Loka niður"	Inntaksloka 1-ladder
MB_719	Set-Reset biti fyrir "Loka Upp"	Inntaksloka 1-ladder
MB_720	Set-Reset biti fyrir "Lokusig"	Inntaksloka 1-ladder
MB_721	Set-Reset biti fyrir "Óeðlilegt lokusig"	Inntaksloka 1-ladder
MB_722	Set-Reset biti fyrir "Lokusig-Tripp-Felling"	Inntaksloka 1-ladder
MB_723	Set-Reset biti fyrir "Áfyllistöðu"	Inntaksloka 1-ladder
MB_724	Prófunahamur Inntaksloku	Inntaksloka 1-ladder
MB_725	Neyðastöðvun frá vélum. (K-87) (Innput)	Inntaksloka 1-ladder
MB_726	Loka "Uppkeyrsla"	Inntaksloka 1-ladder
MB_727	Loka "Uppkeyrsla í gangi"	Inntaksloka 1-ladder
MB_728	Digitalmerki frá "þrýstingur > 2kg/cm"	Inntaksloka 1-ladder
MB_729	Loka niður. (K-2) (Verður notað sem innput)	Inntaksloka 1-ladder
MB_730	Hnappur fyrir prófunarham	Aflestur HMI
MB_731	Biti fyrir prófunaham	Inntaksloka 1-ladder
MB_732	Loka upp. (K-3) (Verður notað sem innput)	Inntaksloka 1-ladder
MB_733	Set reset fyrir prófunaham.	Inntaksloka 1-ladder
MB_734		
MB_735	Endursetning á lokusigs teljurum	Inntaksloka 1-ladder
MB_736		
MB_737		
MB_738		



MB_739		
MB_740	Loka upp. (Spóla) (tengt við útgang)	Inntaksloka 1-ladder
MB_741	Loka niður. (spóla) (tengt við útgang)	Inntaksloka 1-ladder
MB_742	Felling (spóla) (tengt við útgang)	Inntaksloka 1-ladder
MB_743	Loka í lokun (-K100) (-K105)	Inntaksloka 1-ladder
MB_744	Óeðlilegt lokusig. (-K107)	Inntaksloka 1-ladder
MB_745	Loka í opnum (-K103)	Inntaksloka 1-ladder
MB_746	Almenn viðvörun frá loku.	Inntaksloka 1-ladder
MB_747	DC viðvörun.	Inntaksloka 1-ladder
MB_748	Lokusig viðvörun.	Inntaksloka 1-ladder
MB_749	Gaumljós fyrir prófunarham (Out)	Inntaksloka 1-ladder

Biti_NR	Inntaksloka 2	Hvar
MB_800	Hnappur "upp" inntaksloka 2	Inntakslokur HMI
MB_801	Hnappur "Niður" inntaksloka 2	Inntakslokur HMI
MB_802	Hnappur "Felling" inntaksloka 2	Inntakslokur HMI
MB_803	Inntaksloka 2 "Staðstýring"	Inntakslokur HMI
MB_804	Merking "Loka Uppi"	Inntakslokur HMI
MB_805	Merking "Áfyllistaða"	Inntakslokur HMI
MB_806	Merking "Loka niðri"	Inntakslokur HMI
MB_807	Merking "Loka í prófunarham"	Inntakslokur HMI
MB_808	Loka "uppi" (K-104) (Endastopp)	Inntaksloka 2-ladder
MB_809	Lokusig (eðlilegt) (Endastopp)	Inntaksloka 2-ladder
MB_810	Lokusig (óeðlilegt) (Endastopp)	Inntaksloka 2-ladder
MB_811	Lokusig (neyðarútleysing) (Endastopp)	Inntaksloka 2-ladder
MB_812	Loka í áfyllistöðu (Endastopp)	Inntaksloka 2-ladder
MB_813	Loka niðri (K-106) (Endastopp)	Inntaksloka 2-ladder
MB_814	Prýstipípa full	Inntaksloka 2-ladder
MB_815	Neyðarstöðvunarhnappur	Inntaksloka 2-ladder
MB_816	Loka 1 "hand & auto"	Inntaksloka 2-ladder
MB_817	Vél Stopp (V<90%)	Inntaksloka 2-ladder
MB_818	Set-Reset biti fyrir "Loka niður"	Inntaksloka 2-ladder
MB_819	Set-Reset biti fyrir "Loka Upp"	Inntaksloka 2-ladder
MB_820	Set-Reset biti fyrir "Lokusig"	Inntaksloka 2-ladder
MB_821	Set-Reset biti fyrir "Óeðlilegt lokusig"	Inntaksloka 2-ladder
MB_822	Set-Reset biti fyrir "Lokusig-Tripp-Felling"	Inntaksloka 2-ladder
MB_823	Set-Reset biti fyrir "Áfyllistöðu"	Inntaksloka 2-ladder
MB_824	Prófunahamur inntaksloku	Inntaksloka 2-ladder
MB_825	Neyðastöðvun frá vélum. (K-87) (Innput)	Inntaksloka 2-ladder



MB_826	Loka "Uppkeyrsla"	Inntaksloka 2-ladder
MB_827	Loka "Uppkeyrsla í gangi"	Inntaksloka 2-ladder
MB_828	Digitalmerki frá "þrýstingur > 2kg/cm"	Inntaksloka 2-ladder
MB_829	Loka niður.(K-2)(Verður notað sem input)	Inntaksloka 2-ladder
MB_830	Hnappur fyrir prófunarham	Aflestur HMI
MB_831	Biti fyrir prófunaham	Inntaksloka 2-ladder
MB_832	Loka upp. (K-3) (Verður notað sem input)	Inntaksloka 2-ladder
MB_833	Set reset fyrir prófunaham.	Inntaksloka 2-ladder
MB_834		
MB_835	Endursetning á lokusigs teljurum	Inntaksloka 2-ladder
MB_836		
MB_837		
MB_838		
MB_839		
MB_840	Loka upp. (spóla) (tengt við útgang)	Inntaksloka 2-ladder
MB_841	Loka niður. (spóla) (tengt við útgang)	Inntaksloka 2-ladder
MB_842	Felling (spóla) (tengt við útgang)	Inntaksloka 2-ladder
MB_843	Loka í lokun (-K100) (-K105)	Inntaksloka 2-ladder
MB_844	Óeðlilegt lokusig (-K107)	Inntaksloka 2-ladder
MB_845	Loka í opnum (-K103)	Inntaksloka 2-ladder
MB_846	Almenn viðvörun frá loku.	Inntaksloka 2-ladder
MB_847	DC viðvörun.	Inntaksloka 2-ladder
MB_848	Lokusig viðvörun.	Inntaksloka 2-ladder
MB_849	Gaumljós fyrir prófunarham (Out)	Inntaksloka 2-ladder

Biti_NR	Inntaksloka 3	Hvar
MB_900	Hnappur "upp" inntaksloka 3	Inntakslokur HMI
MB_901	Hnappur "Niður" inntaksloka 3	Inntakslokur HMI
MB_902	Hnappur "Felling" inntaksloka 3	Inntakslokur HMI
MB_903	Inntaksloka 3 "Staðstýring"	Inntakslokur HMI
MB_904	Merking "Loka Uppi"	Inntakslokur HMI
MB_905	Merking "Áfyllistaða"	Inntakslokur HMI
MB_906	Merking "Loka niðri"	Inntakslokur HMI
MB_907	Merking "Loka í prófunarham"	Inntakslokur HMI
MB_908	Loka "uppi" (K-104) (Endastopp)	Inntaksloka 3-ladder
MB_909	Lokusig (eðlilegt) (Endastopp)	Inntaksloka 3-ladder
MB_910	Lokusig (óeðlilegt) (Endastopp)	Inntaksloka 3-ladder
MB_911	Lokusig (neyðarútleysing) (Endastopp)	Inntaksloka 3-ladder
MB_912	Loka í áfyllistöðu (Endastopp)	Inntaksloka 3-ladder



MB_913	Loka niðri (K-106) (Endastopp)	Inntaksloka 3-ladder
MB_914	Þrýstipípa full	Inntaksloka 3-ladder
MB_915	Neyðarstöðvunarhnappur	Inntaksloka 3-ladder
MB_916	Loka 1 "hand & auto"	Inntaksloka 3-ladder
MB_917	Vél stopp (V<90%)	Inntaksloka 3-ladder
MB_918	Set-Reset biti fyrir "Loka niður"	Inntaksloka 3-ladder
MB_919	Set-Reset biti fyrir "Loka Upp"	Inntaksloka 3-ladder
MB_920	Set-Reset biti fyrir "Lokusig"	Inntaksloka 3-ladder
MB_921	Set-Reset biti fyrir "Óeðlilegt lokusig"	Inntaksloka 3-ladder
MB_922	Set-Reset biti fyrir "Lokusig-Tripp-Felling"	Inntaksloka 3-ladder
MB_923	Set-Reset biti fyrir "Áfyllistöðu"	Inntaksloka 3-ladder
MB_924	Prófunahamur inntaksloku	Inntaksloka 3-ladder
MB_925	Neyðastöðvun frá vélum. (K-87) (Innput)	Inntaksloka 3-ladder
MB_926	Loka "Uppkeyrsla"	Inntaksloka 3-ladder
MB_927	Loka "Uppkeyrsla í gangi"	Inntaksloka 3-ladder
MB_928	Digitalmerki frá "þrýstingur > 2kg/cm"	Inntaksloka 3-ladder
MB_929	Loka niður.(K-2)(Verður notað sem innput)	Inntaksloka 3-ladder
MB_930	Hnappur fyrir prófunarham	Aflestur HMI
MB_931	Biti fyrir prófunaham	Inntaksloka 3-ladder
MB_932	Loka upp. (K-3) (Verður notað sem innput)	Inntaksloka 3-ladder
MB_933	Set reset fyrir prófunaham.	Inntaksloka 1-ladder
MB_934		
MB_935	Endursetning á lokusigs teljurum	Inntaksloka 1-ladder
MB_936		
MB_937		
MB_938		
MB_939		
MB_940	Loka upp. (spóla) (tengt við útgang)	Inntaksloka 1-ladder
MB_941	Loka niður. (spóla) (tengt við útgang)	Inntaksloka 1-ladder
MB_942	Felling (spóla) (tengt við útgang)	Inntaksloka 1-ladder
MB_943	Loka í lokun (-K100) (-K105)	Inntaksloka 1-ladder
MB_944	Óeðlilegt lokusig (-K107)	Inntaksloka 1-ladder
MB_945	Loka í opnum (-K103)	Inntaksloka 1-ladder
MB_946	Almenn viðvörun frá loku	Inntaksloka 1-ladder
MB_947	DC viðvörun	Inntaksloka 1-ladder
MB_948	Lokusig viðvörun	Inntaksloka 1-ladder
MB_949	Gaumljós fyrir prófunarham (Out)	Inntaksloka 1-ladder



Biti _ NR	Dælustýring	Hvar
MB_1000	Hnappur fyrir val á Dælu 1.	Dælustýring HMI
MB_1001	Hnappur fyrir val á Dælu 2.	Dælustýring HMI
MB_1002	Fyrir gaumljós á "Val á dælum.	Dælustýring HMI
MB_1003	Hnappur fyrir endursetningu á "bilun"	Dælustýring HMI
MB_1004	Heimild á dælukerfi.	Dælustýring HMI
MB_1005	Bilun í dælukerfi.	Dælustýring HMI
MB_1006	Dæla 1 Staðstýring	Dælustýring HMI
MB_1007	Dæla 2 Staðstýring	Dælustýring HMI
MB_1008	Fyrir blikk á lögn "Dæla 1"	Dælustýring HMI
MB_1009	Fyrir blikk á lögn "Dæla 2"	Dælustýring HMI
MB_1010	Fyrir blikk á lögn "Dæla 1&2"	Dælustýring HMI
MB_1011	"Set-Reset" Fyrir dæluval.	Dælustýring Ladder
MB_1012	Hjálparbiti 1 fyrir dælu 1.	Dælustýring Ladder
MB_1013	Hjálparbiti 1 fyrir dælu 2.	Dælustýring Ladder
MB_1014	Hjálparbiti 2 fyrir dælu 1.	Dælustýring Ladder
MB_1015	Hjálparbiti 2 fyrir dælu 2.	Dælustýring Ladder
MB_1016	Ræsing á dælu.	Dælustýring Ladder
MB_1017	Ræsing á seinni dælu vegna lokusigs	Dælustýring Ladder
MB_1018	"Set-Reset" Fyrir bilun í dælukerfi.	Dælustýring Ladder
MB_1019	Þrýstingur OK.	Dælustýring Ladder
MB_1020	Fyrir borða sem segir til um þrýsting "OK"	Dælustýring Ladder
MB_1021	Hjálparbiti teljara. Dælu 1.	Dælustýring Ladder
MB_1022	Hjálparbiti teljara. Dælu 2.	Dælustýring Ladder
MB_1023	Endursetningarhnappur á gangtíma dæla 1	Dælustýring Ladder
MB_1024	Endursetningarhnappur á gangtíma dæla 2	Dælustýring Ladder
MB_1025	Dæla 1 bilun	Dælustýring Ladder
MB_1026	Dæla 2 bilun	Dælustýring Ladder
MB_1027	Dæla 1 í gangi	Dælustýring Ladder
MB_1028	Dæla 2 í gangi	Dælustýring Ladder
MB_1029	Dælukerfi neyðarútleysing	Dælustýring Ladder
MB_1030	Dæla 1 í gang (output)	Dælustýring Ladder
MB_1031	Dæla 2 í gang (output)	Dælustýring Ladder
MB_1032	Lokusig sameginlegt dælukerfi	Dælustýring Ladder



Biti_NR	Alarms	Hvar
MB_2000	Pause ALL Alarms	Alarms Ladder
MB_2001	Clear ALL pending Alarms and rescan bit	Alarms Ladder
MB_2002	One or more Alarms is Active	Alarms Ladder
MB_2003	One or more Alarms is Active	Alarms Ladder
MB_2004	Laus biti fyrir uppsetningu á aðvörunum	
MB_2005	Laus biti fyrir uppsetningu á aðvörunum	
MB_2006	Laus biti fyrir uppsetningu á aðvörunum	
MB_2007	Laus biti fyrir uppsetningu á aðvörunum	
MB_2008	Laus biti fyrir uppsetningu á aðvörunum	
MB_2009	Laus biti fyrir uppsetningu á aðvörunum	
MB_2010	Laus biti fyrir uppsetningu á aðvörunum	
MB_2011	Laus biti fyrir uppsetningu á aðvörunum	
MB_2012	Laus biti fyrir uppsetningu á aðvörunum	
MB_2013	Laus biti fyrir uppsetningu á aðvörunum	
MB_2014	Laus biti fyrir uppsetningu á aðvörunum	
MB_2015	Laus biti fyrir uppsetningu á aðvörunum	
MB_2016	Laus biti fyrir uppsetningu á aðvörunum	
MB_2017	Markingbiti aðvaranir	Alarms Ladder
MB_2018	Hjálparbiti 1 aðvaranir	Alarms Ladder
MB_2019	Hjálparbiti 2 aðvaranir	Alarms Ladder
MB_2020	Inntaksloka 1 Óeðlilegt lokusig aðvörun.	Alarms Ladder
MB_2021	Inntaksloka 2 Óeðlilegt lokusig aðvörun.	Alarms Ladder
MB_2022	Inntaksloka 3 Óeðlilegt lokusig aðvörun.	Alarms Ladder
MB_2023	Inntaksloka 1 Felling aðvörun.	Alarms Ladder
MB_2024	Inntaksloka 2 Felling aðvörun.	Alarms Ladder
MB_2025	Inntaksloka 3 Felling aðvörun.	Alarms Ladder
MB_2026	Aðvörun botnloka 1	Alarms Ladder
MB_2027	Aðvörun botnloka 2	Alarms Ladder
MB_2028	Aðvörun botnloka 3	Alarms Ladder
MB_2029	Aðvörun árloka 1	Alarms Ladder
MB_2030	Aðvörun árloka 2	Alarms Ladder
MB_2031	Aðvörun árloka 3	Alarms Ladder
MB_2032	Aðvörun bilun dælukerfi	Alarms Ladder
MB_2033	Aðvörun, rennsli +10%	Alarms Ladder
MB_2034	Aðvörun, rennsli -10%	Alarms Ladder



MI-Bitar (Memory Integer)

Biti_NR	Sameiginlegt	Hvar
MI_0	Rennsli um inntakslokur samanlagt	Start-up. HMI
MI_1	Rennsli um Botnlokur samanlagt	Start-up. HMI
MI_2	Rennsli um Árlokur samanlagt	Start-up. HMI
MI_3	Samanlagt rennsli	Start-up. HMI
MI_4	Vatnshæð Írafosslóni	Start-up. HMI
MI_5	Inntakslokur samanlagt rennsli	Start-up. HMI
MI_6	Botnlokur samanlagt rennsli	Start-up. HMI
MI_7	Árlokur samanlagt rennsli	Start-up. HMI
MI_8	Samanlagt rennsli Sogsins	Start-up. HMI
MI_9	Rennsli um árloku 1	Aflestur. Ladder
MI_10	Vél 1 M3	Aflestur. Ladder
MI_11	Vél 2 M3	Aflestur. Ladder
MI_12	Vél 3 M3	Aflestur. Ladder
MI_13	Meðalrennsli síðasta 3 klst	Aflestur. Ladder
MI_14	Prýstingur á lögn frá dælukerfi	Aflestur. Ladder
MI_15	Opnun á árloku 1 %	Aflestur. Ladder
MI_16	Gangtímateljari dæl	Aflestur. Ladder
MI_17	Tímateljari rifopnun	Aflestur. Ladder
MI_18	Biti fyrir tímateljara á rifopnun	Aflestur. Ladder
MI_19	Mælir á brýstilögn dælukerfis	Aflestur. Ladder
MI_20	Útihið írafosslóni. (input)	Aflestur. Ladder
MI_21	MW mæling vél 1	Aflestur. Ladder
MI_22	MW mæling vél 2	Aflestur. Ladder
MI_23	MW mæling vél 3	Aflestur. Ladder
MI_24		
MI_25		
MI_26		
MI_27		
MI_28		
MI_29		
MI_30	Rennslisbiti fyrir lei 76	Aflestur. Ladder
MI_31	Rennsli +10%	Aflestur. Ladder
MI_32	Rennsli -10%	Aflestur. Ladder
MI_33		
MI_34	Rennsli síðast 1 klst.	Aflestur. Ladder
MI_35	Rennsli síðast 2 klst.	Aflestur. Ladder
MI_36	Samanlagt rennsli fyrir meðaltal.	Aflestur. Ladder



Biti_NR	Botnloka 2	Hvar
MI_200	Prósentuopnun Botnloka 2	Botnlokur HMI
MI_201	Rúmmetraopnun Botnloka 2	Botnlokur HMI
MI_202	Staða loku (innput)	Botnloka 2 ladder
MI_203		
MI_204		
MI_205		
MI_206		
MI_207		
MI_208		
MI_209	Prósentuopnun 10 sek fresti.	Botnloka 2 ladder
MI_210	Talningarbiti sek.	Botnloka 2 ladder

Biti_NR	Botnloka 3	Hvar
MI_300	Prósentuopnun Botnloka 3	Botnlokur HMI
MI_301	Rúmmetraopnun Botnloka 3	Botnlokur HMI
MI_302	Staða loku (innput)	Botnloka 3 ladder
MI_303		
MI_304		
MI_305		
MI_306		
MI_307		
MI_308		
MI_309	Prósentuopnun 10 sek fresti.	Botnloka 3 ladder
MI_310	Talningarbiti sek.	Botnloka 3 ladder



Biti _NR	Árloka 1	Hvar
MI_400	Prósentuopnun Árloka 1	Árlokur HMI
MI_401	Rúmmetraopnun Árloka 1	Árlokur HMI
MI_402	Staða loku (innput)	Árloka 1 ladder
MI_403		
MI_404		
MI_405		
MI_406		
MI_407		
MI_408		
MI_409	Prósentuopnun 10 sek fresti.	Árloka 1 ladder
MI_410	Talningarbiti sek.	Árloka 1 ladder

Biti _NR	Árloka 2	Hvar
MI_500	Prósentuopnun Árloka 2	Árlokur HMI
MI_501	Rúmmetraopnun Árloka 2	Árlokur HMI
MI_502	Staða loku (innput)	Árloka 2 ladder
MI_503		
MI_504		
MI_505		
MI_506		
MI_507		
MI_508		
MI_509	Prósentuopnun 10 sek fresti.	Árloka 2 ladder
MI_510	Talningarbiti sek.	Árloka 2 ladder

Biti _NR	Árloka 3	Hvar
MI_600	Prósentuopnun Árloka 3	Árlokur HMI
MI_601	Rúmmetraopnun Árloka 3	Árlokur HMI
MI_602	Staða loku (innput)	Árloka 3 ladder
MI_603		
MI_604		
MI_605		
MI_606		
MI_607		
MI_608		
MI_609	Prósentuopnun 10 sek fresti.	Árloka 3 ladder
MI_610	Talningarbiti sek.	Árloka 3 ladder



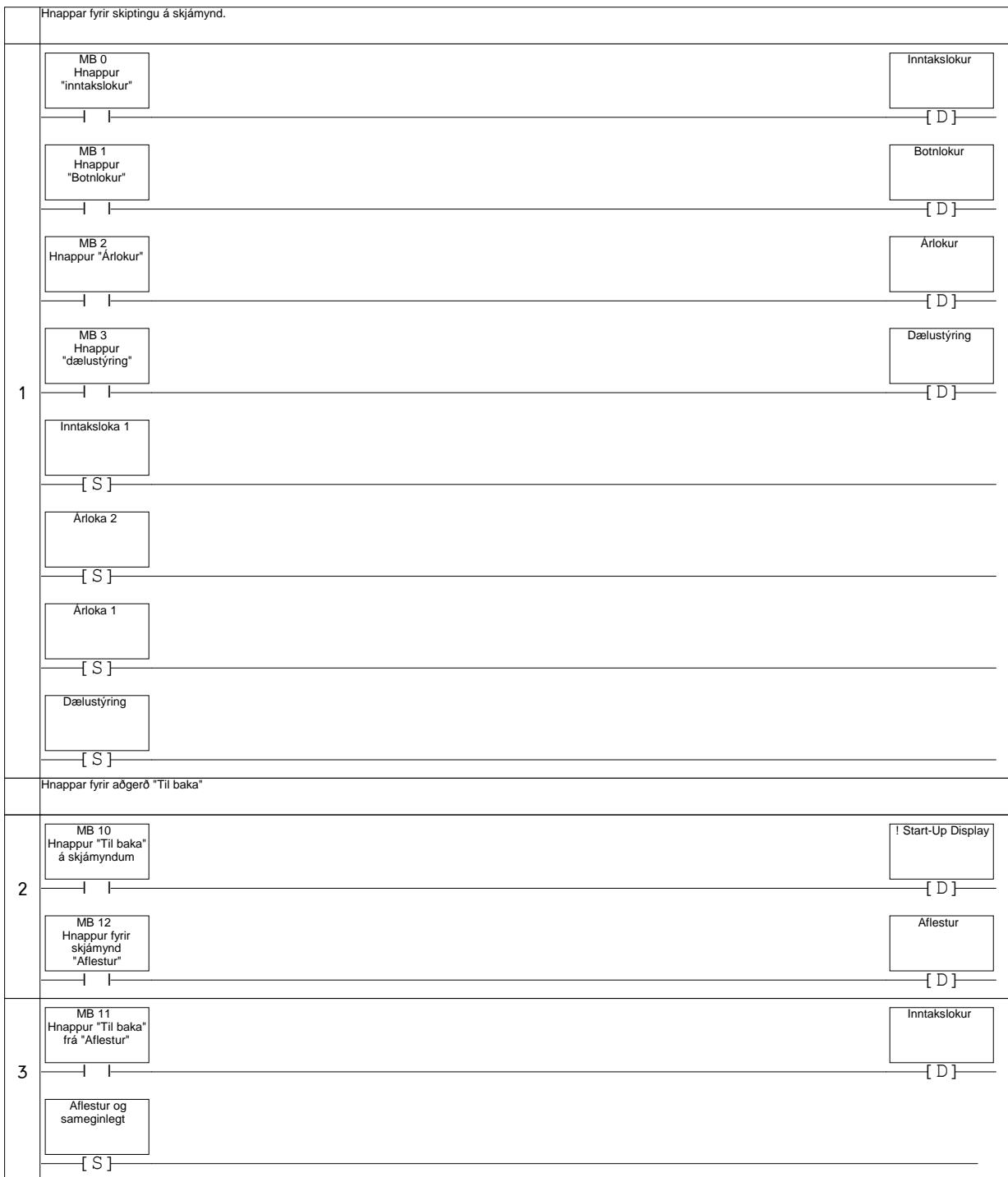
Biti _NR	Inntaksloka 1	Hvar
MI_700	Opnun %	Inntakslokur HMI
MI_701	MW	Inntakslokur HMI
MI_702	Skóflustaða	Inntakslokur HMI
MI_703	M3	Inntakslokur HMI
MI_704	Þrýstingur < 2kg/cm2	Inntakslokur ladder

Biti _NR	Inntaksloka 2	Hvar
MI_800	Opnun %	Inntakslokur HMI
MI_801	MW	Inntakslokur HMI
MI_802	Skóflustaða	Inntakslokur HMI
MI_803	M3	Inntakslokur HMI
MI_804	Þrýstingur < 2kg/cm2	Inntakslokur ladder

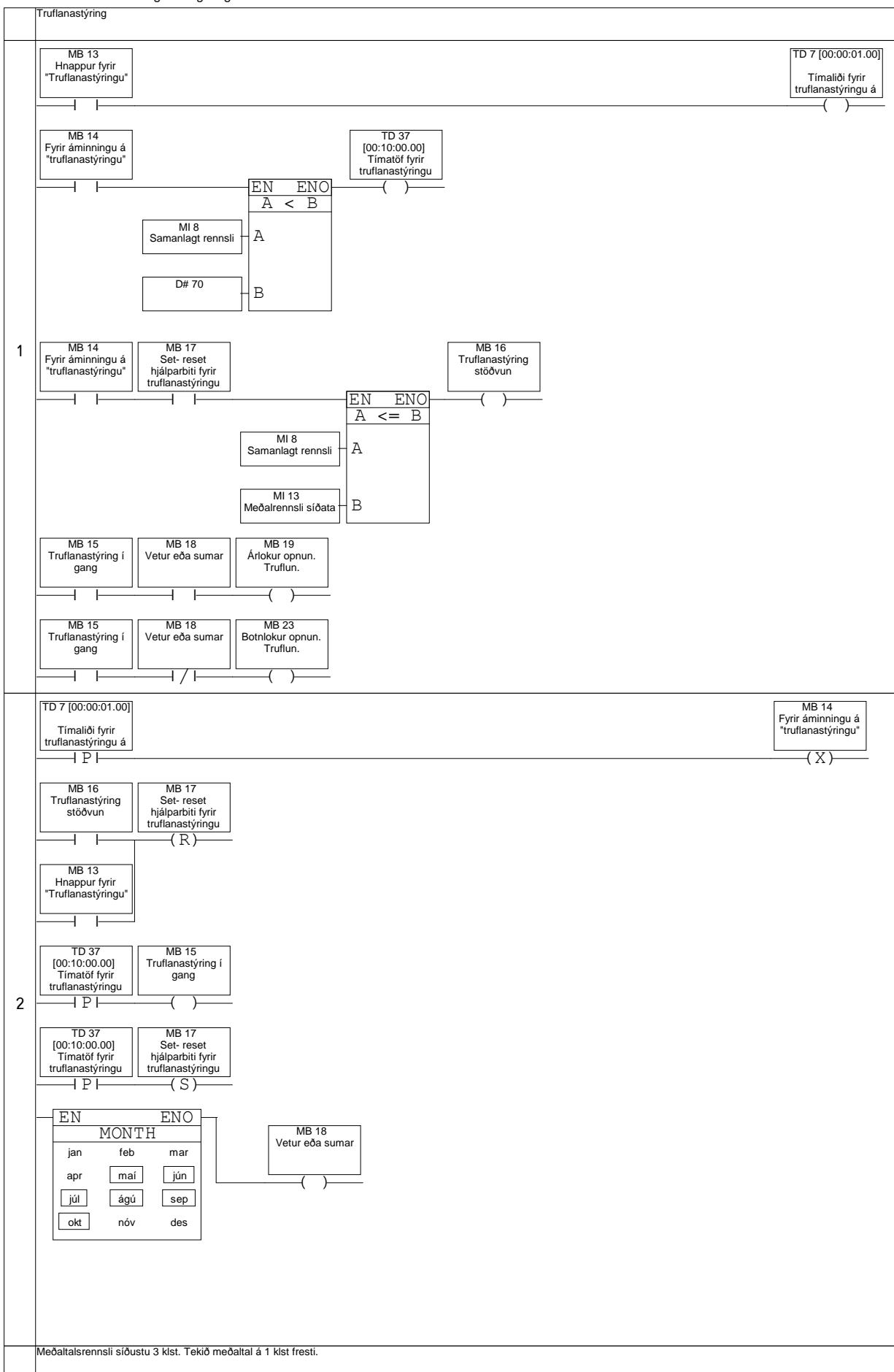
Biti _NR	Inntaksloka 3	Hvar
MI_900	Opnun %	Inntakslokur HMI
MI_901	MW	Inntakslokur HMI
MI_902	Skóflustaða	Inntakslokur HMI
MI_903	M3	Inntakslokur HMI
MI_904	Þrýstingur < 2kg/cm2	Inntakslokur ladder

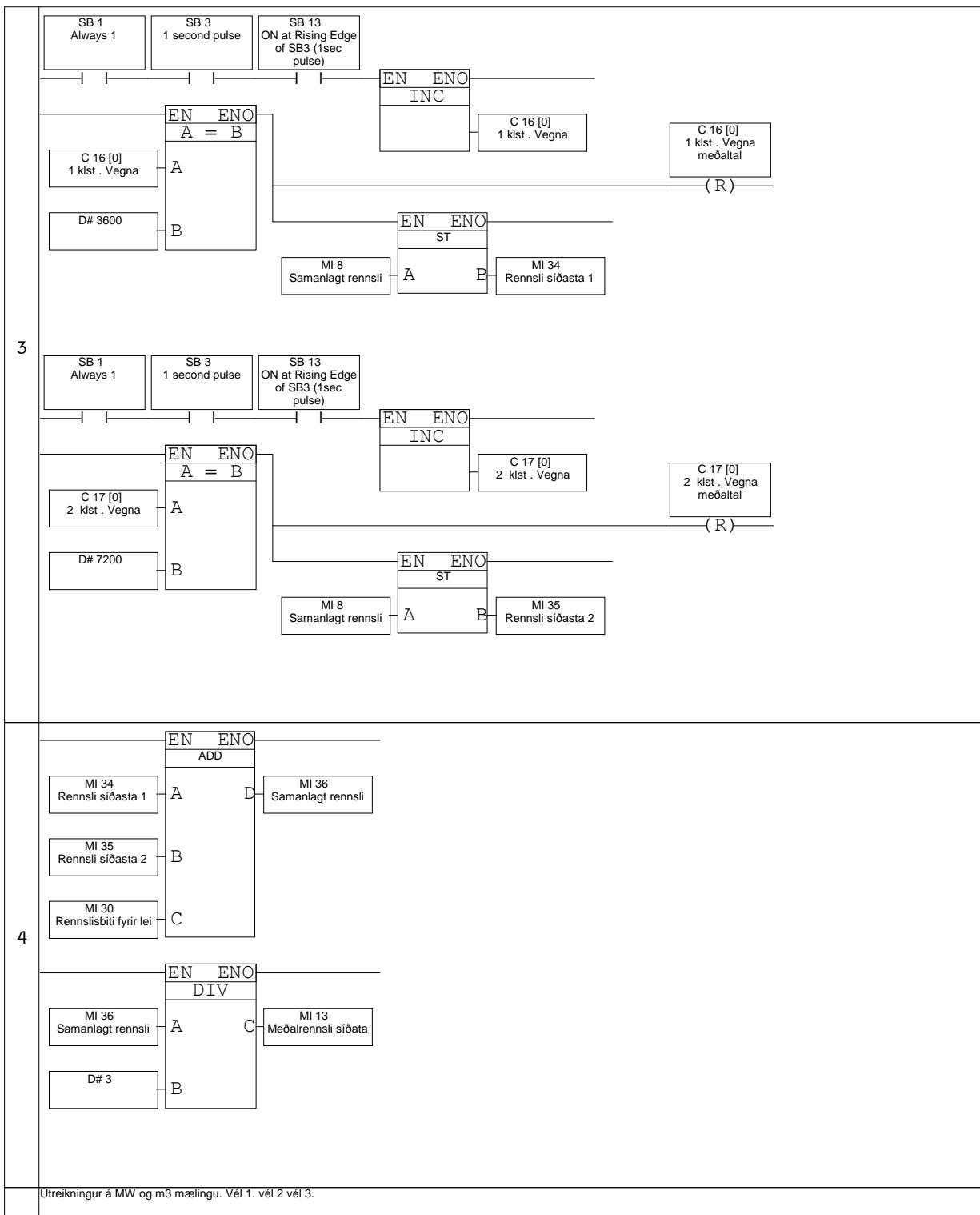
Biti _NR	Dælustýring	Hvar
MI_1000	Þrýstingur	Dælukerfi HMI
MI_1001	Hæð á forðatank	Dælukerfi HMI

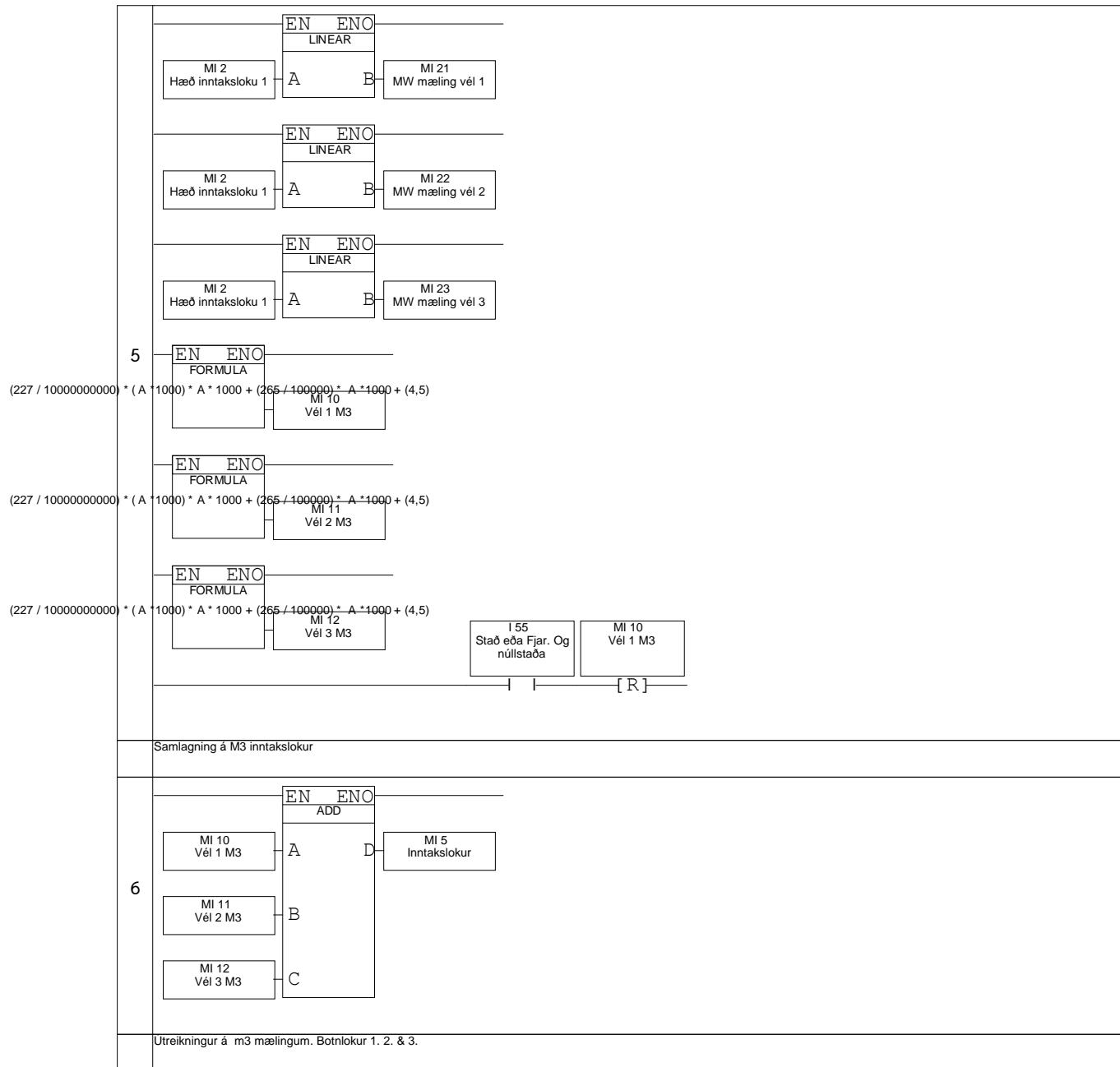
Biti _NR	Alarms	Hvar
MI_2000	Total Number of all Active Alarms	Alarms Ladder
MI_2001	Total Number of Alarms pending for Reset	Alarms Ladder
MI_2002	Total Number of all Active Alarms	Alarms Ladder
MI_2003	Total Number of Alarms pending for View	Alarms Ladder
MI_2004	Total Number of Alarms pending for Reset	Alarms Ladder



	<table border="1"><tr><td>Inntaksloka 2</td></tr><tr><td>[S]</td></tr><tr><td>Inntaksloka 3</td></tr><tr><td>[S]</td></tr><tr><td>Arloka 3</td></tr><tr><td>[S]</td></tr></table>	Inntaksloka 2	[S]	Inntaksloka 3	[S]	Arloka 3	[S]		
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4	<table border="1"><tr><td>Botnloka 1</td></tr><tr><td>[S]</td></tr><tr><td>Botnloka 2</td></tr><tr><td>[S]</td></tr><tr><td>Botnloka 3</td></tr><tr><td>[S]</td></tr><tr><td>Alarms</td></tr><tr><td>[S]</td></tr></table>	Botnloka 1	[S]	Botnloka 2	[S]	Botnloka 3	[S]	Alarms	[S]
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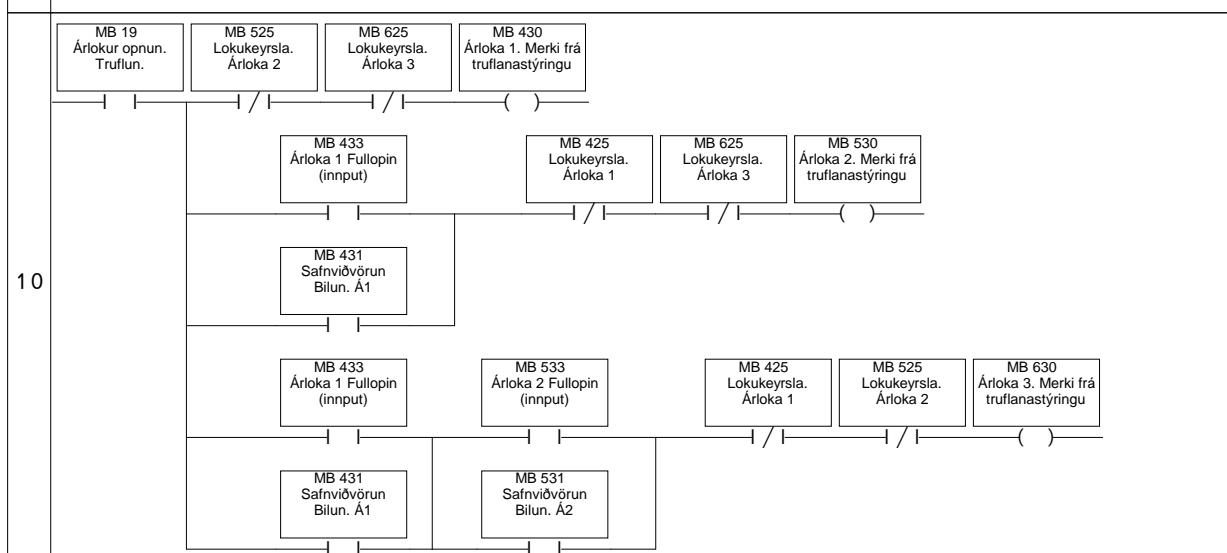




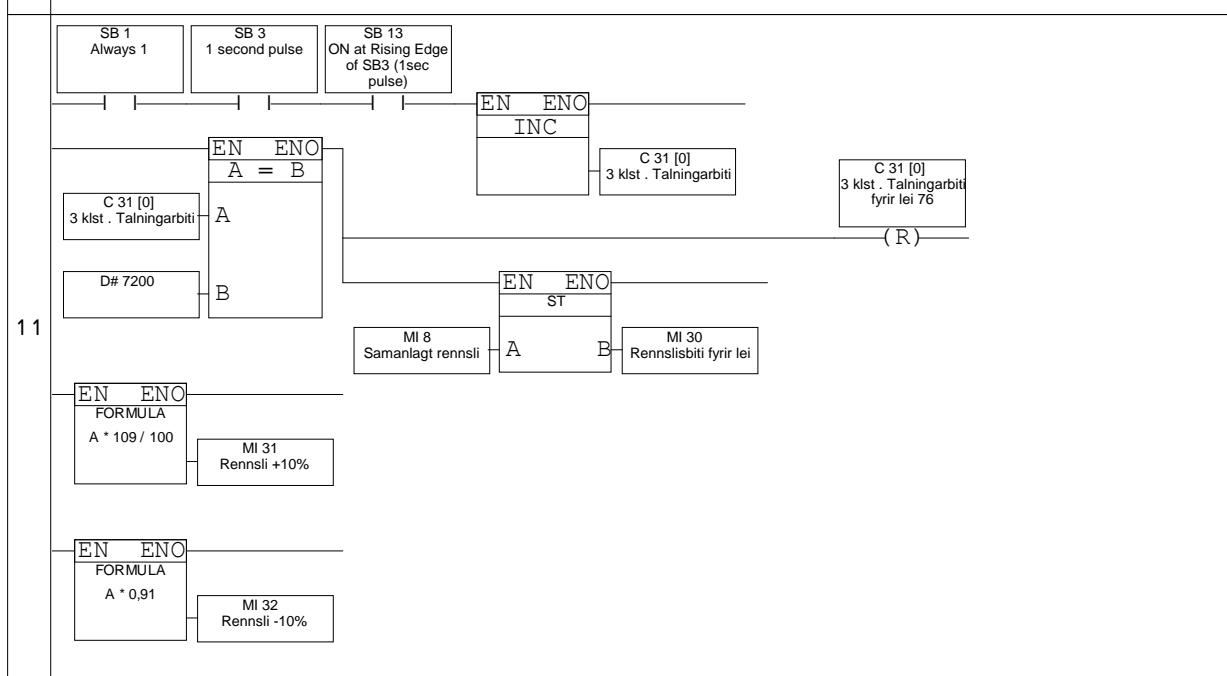
7	
	Utreikningar á m ³ mælingum. Árlokur 1, 2. & 3.
8	
	Samanlagt rennsli sogsins



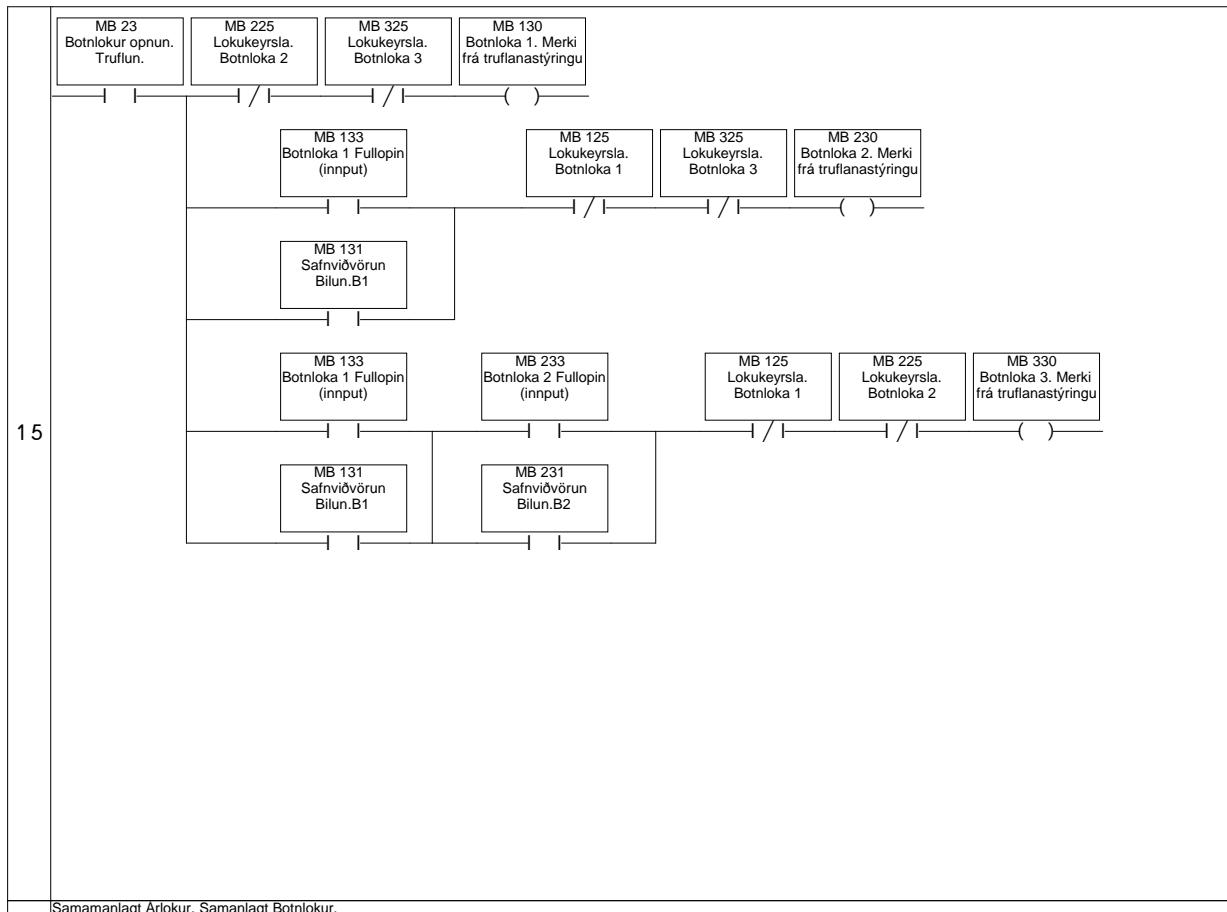
Truflanastýring val á lokum. Árlokur.



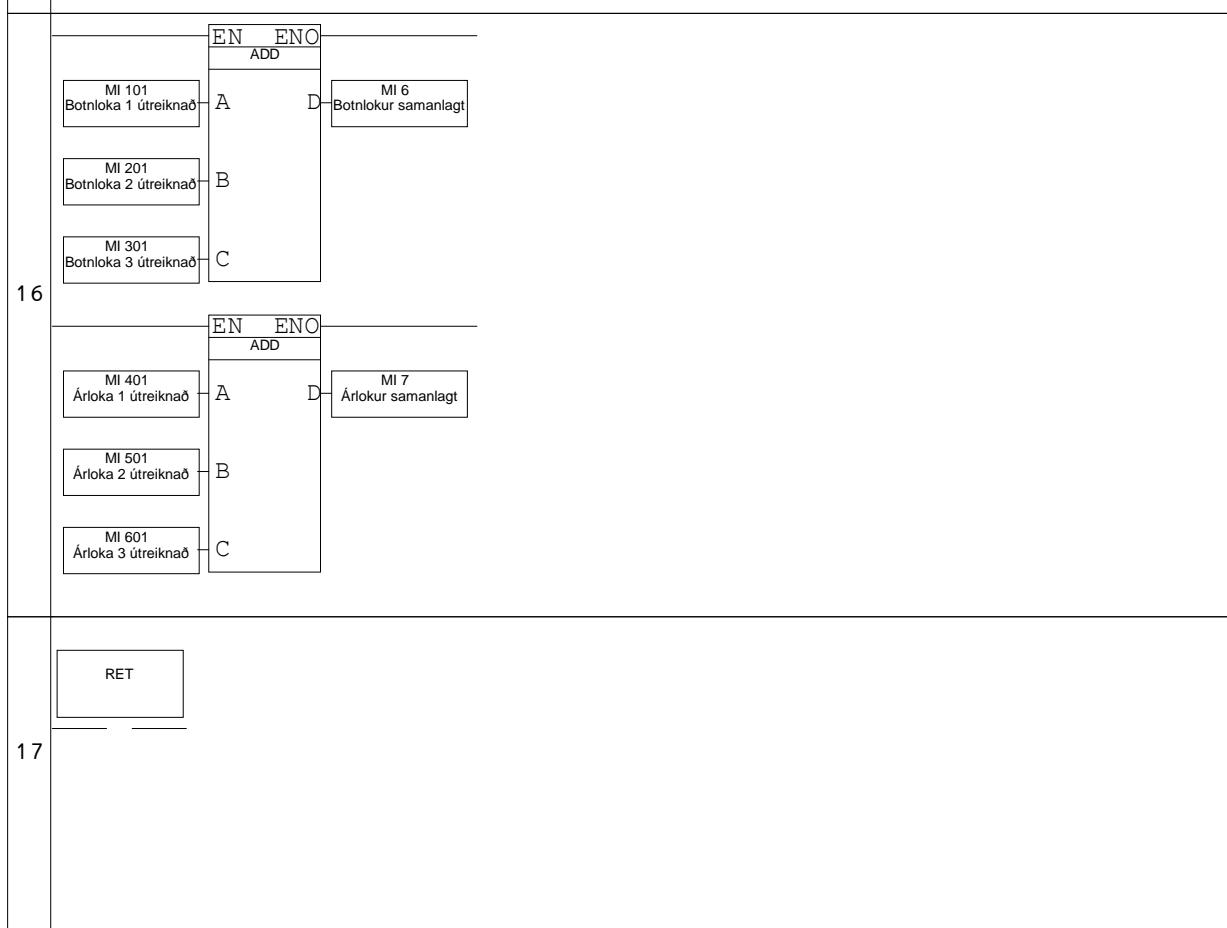
Fyrir viðvörun ef rennsli fer yfir eða undir 10% á 3 klst.



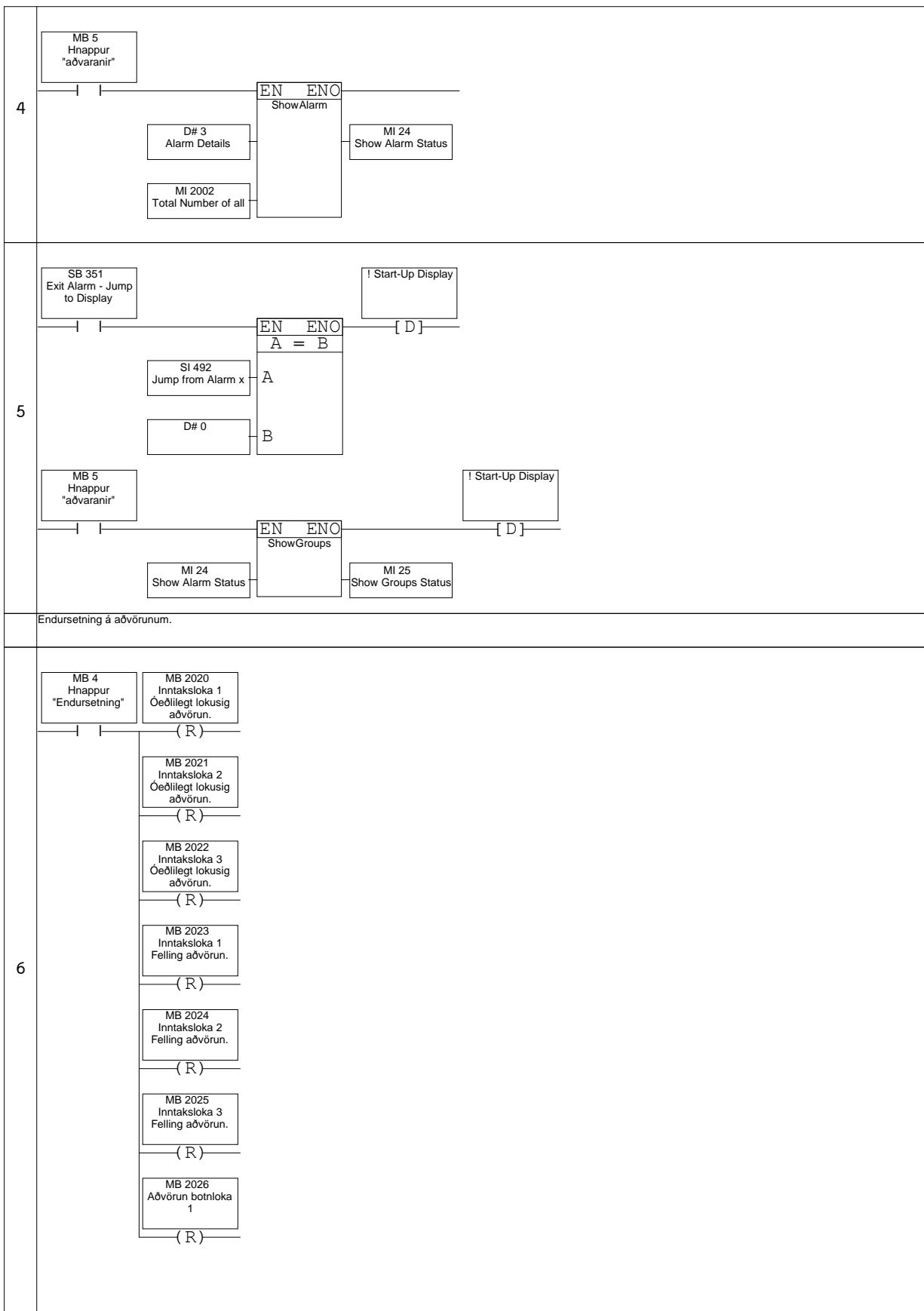
12	
13	
14	
Trúflanastýring. Val á lokum. Botnlokur.	



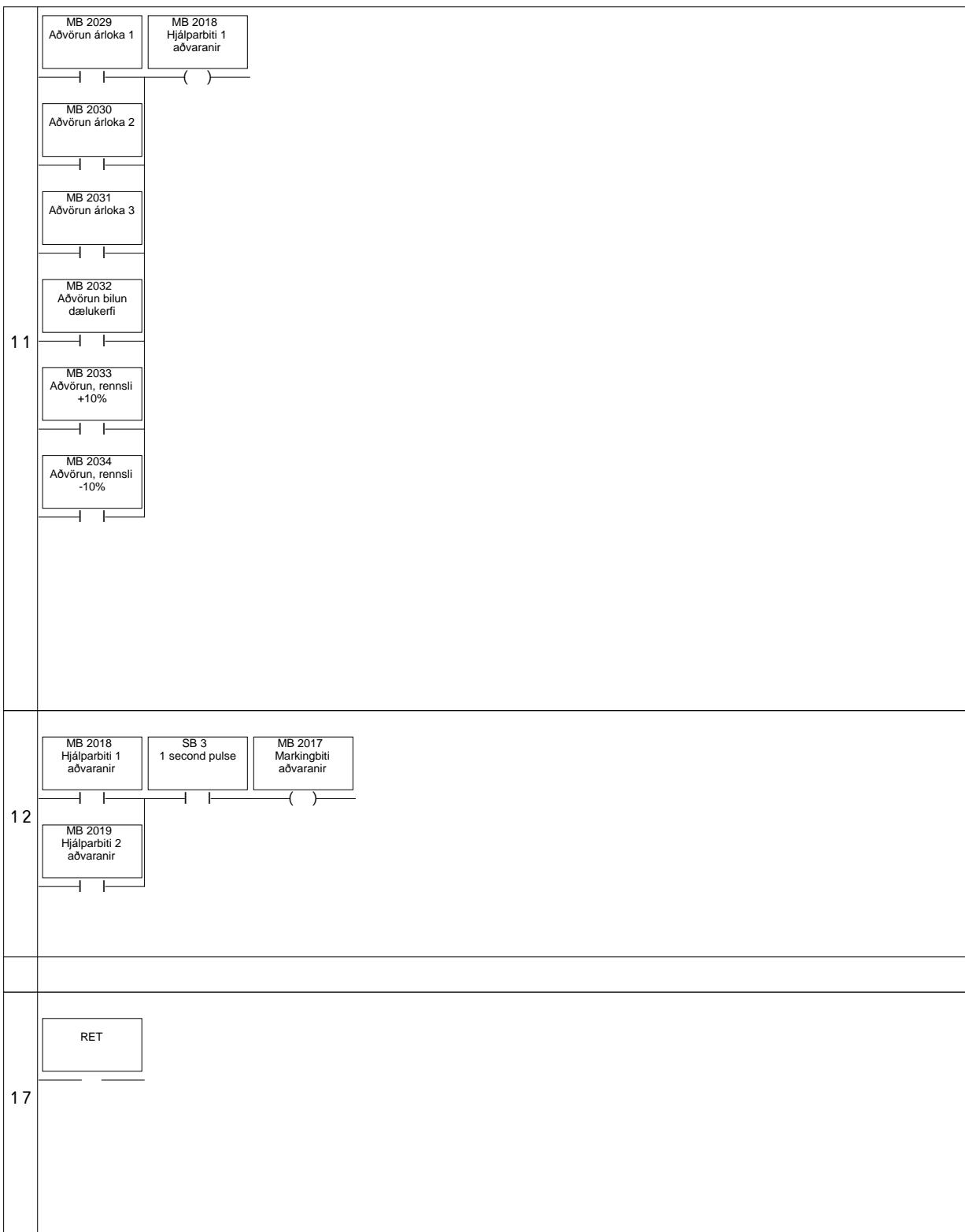
Samanlagt Árlokur. Samanlagt Botnlokur.

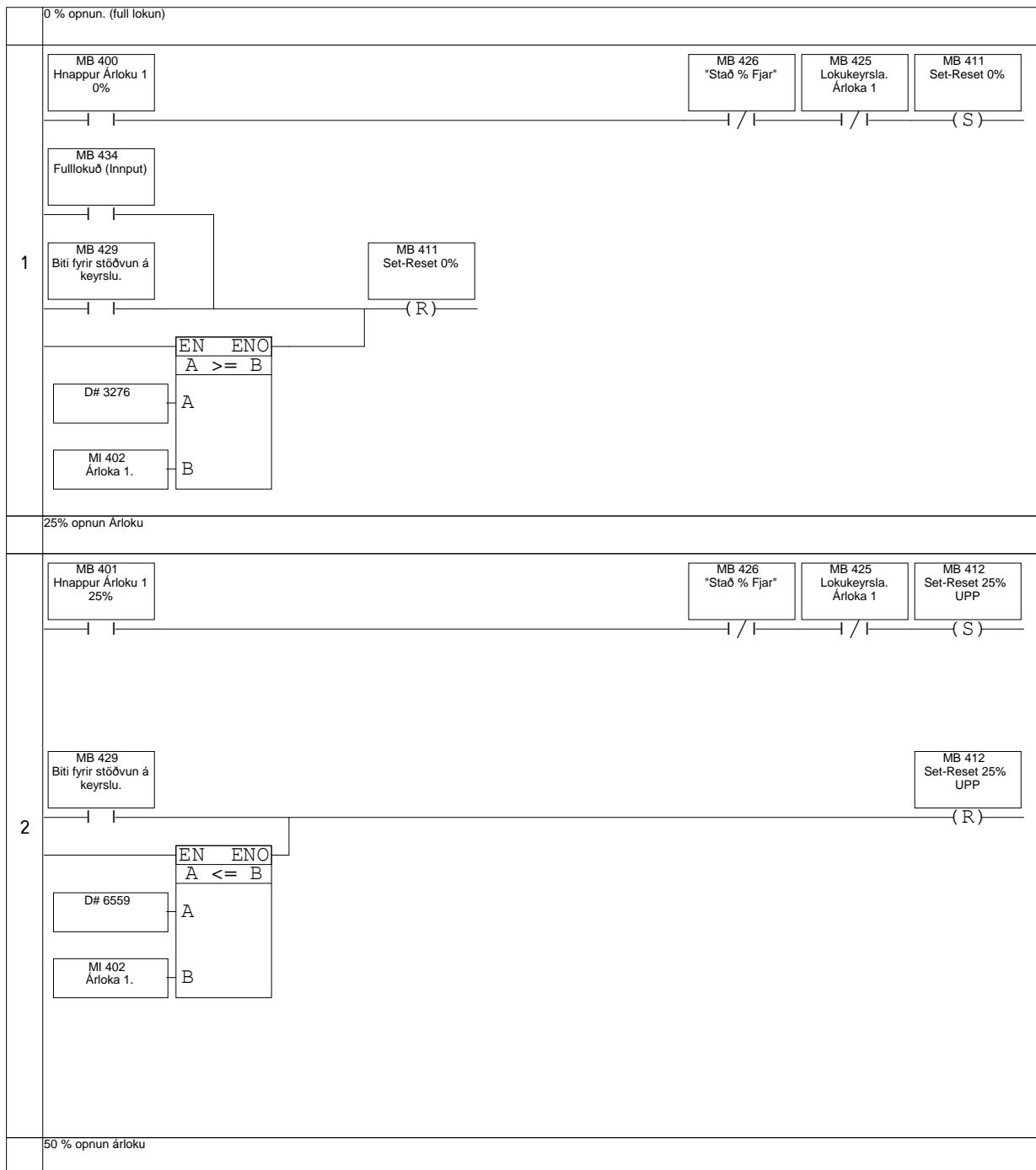


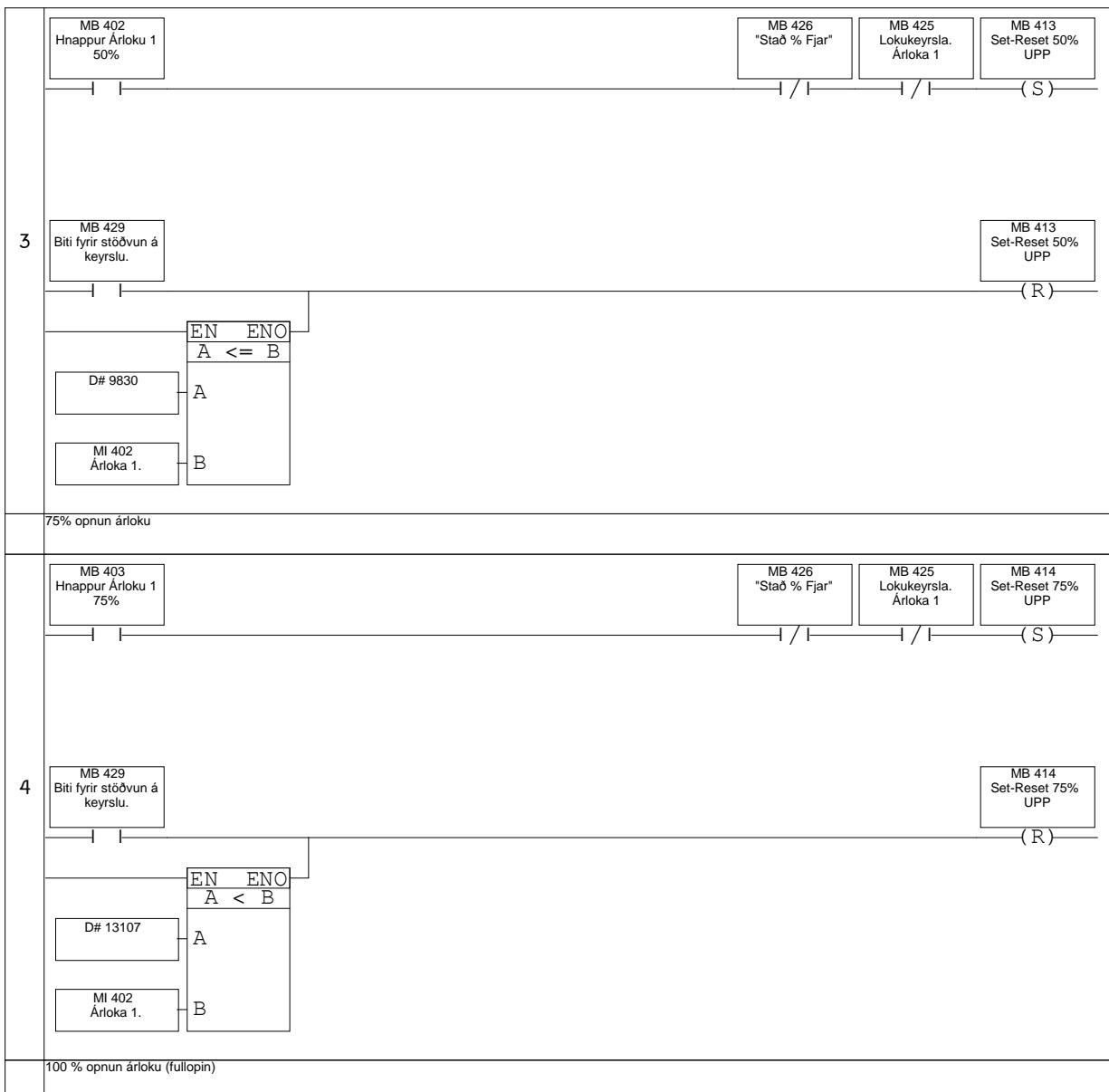
	Aðvaranir. Samsett úr styringu.	
1	MB 721 Set-Reset biti fyrir "Öeðililegt lokusig"	MB 2020 Inntaksloka 1 Öeðililegt lokusig aðvörun.
	(S)	
	MB 821 Set-Reset biti fyrir "Öeðililegt lokusig"	MB 2021 Inntaksloka 2 Öeðililegt lokusig aðvörun.
	(S)	
	MB 921 Set-Reset biti fyrir "Öeðililegt lokusig"	MB 2022 Inntaksloka 3 Öeðililegt lokusig aðvörun.
	(S)	
	MB 722 Set-Reset biti fyrir "Lokusig-Tripp-Felli ng"	MB 2023 Inntaksloka 1 Felling aðvörun.
	(S)	
2	MB 822 Set-Reset biti fyrir "Lokusig-Tripp-Felli ng"	MB 2024 Inntaksloka 2 Felling aðvörun.
	(S)	
	MB 922 Set-Reset biti fyrir "Lokusig-Tripp-Felli ng"	MB 2025 Inntaksloka 3 Felling aðvörun.
	(S)	
	MB 131 Safnviðvörun Bilun.B1	MB 2026 Aðvörun botnloka 1
	(S)	
	MB 231 Safnviðvörun Bilun.B2	MB 2027 Aðvörun botnloka 2
	(S)	
3	MB 331 Safnviðvörun Bilun.B3	MB 2028 Aðvörun botnloka 3
	(S)	
	MB 431 Safnviðvörun Bilun. Á1	MB 2029 Aðvörun árloka 1
	(S)	
	MB 531 Safnviðvörun Bilun. Á2	MB 2030 Aðvörun árloka 2
	(S)	
	MB 631 Safnviðvörun Bilun. Á3	MB 2031 Aðvörun árloka 3
	(S)	
	MB 1018 "Set-Reset" Fyrir bilun í dælukerfi.	MB 2032 Aðvörun bilun dælukerfi
	(S)	
	TD 20 [00:00:03.00] Tímalíði, rennsli +10%	MB 2033 Aðvörun, rennsli +10%
	(S)	
	TD 21 [00:00:03.00] Tímalíði, rennsli -10%	MB 2034 Aðvörun, rennsli -10%
	(S)	

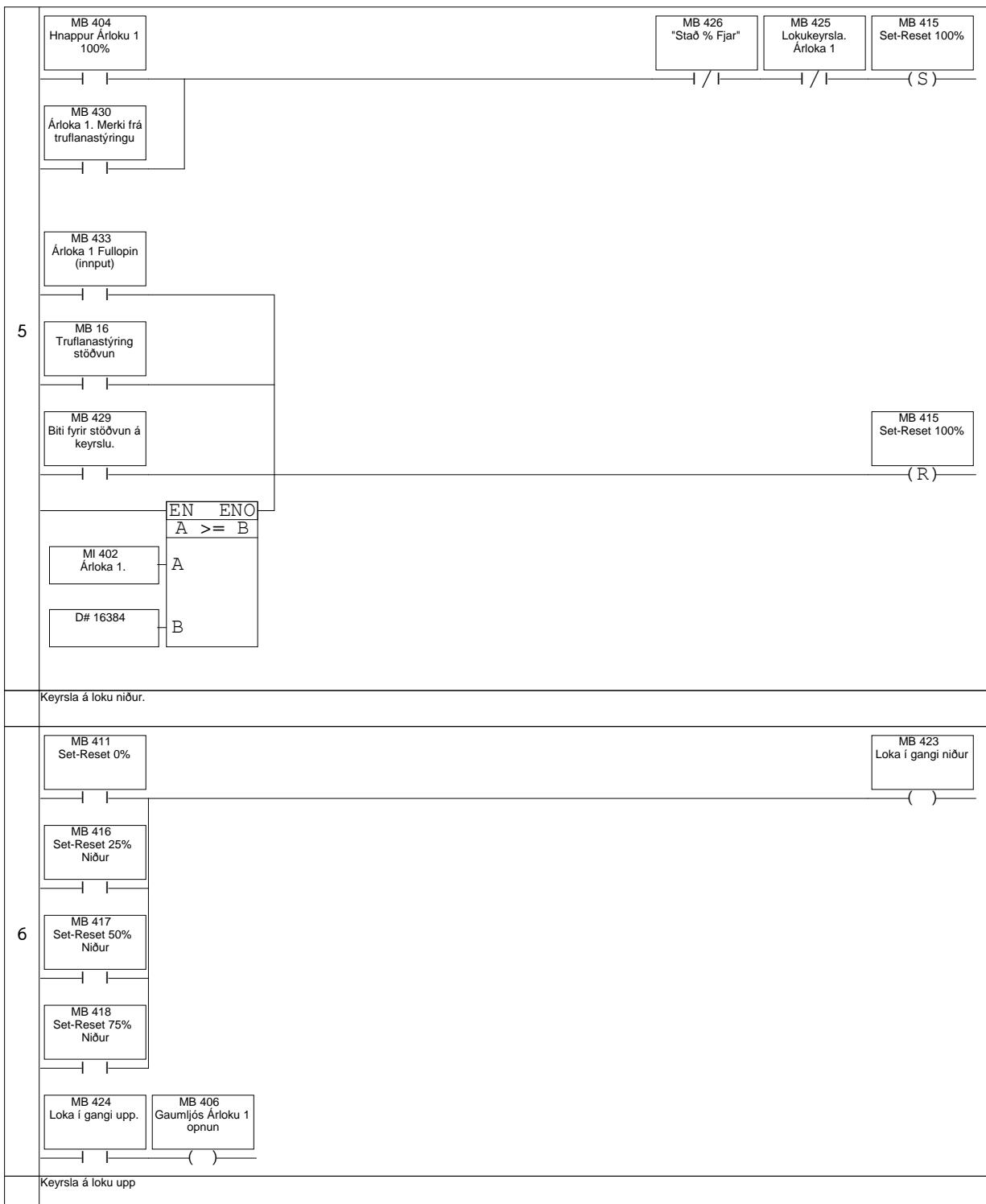


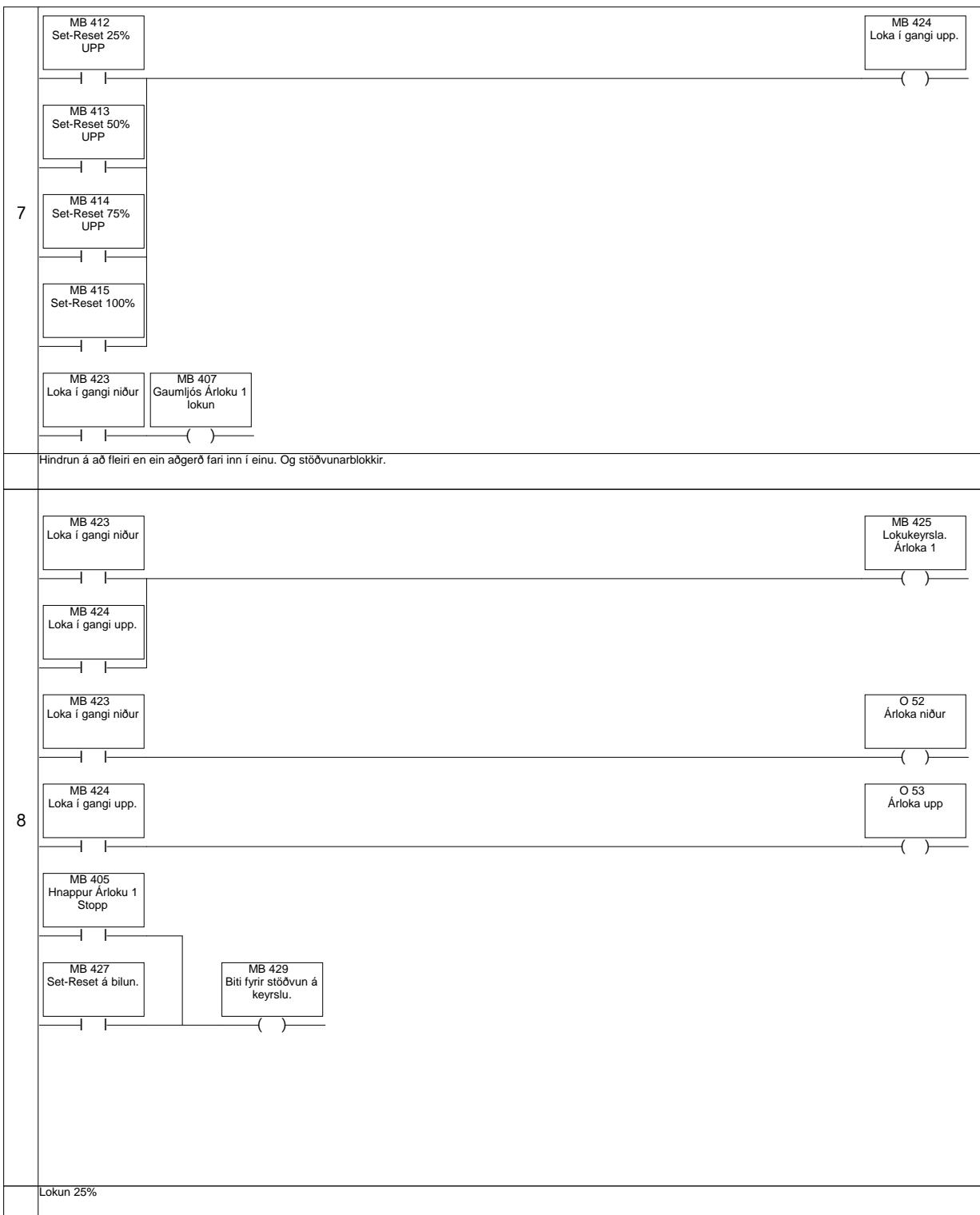
	<p>MB 4 Hnappur "Endursetning"</p> <p>(R)</p> <p>MB 2027 Aðvörun botnloka 2</p>
	<p>MB 2028 Aðvörun botnloka 3</p> <p>(R)</p>
	<p>MB 2029 Aðvörun árloka 1</p> <p>(R)</p>
7	<p>MB 2030 Aðvörun árloka 2</p> <p>(R)</p>
	<p>MB 2031 Aðvörun árloka 3</p> <p>(R)</p>
	<p>MB 2032 Aðvörun bilun daelukerfi</p> <p>(R)</p>
	<p>MB 2033 Aðvörun, rennsli +10%</p> <p>(R)</p>
	<p>MB 2034 Aðvörun, rennsli -10%</p> <p>(R)</p>
Fyrir skjámynd	
	<p>MB 2020 Intaksløka 1 Öeðlilegt lokusig aðvörun.</p> <p>()</p> <p>MB 2019 Hjálparþíti 2 aðvaranir</p>
	<p>MB 2021 Intaksløka 2 Öeðlilegt lokusig aðvörun.</p> <p>()</p>
10	<p>MB 2023 Intaksløka 1 Felling aðvörun.</p> <p>()</p>
	<p>MB 2024 Intaksløka 2 Felling aðvörun.</p> <p>()</p>
	<p>MB 2025 Intaksløka 3 Felling aðvörun.</p> <p>()</p>
	<p>MB 2026 Aðvörun botnloka 1</p> <p>()</p>
	<p>MB 2027 Aðvörun botnloka 2</p> <p>()</p>
	<p>MB 2028 Aðvörun botnloka 3</p> <p>()</p>

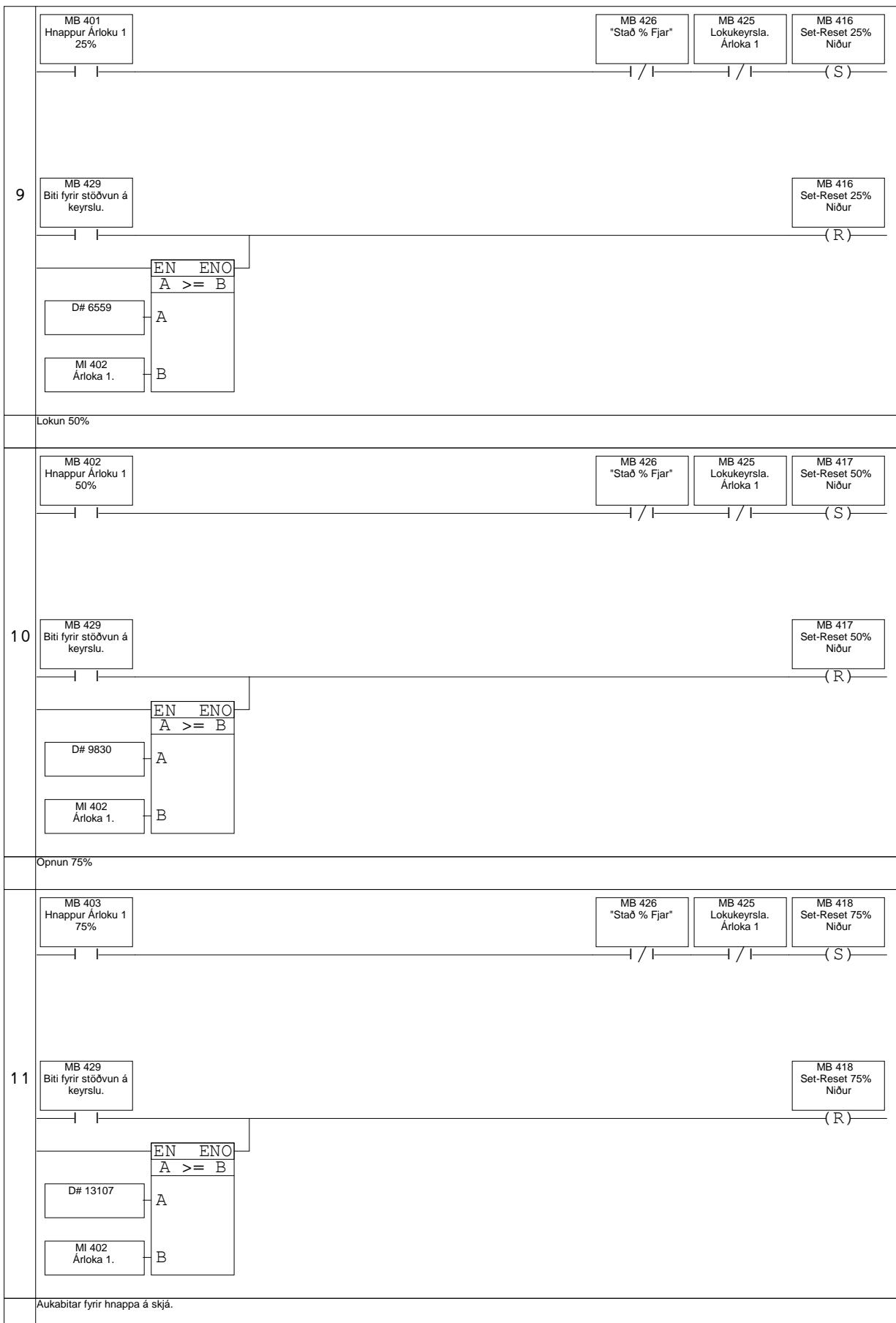


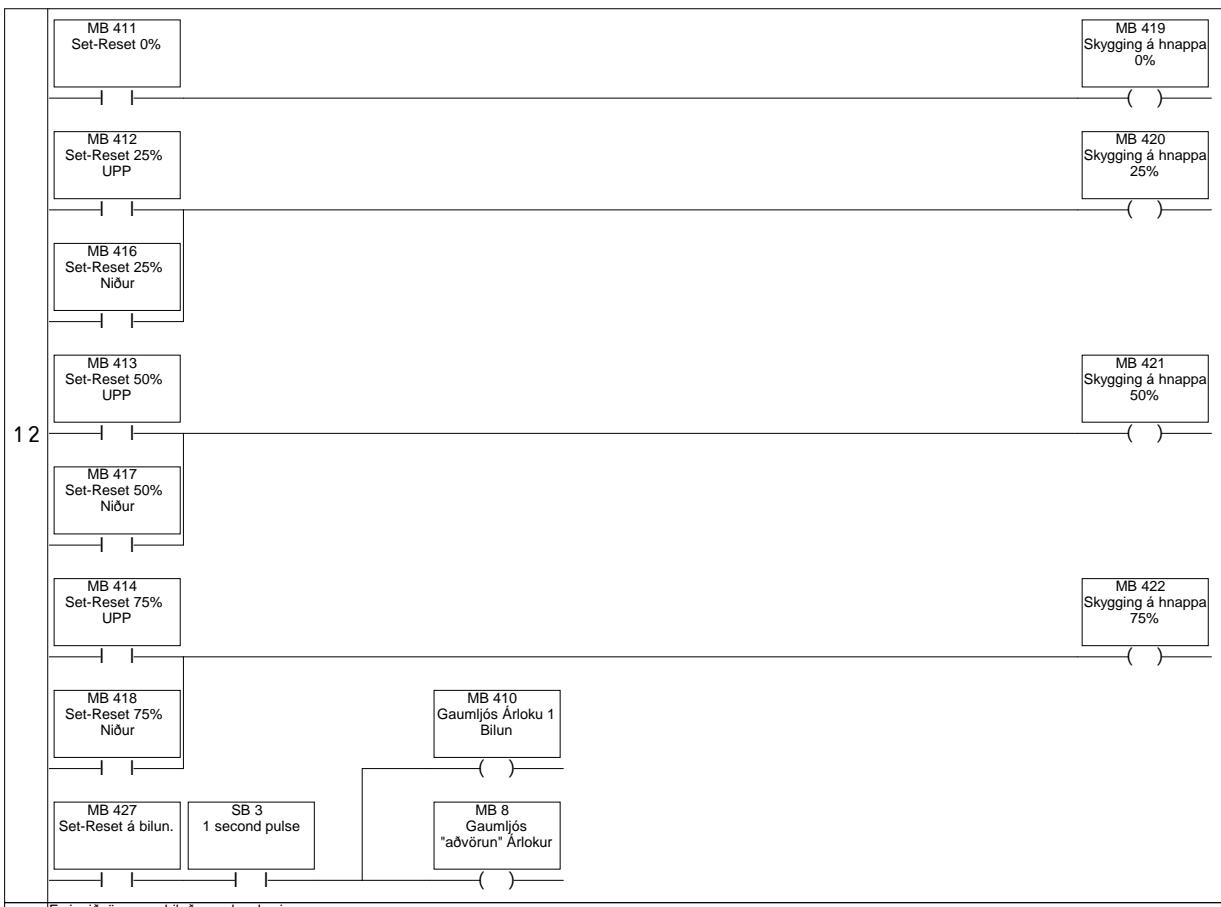




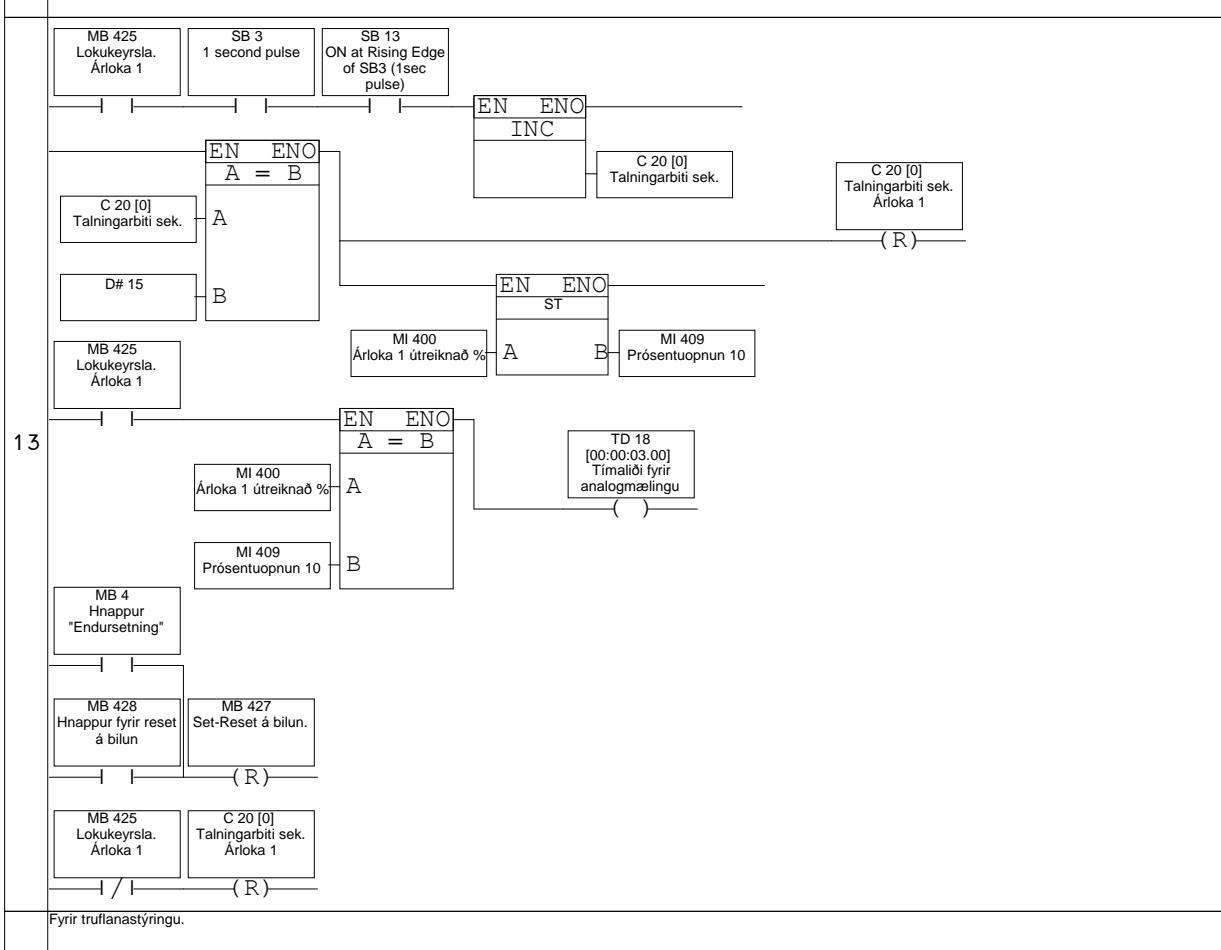






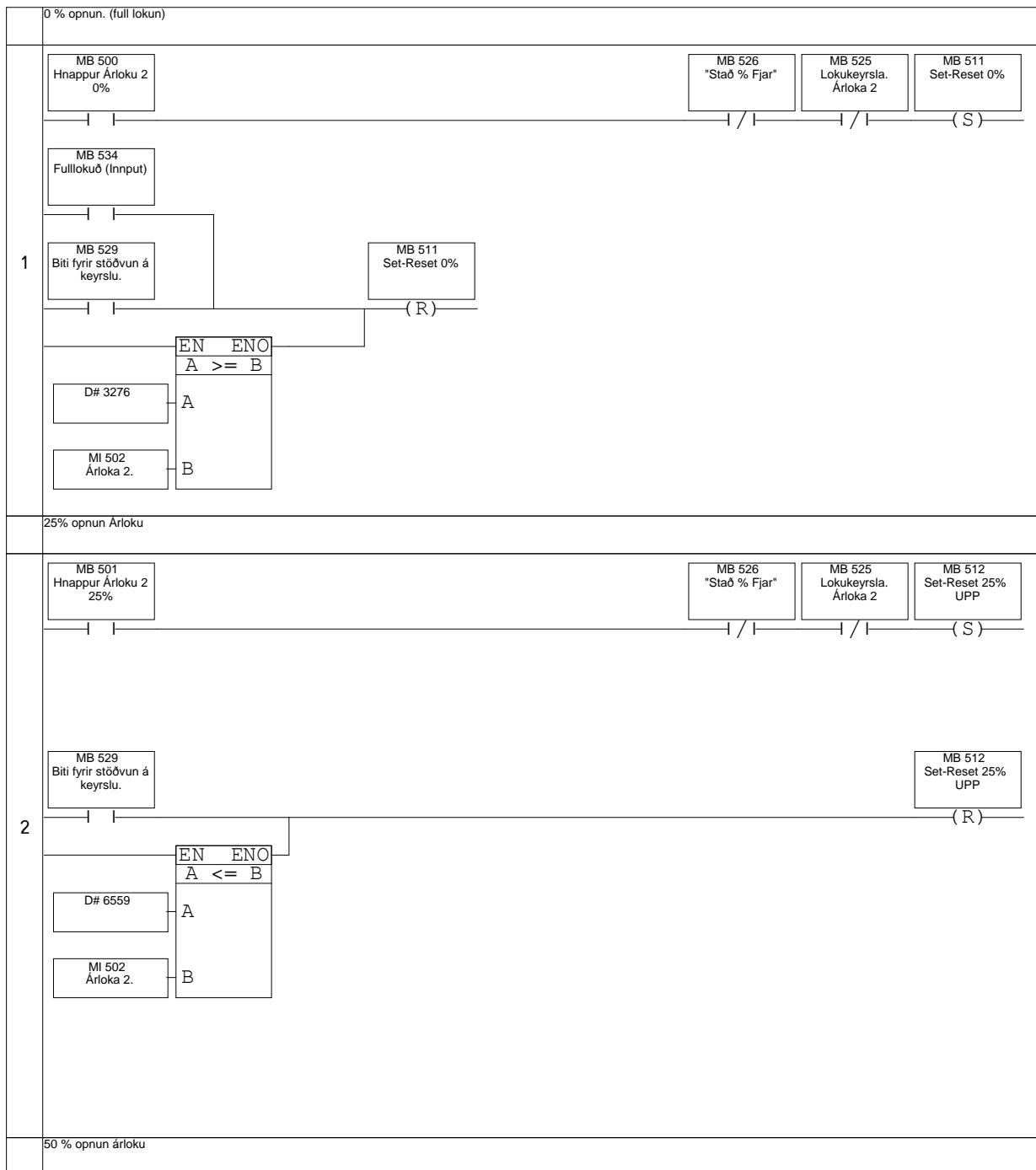


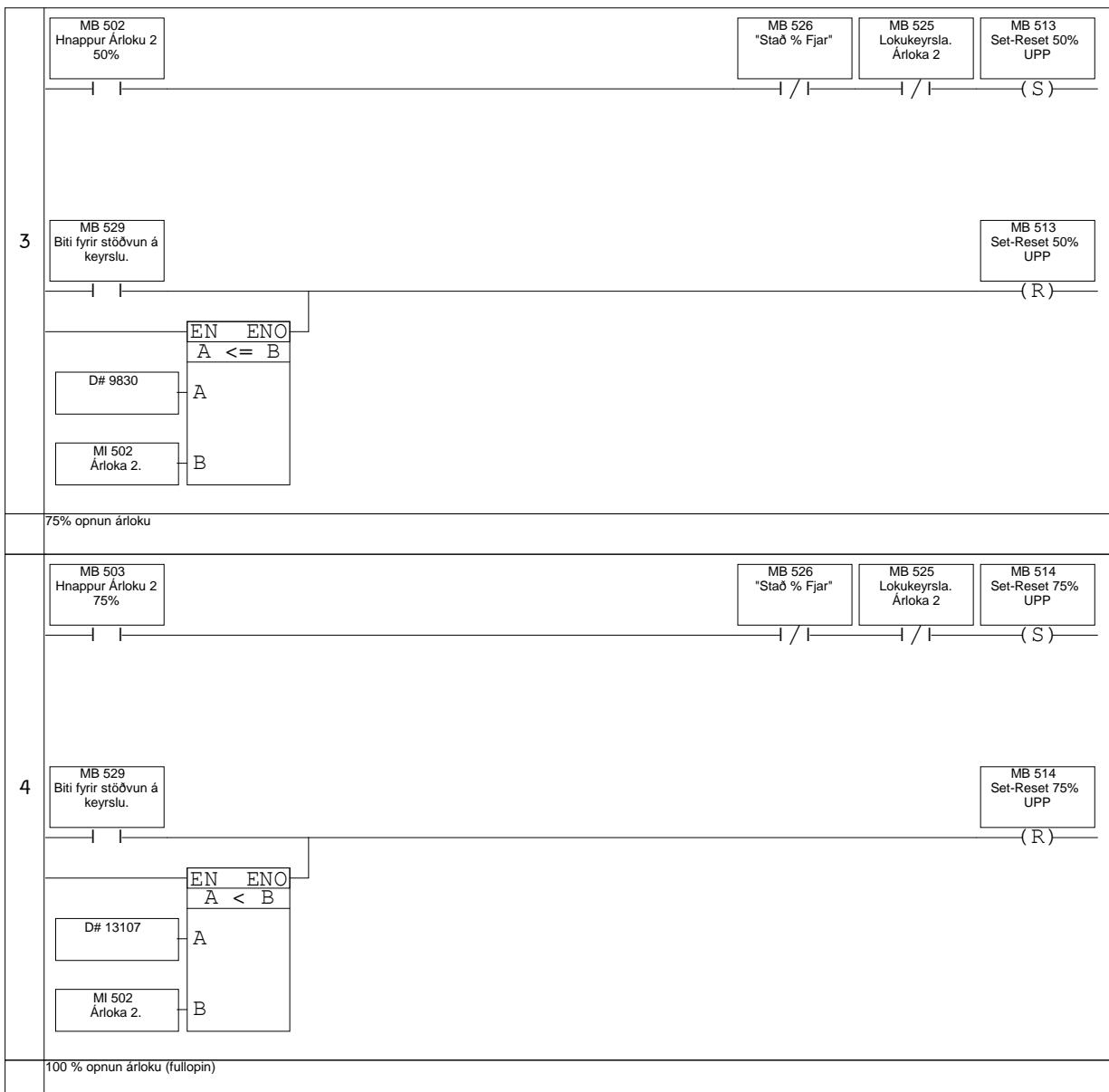
Fyrir viðvörun um bilaða analogskynjun.

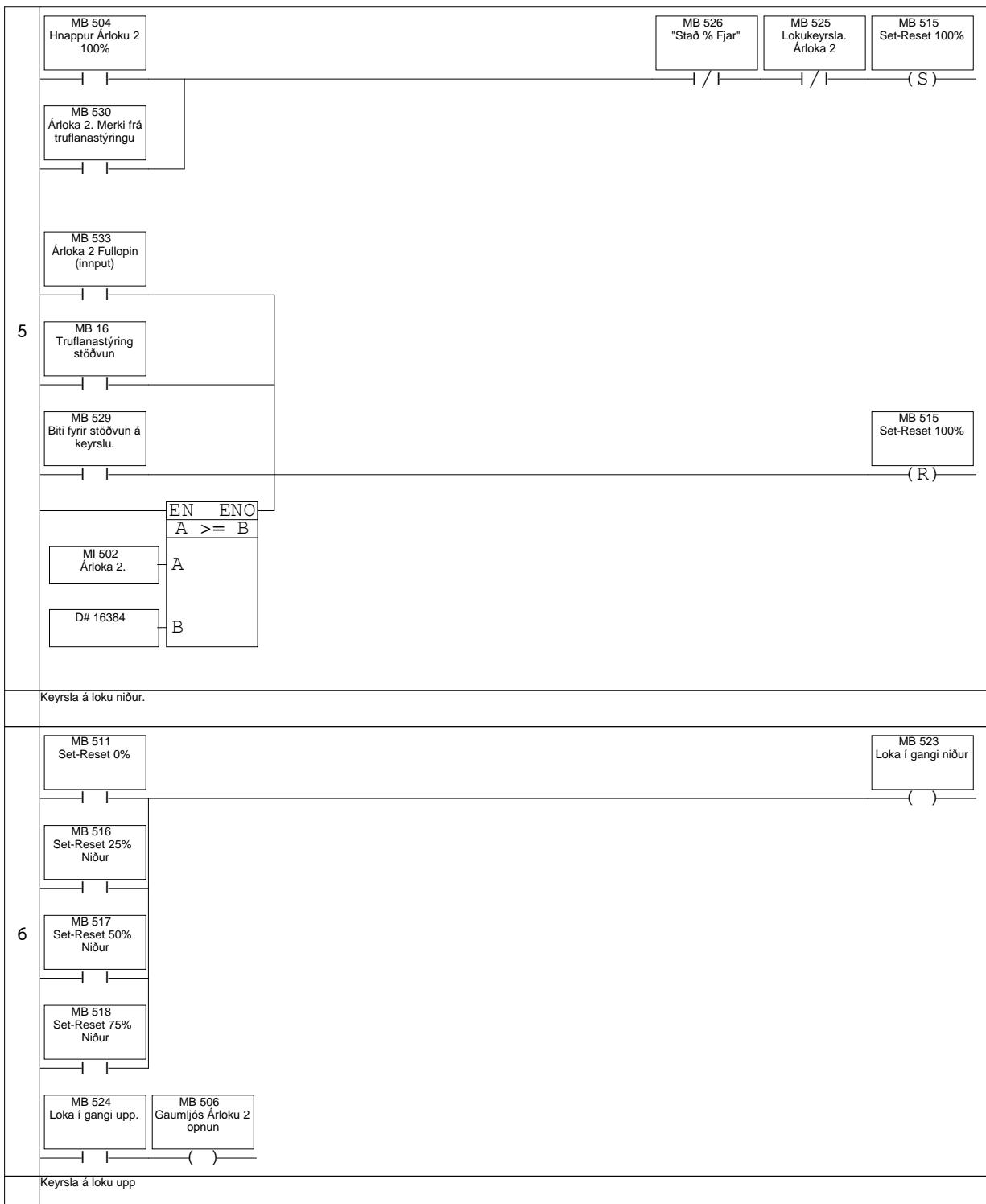


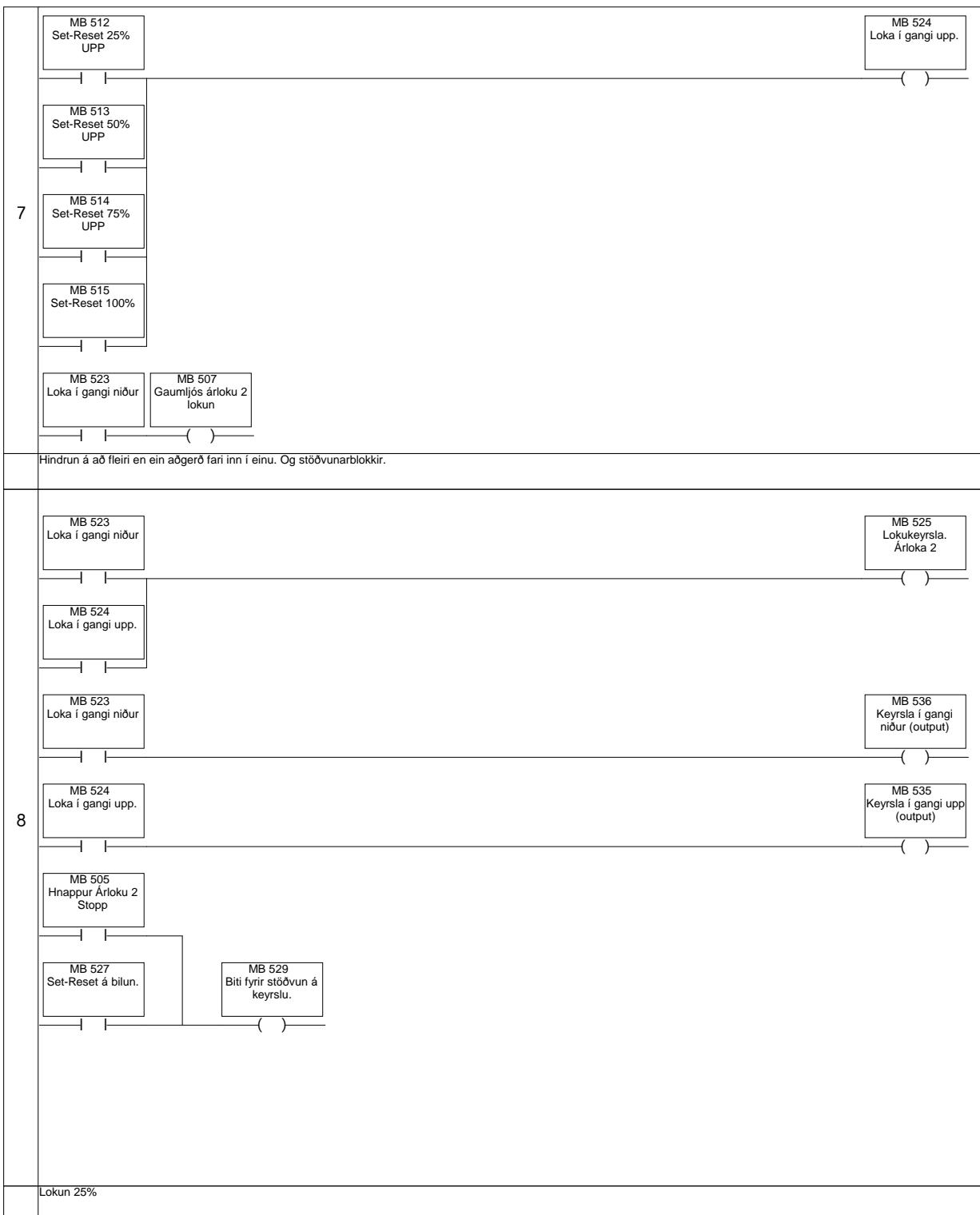
Fyrir truflanastýringu.

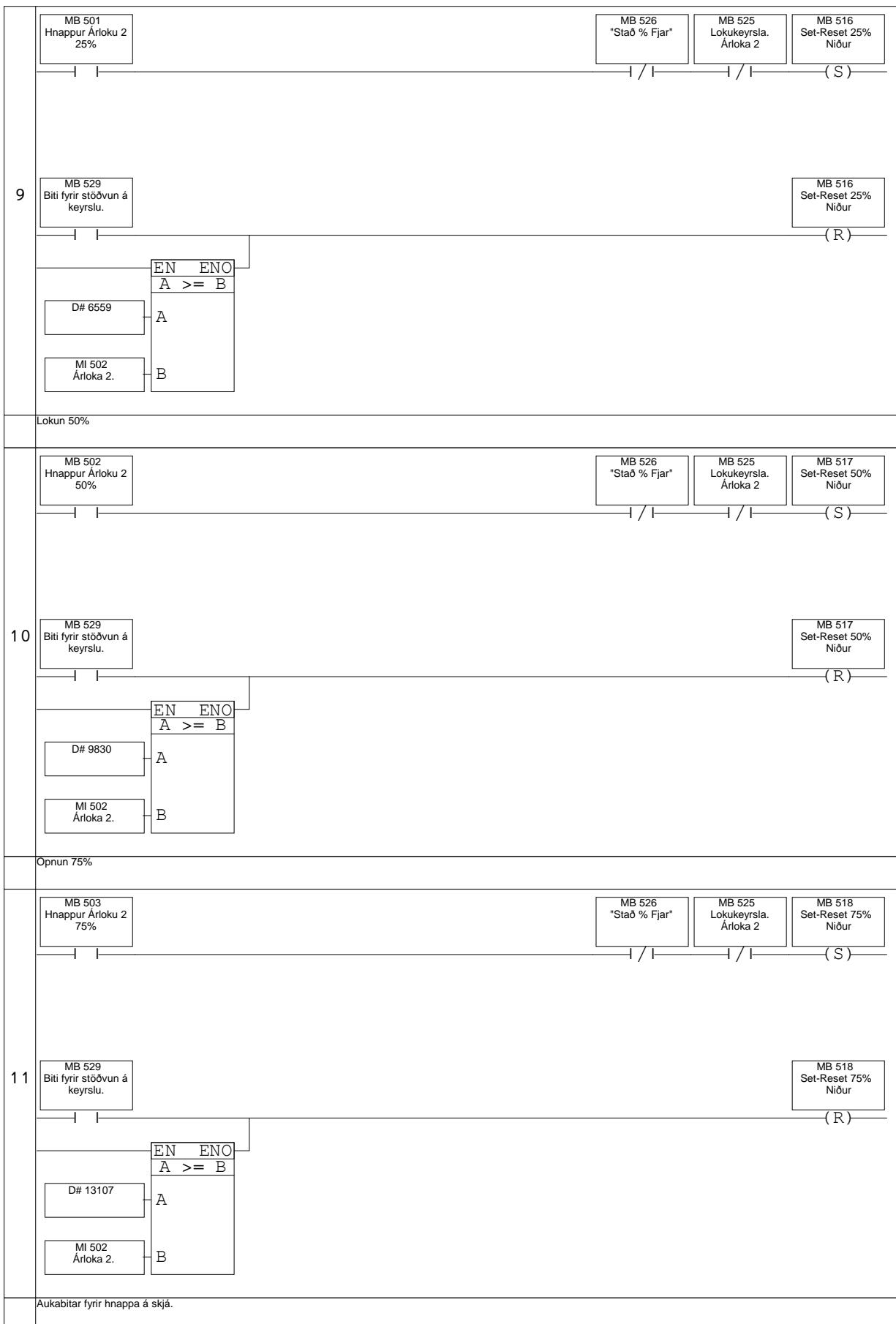
14	<p>TD 18 [00:00:03.00] Tímalíði fyrir analogmælingu</p> <p>MB 427 Set-Reset á bilun.</p>
Stað og fjarstýringu. Safnviðvaranir fyrir bilun.	
15	<p>MB 437 "Stað % Fjar" (innput)</p> <p>MB 426 "Stað % Fjar"</p> <p>MB 427 Set-Reset á bilun.</p> <p>MB 431 Safnviðvörun Bilun. Á1</p> <p>MB 432 Bilanir frá 400V skáp.</p>
17	<p>RET</p>

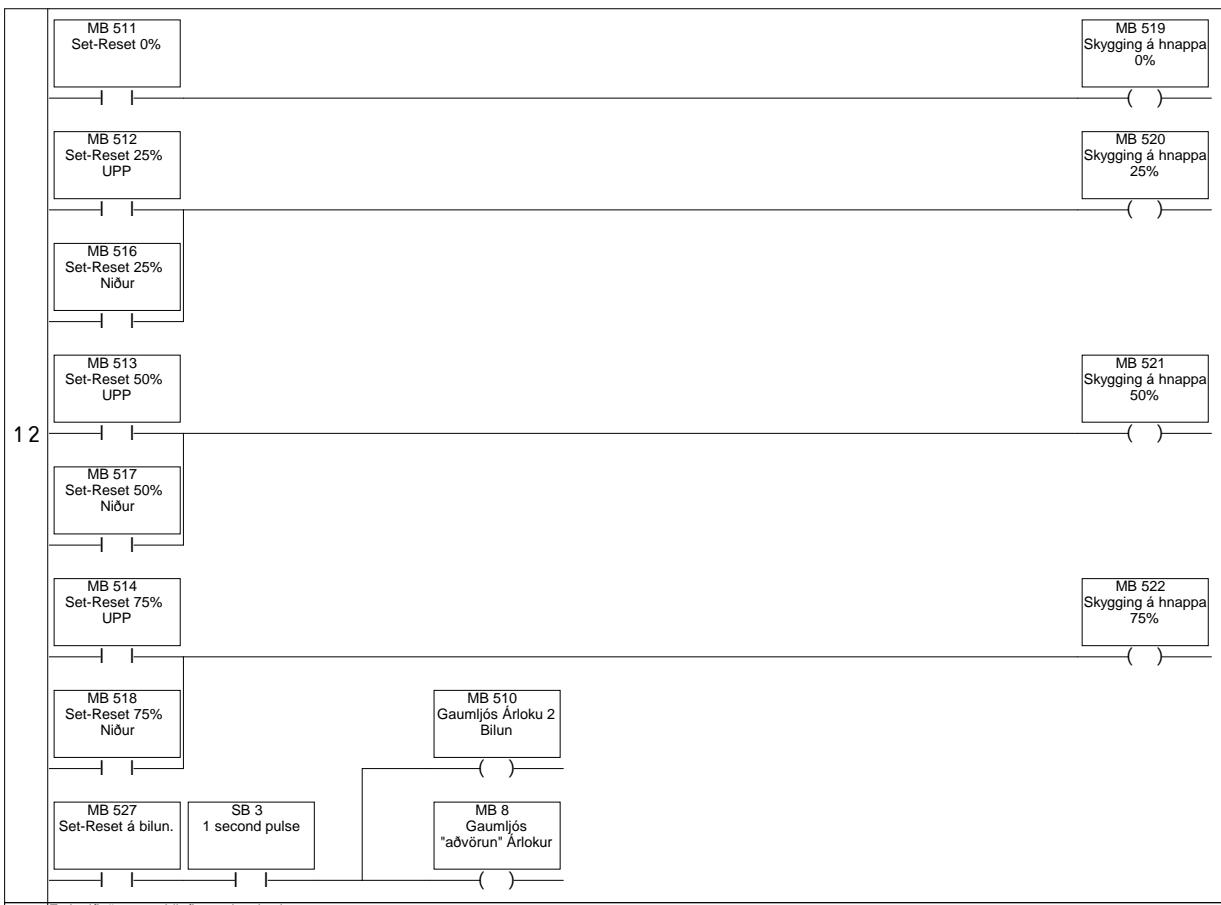




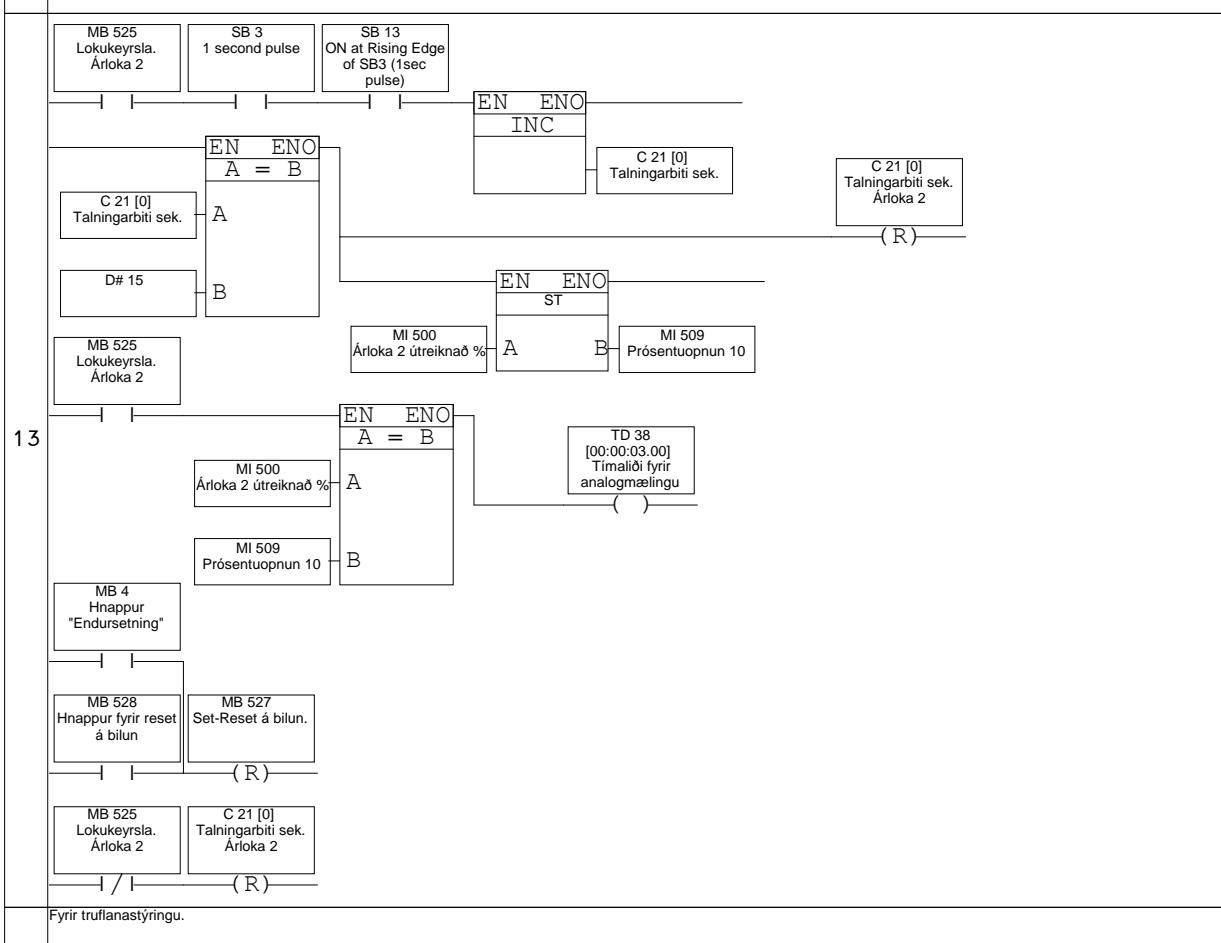






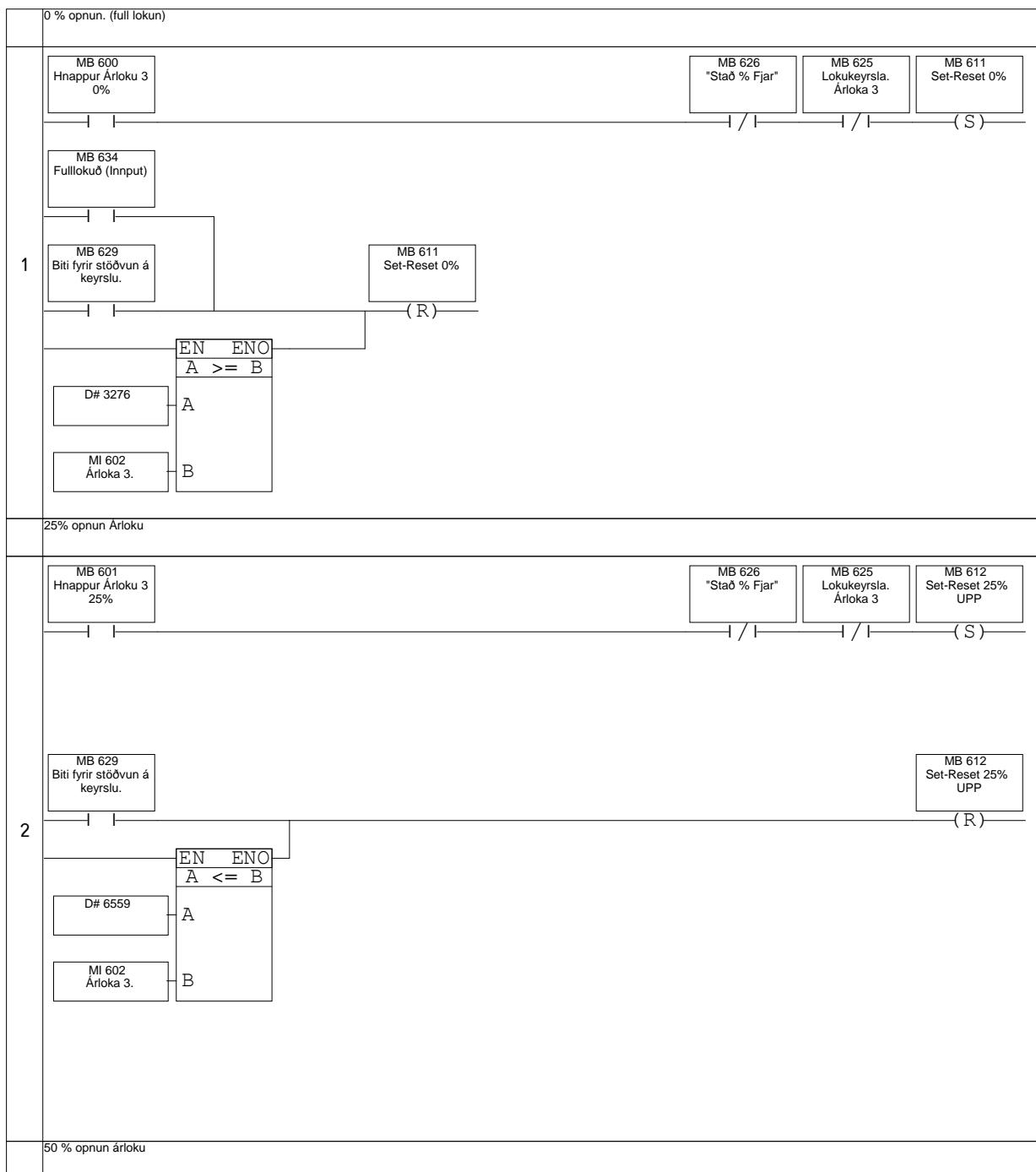


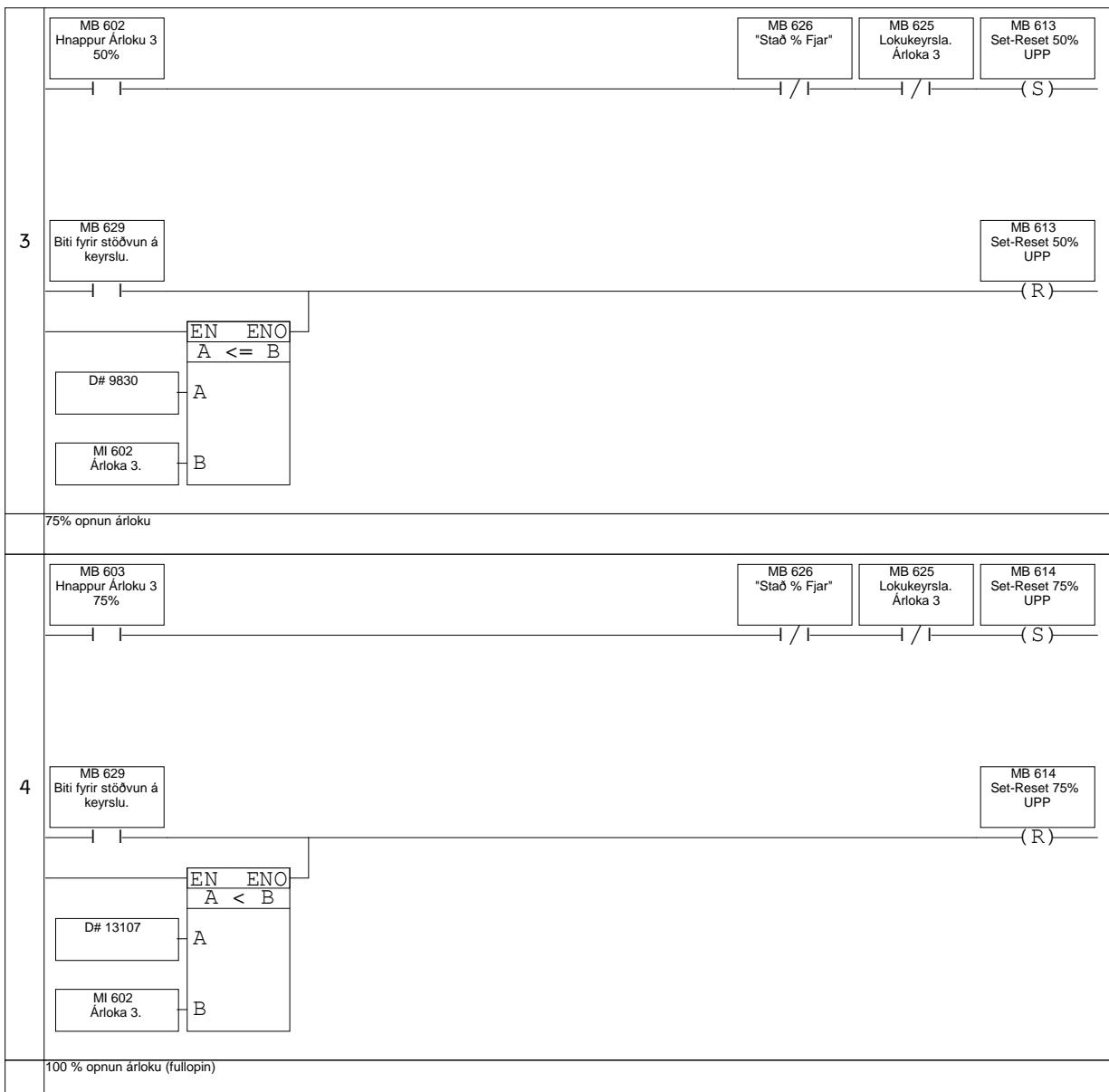
Fyrir viðvörun um bilaða analogskynjun.

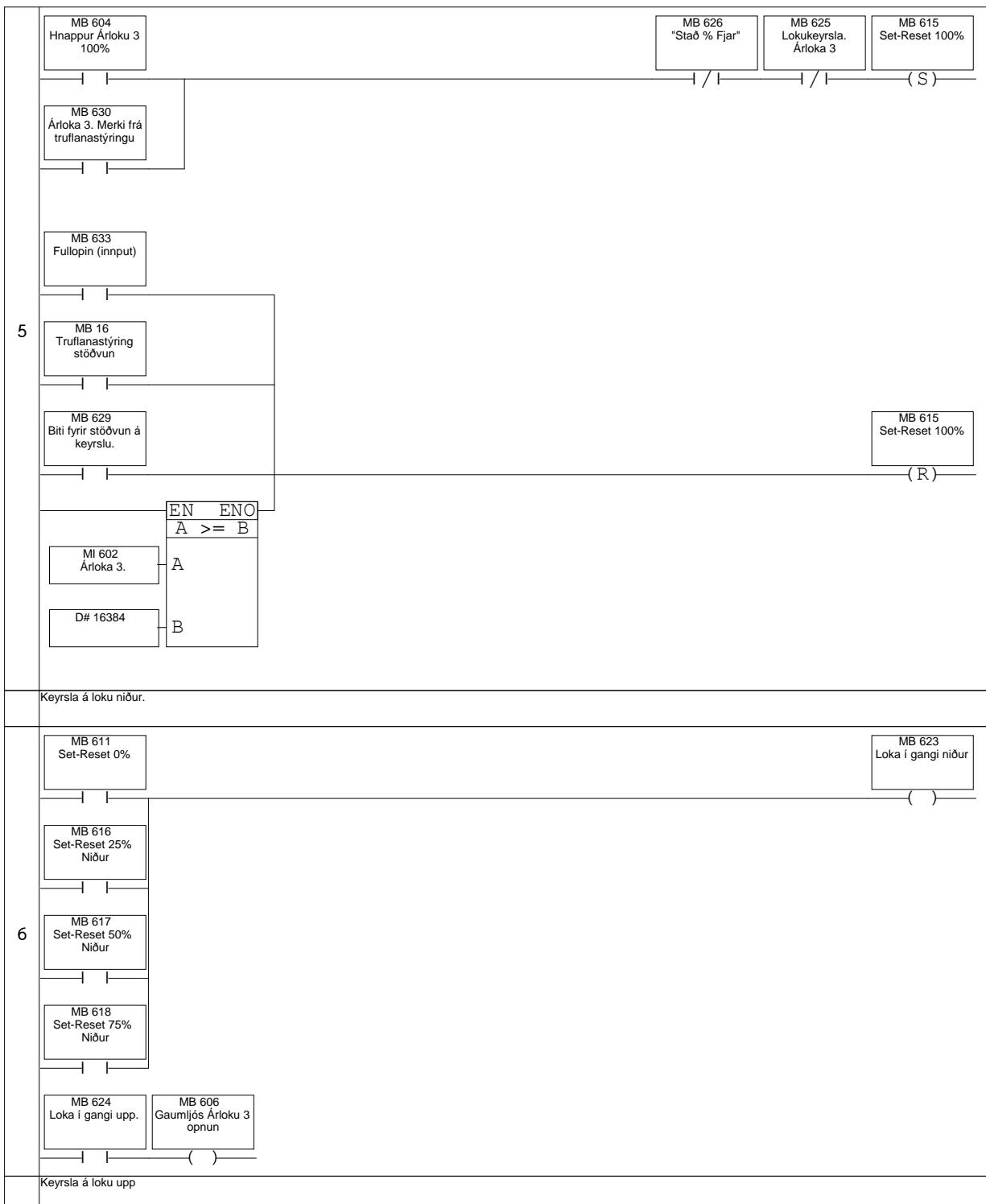


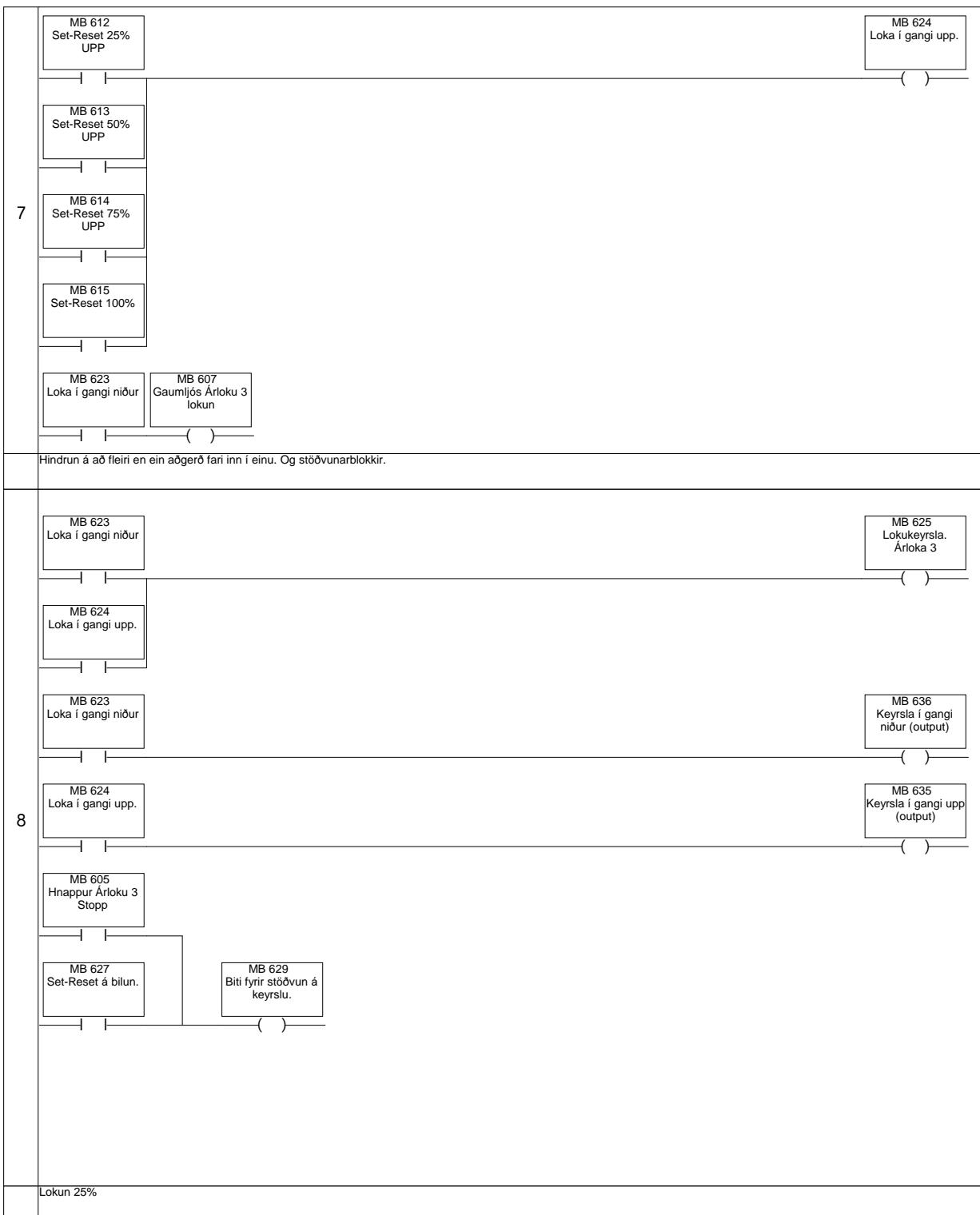
Fyrir truflanastýringu.

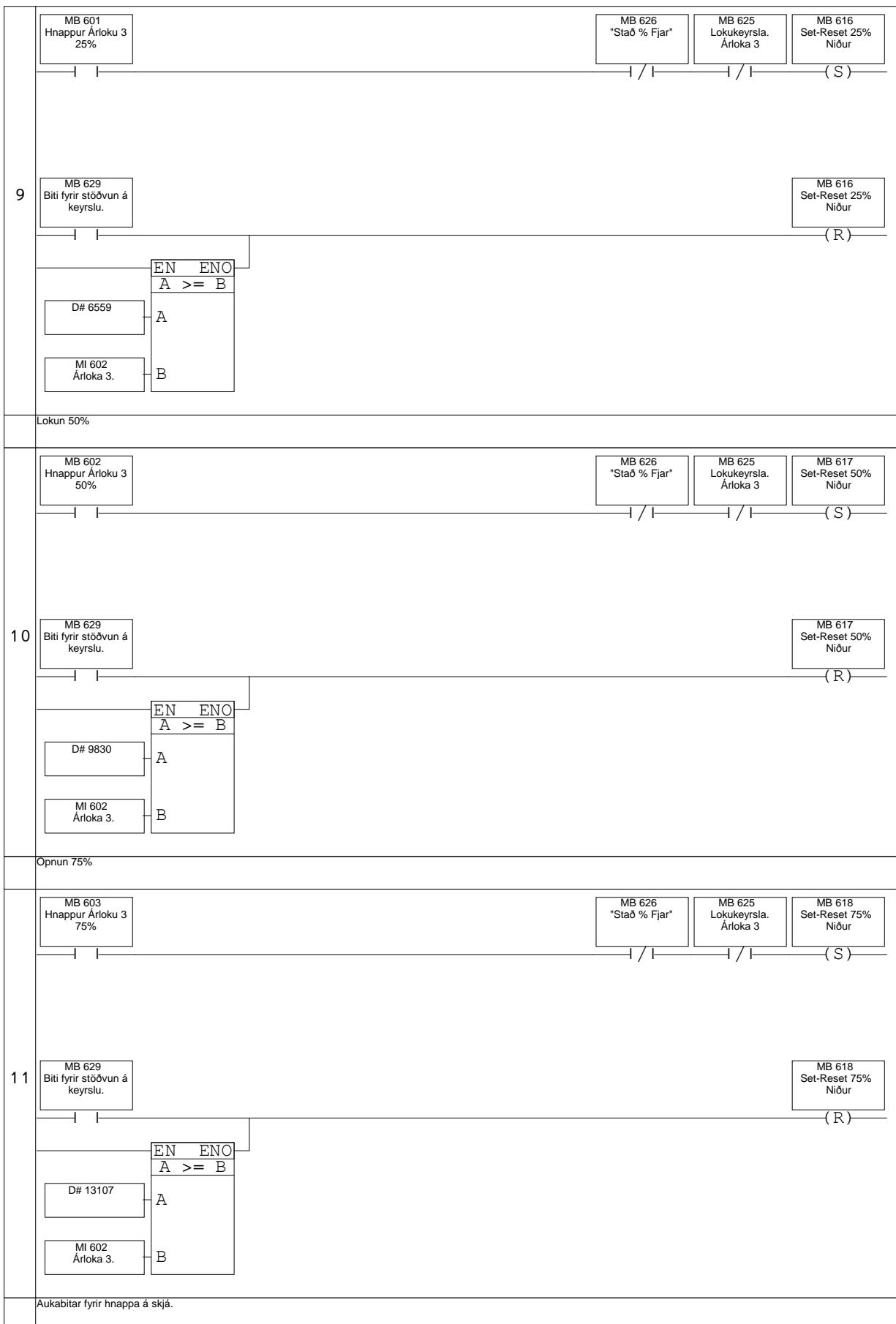
14	<p>TD 38 [00:00:03.00] Tímalíði fyrir analogmælingu</p> <p>MB 527 Set-Reset á bilun.</p> <p>(S)</p>
	Stað og fjarstýringu. Safnviðvaranir fyrir bilun.
15	<p>MB 537 "Stað % Fjar" (input)</p> <p>MB 526 "Stað % Fjar"</p> <p>()</p> <p>MB 527 Set-Reset á bilun.</p> <p>MB 531 Safnviðvörur Bilun. Á2</p> <p>()</p> <p>MB 532 Bilanir frá 400V skáp.</p> <p>()</p>
17	<p>RET</p>

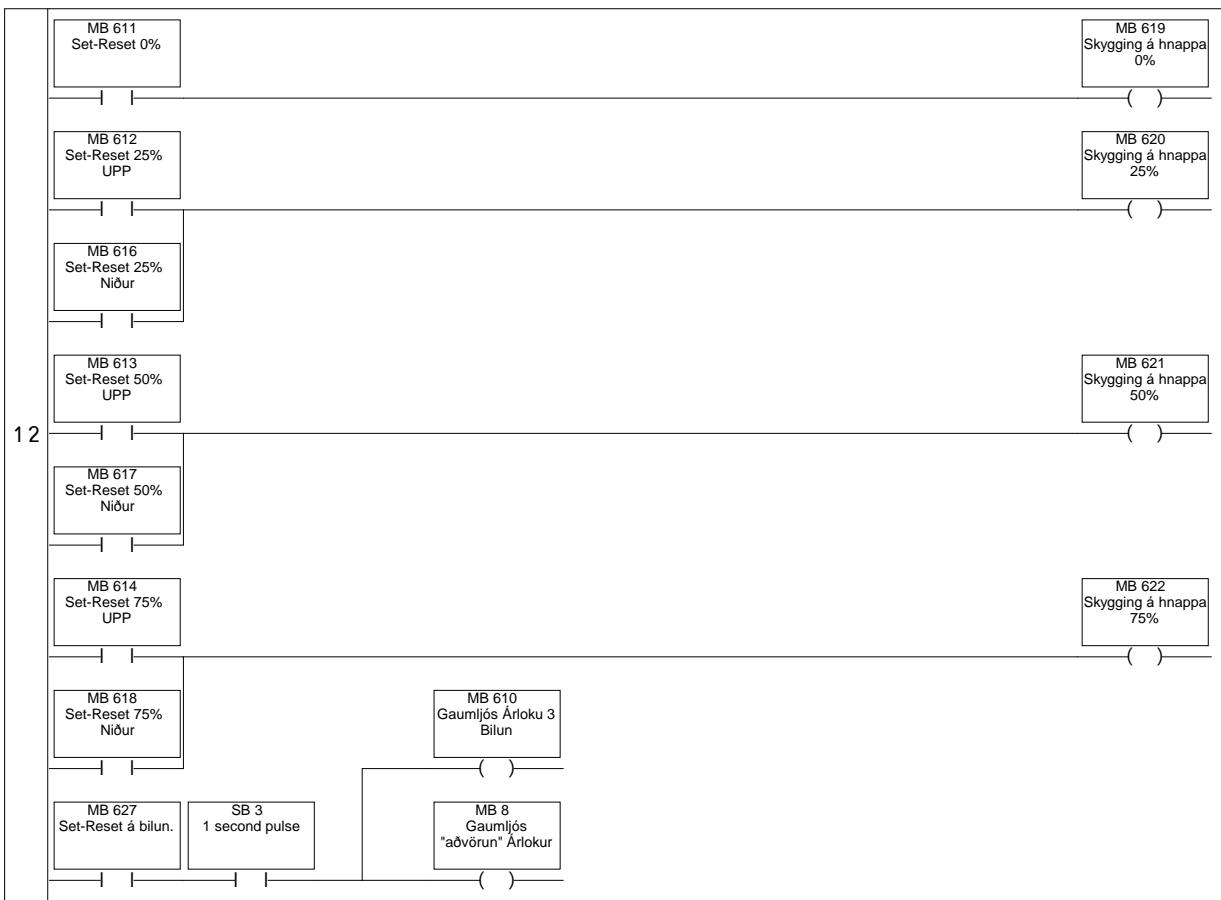




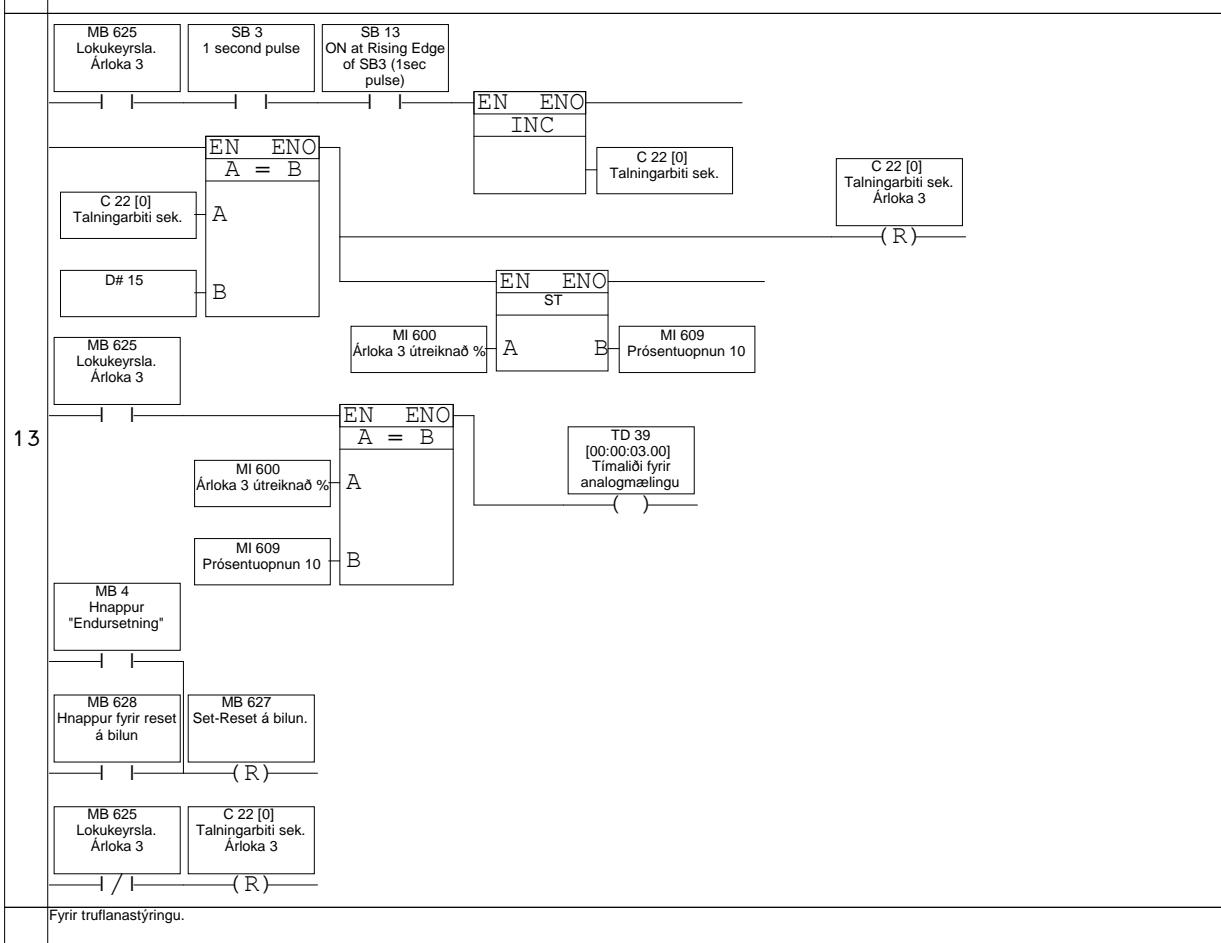






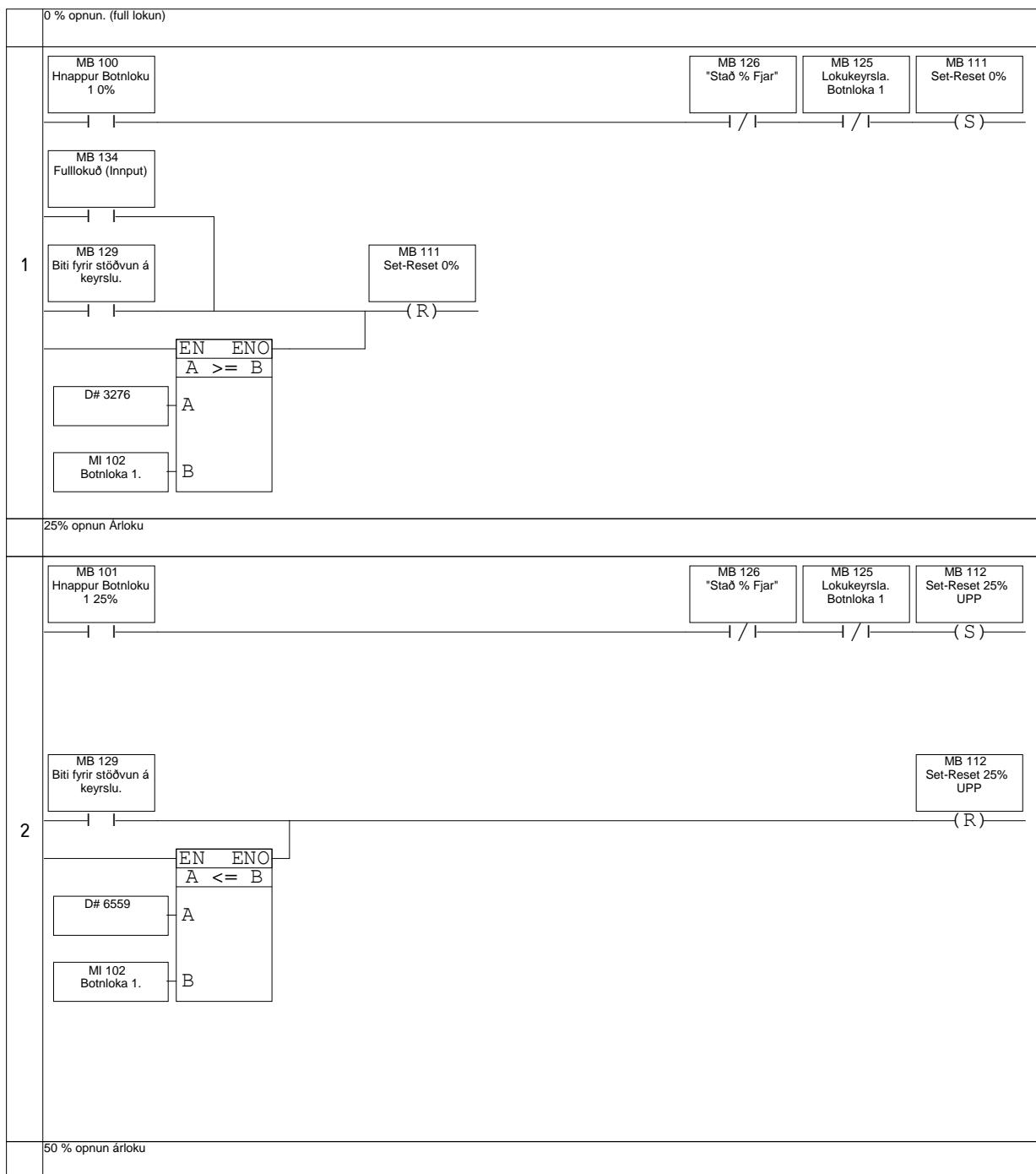


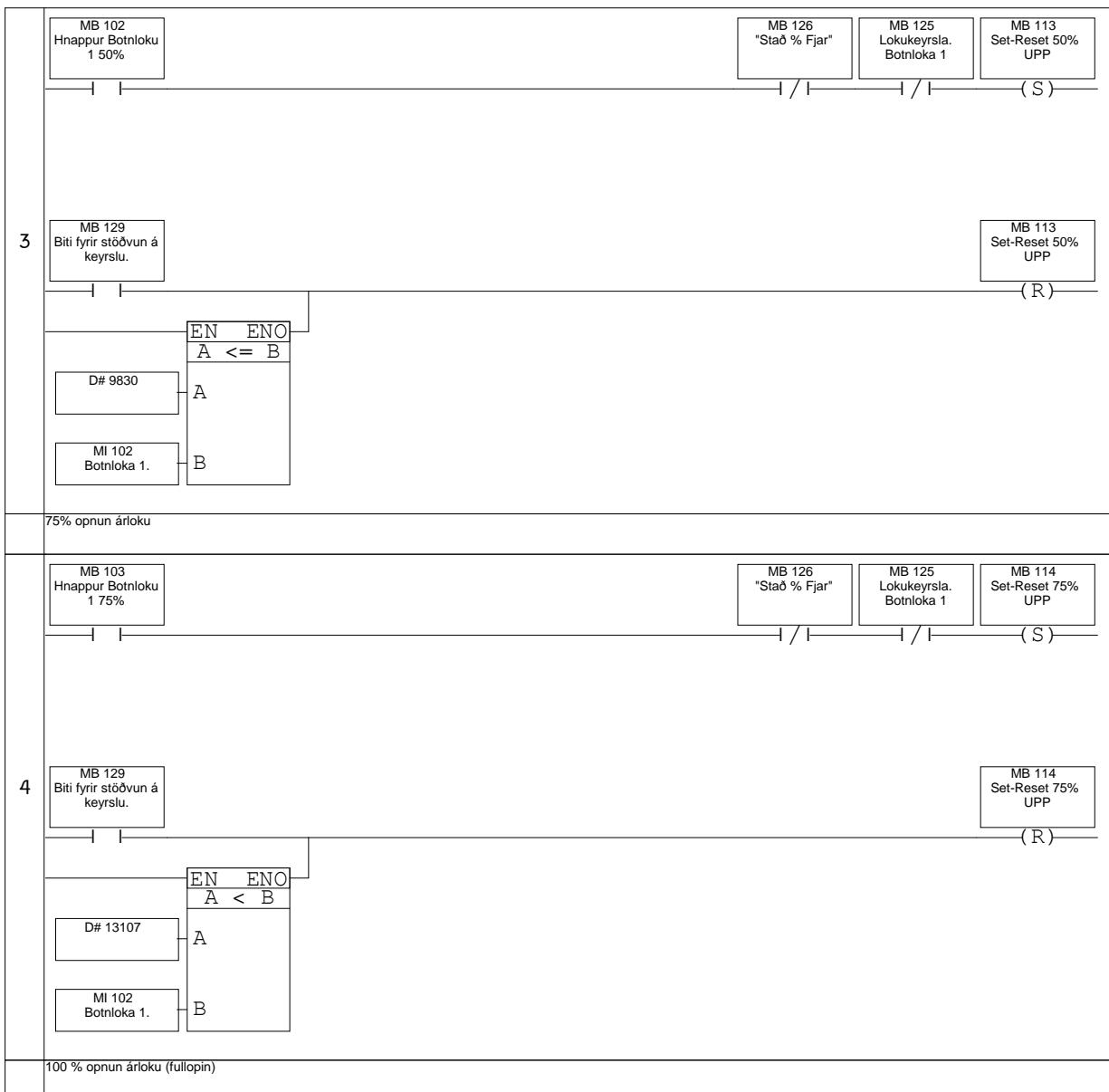
Fyrir viðvörun um bilaða analogskynjun.

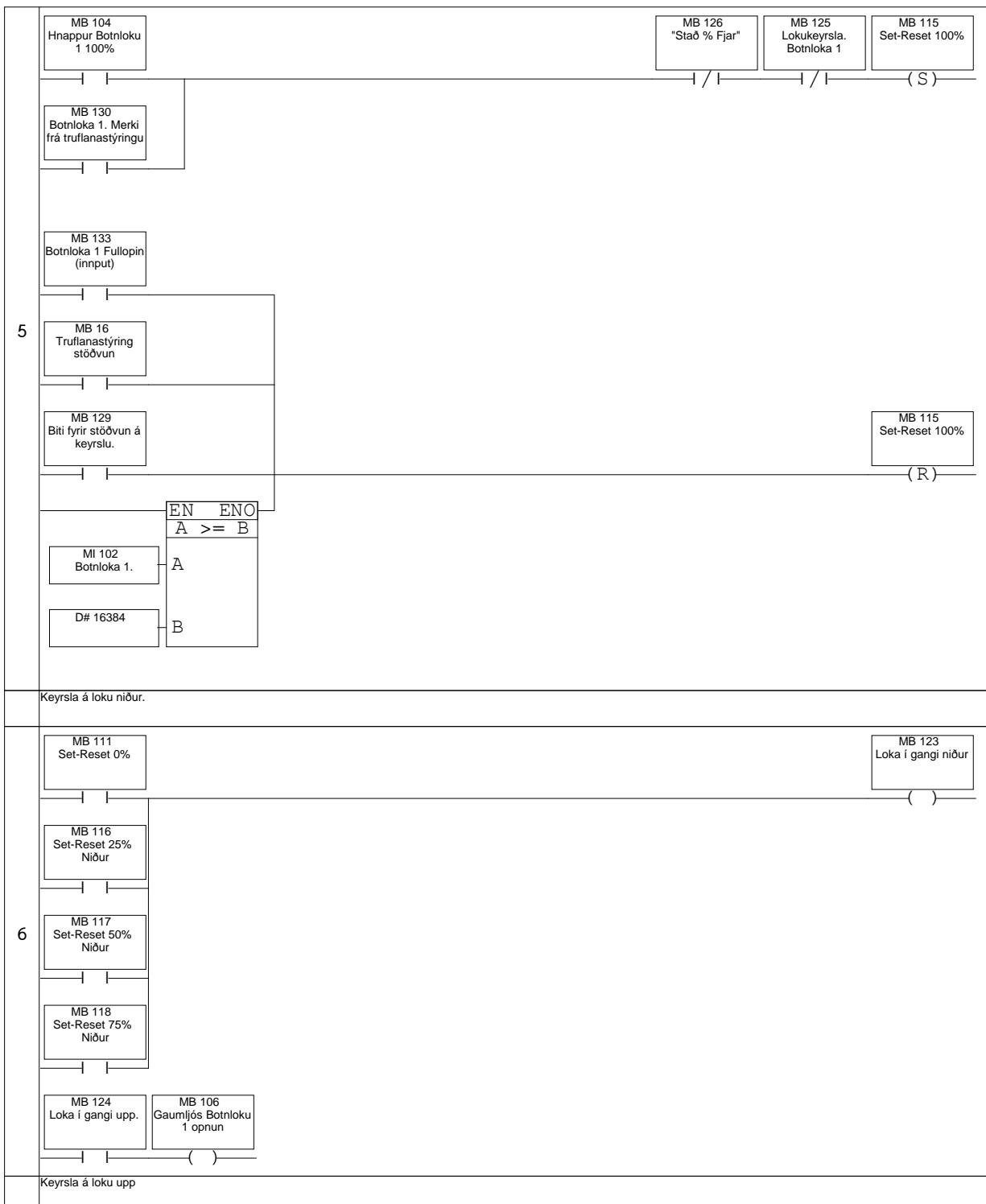


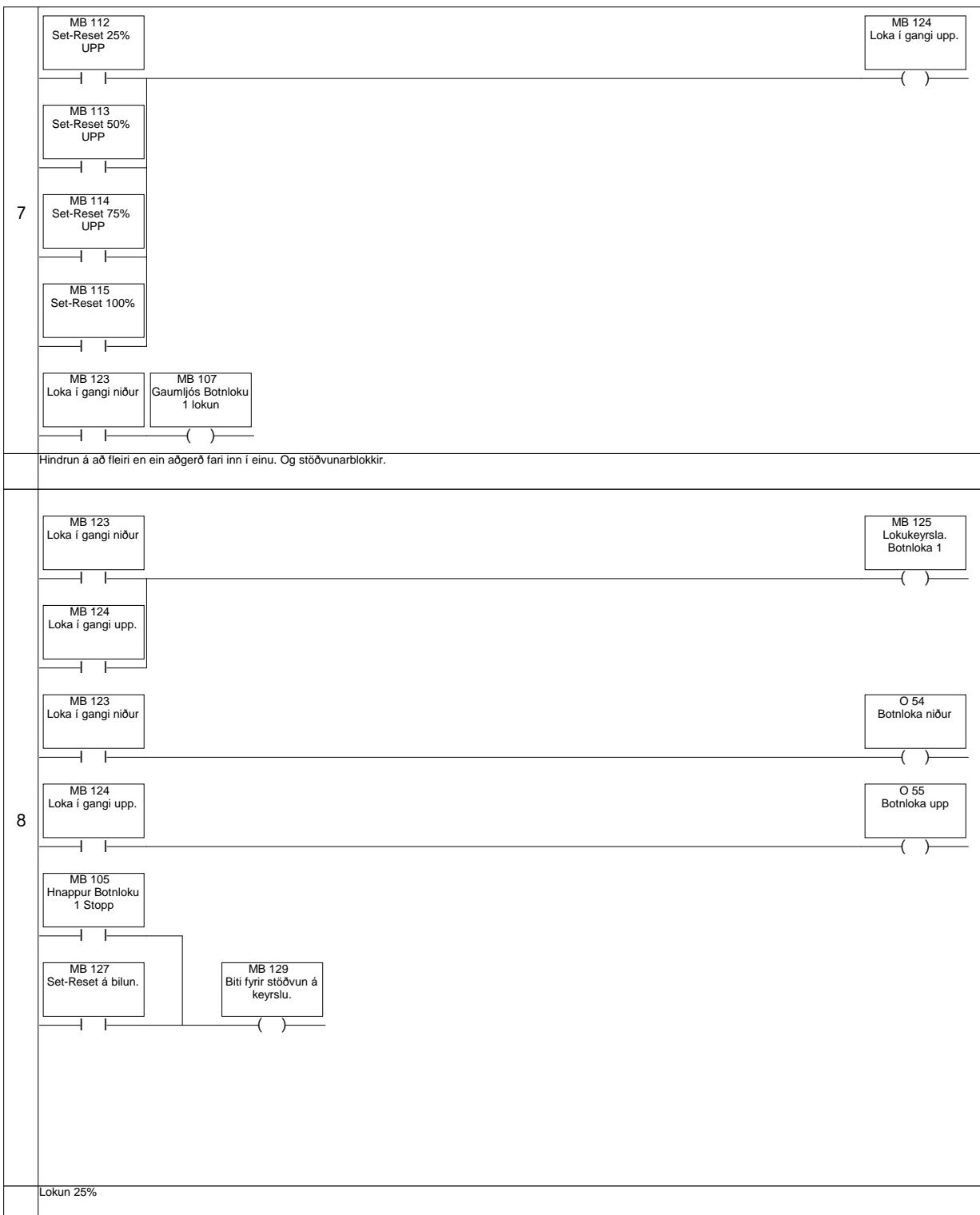
Fyrir truflanastýringu.

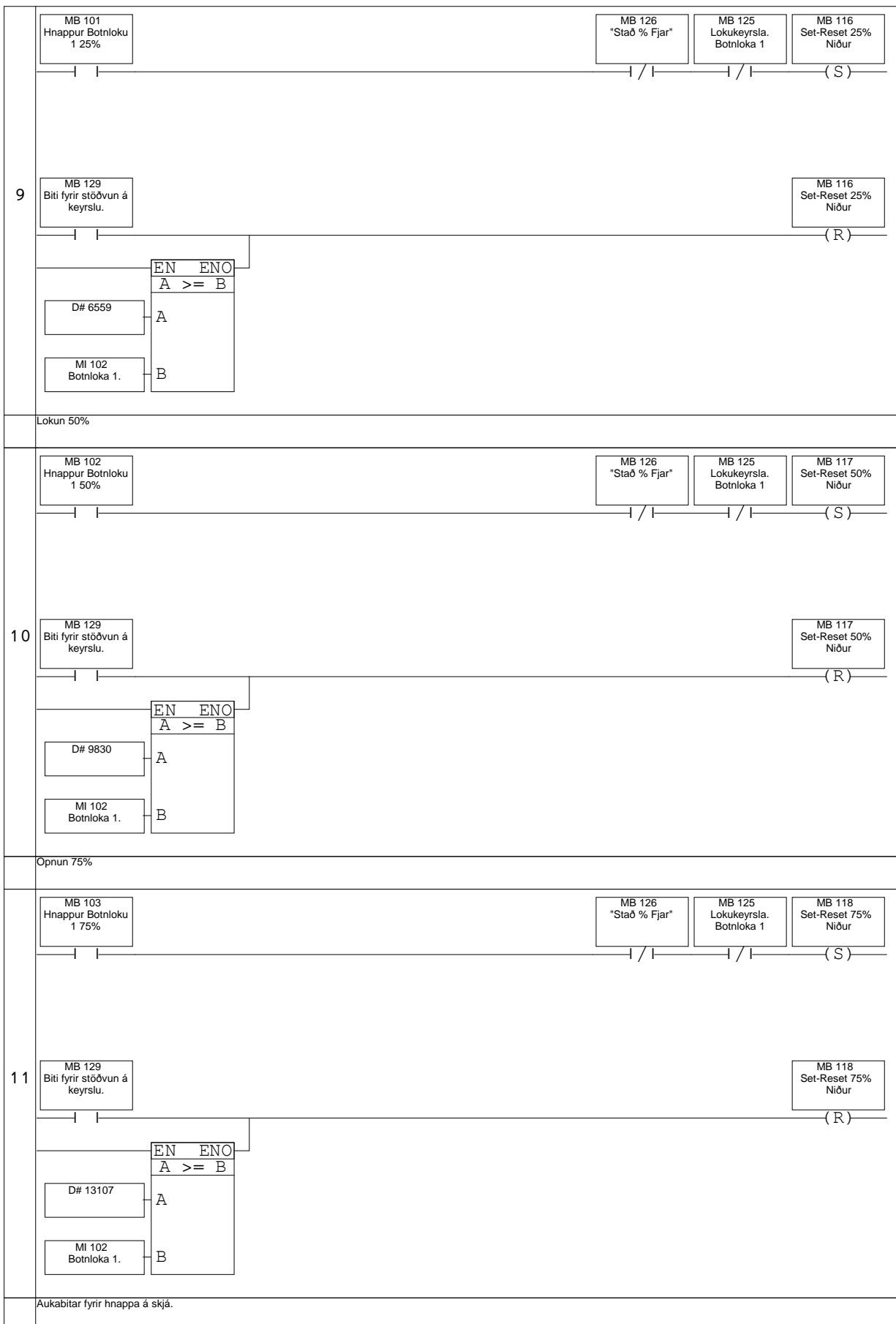
14	<p>TD 39 [00:00:03.00] Tímalíði fyrir analogmælingu</p> <p>MB 627 Set-Reset á bilun.</p>
	<p>Stað og fjarstýringu. Safnviðvaranir fyrir bilun.</p>
15	<p>MB 637 "Stað % Fjar" (input)</p> <p>MB 626 "Stað % Fjar"</p> <p>MB 627 Set-Reset á bilun.</p> <p>MB 631 Safnviðvörur Bilun. Á3</p> <p>MB 632 Bilanir frá 400V skáp.</p>
17	<p>RET</p>

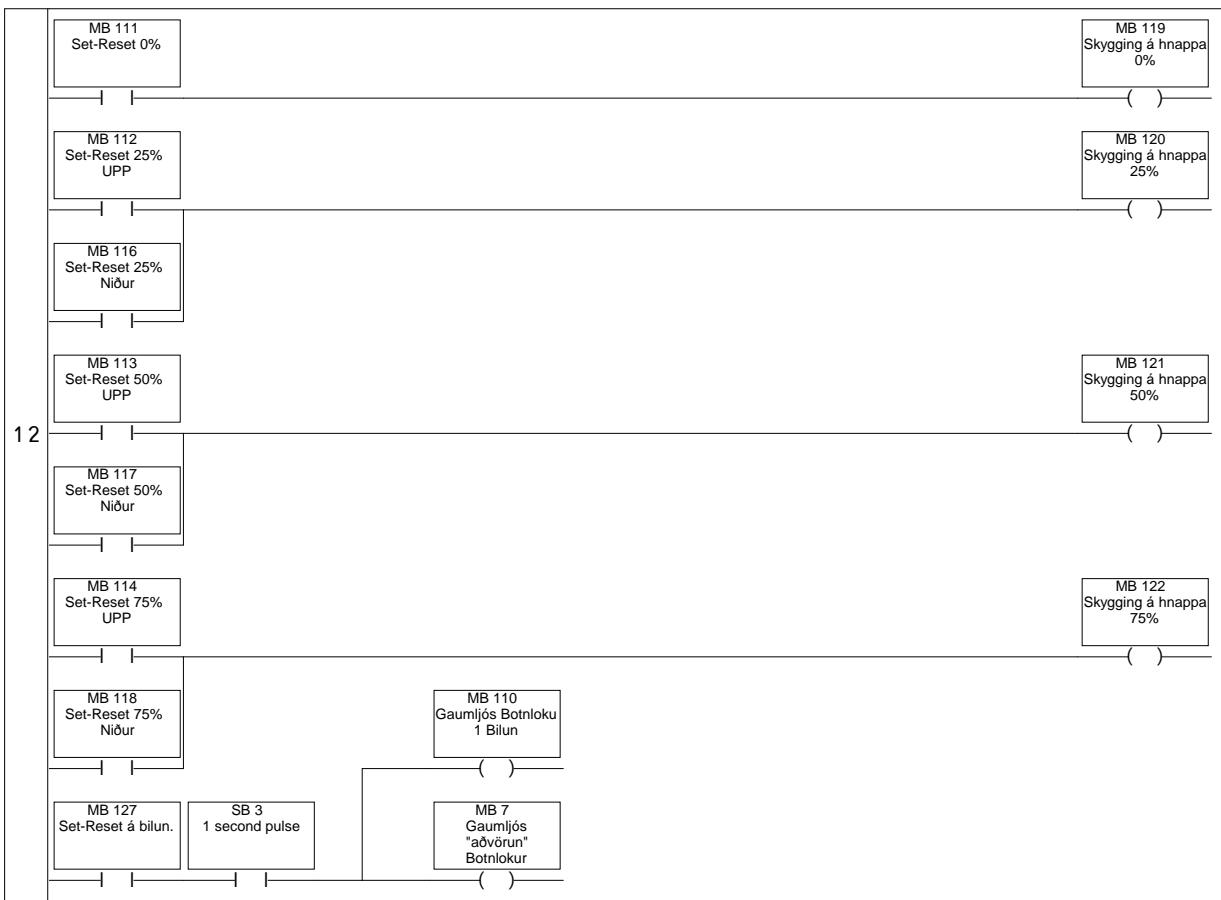




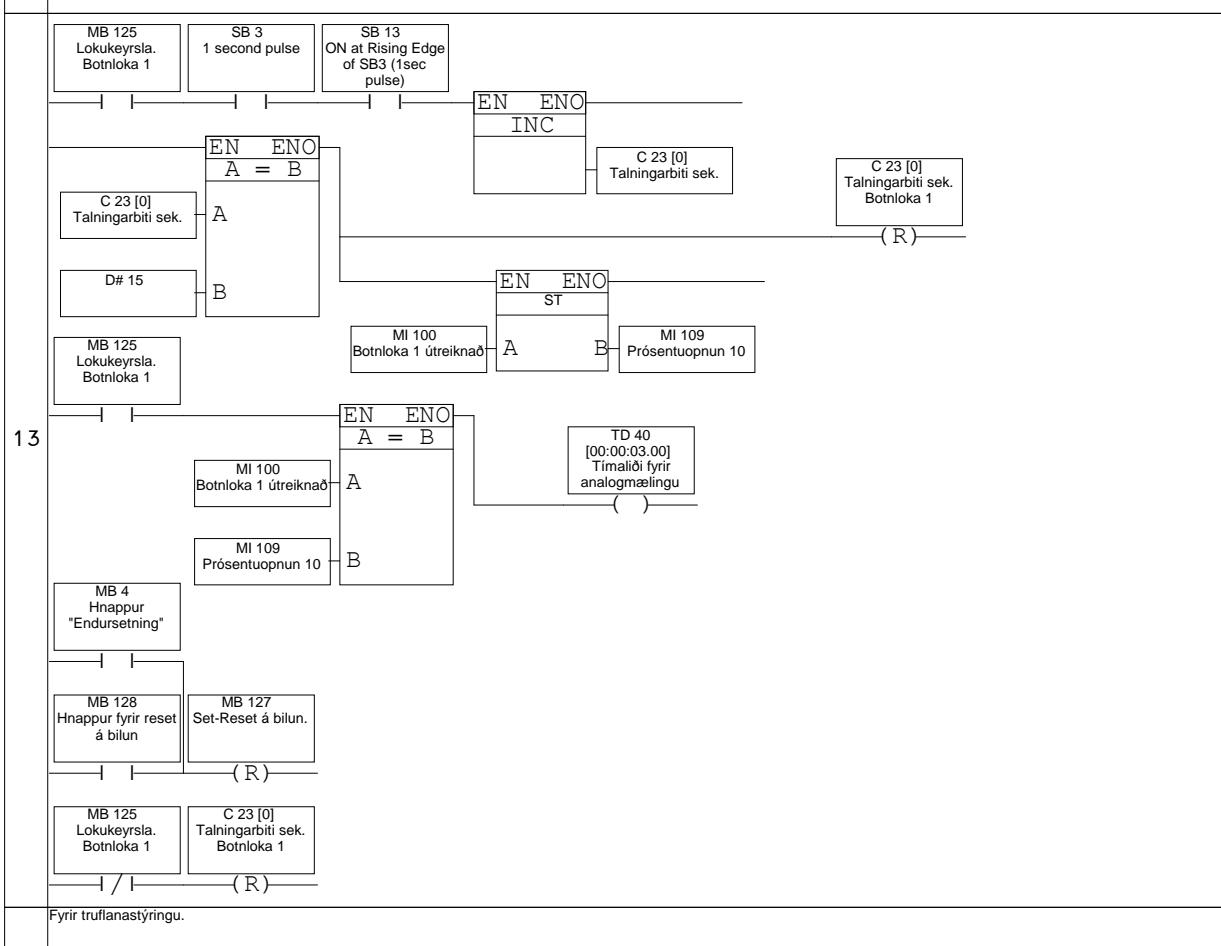






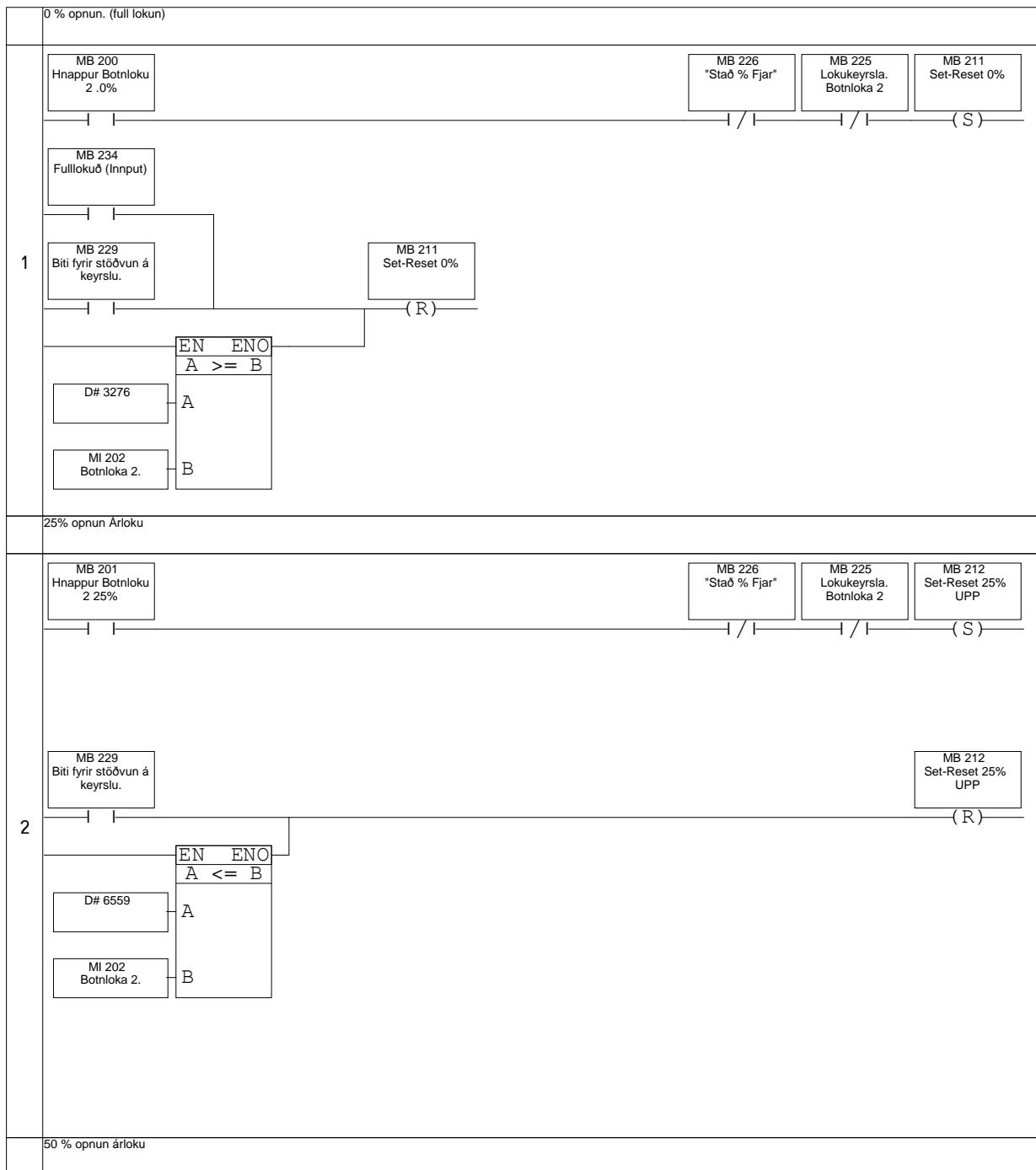


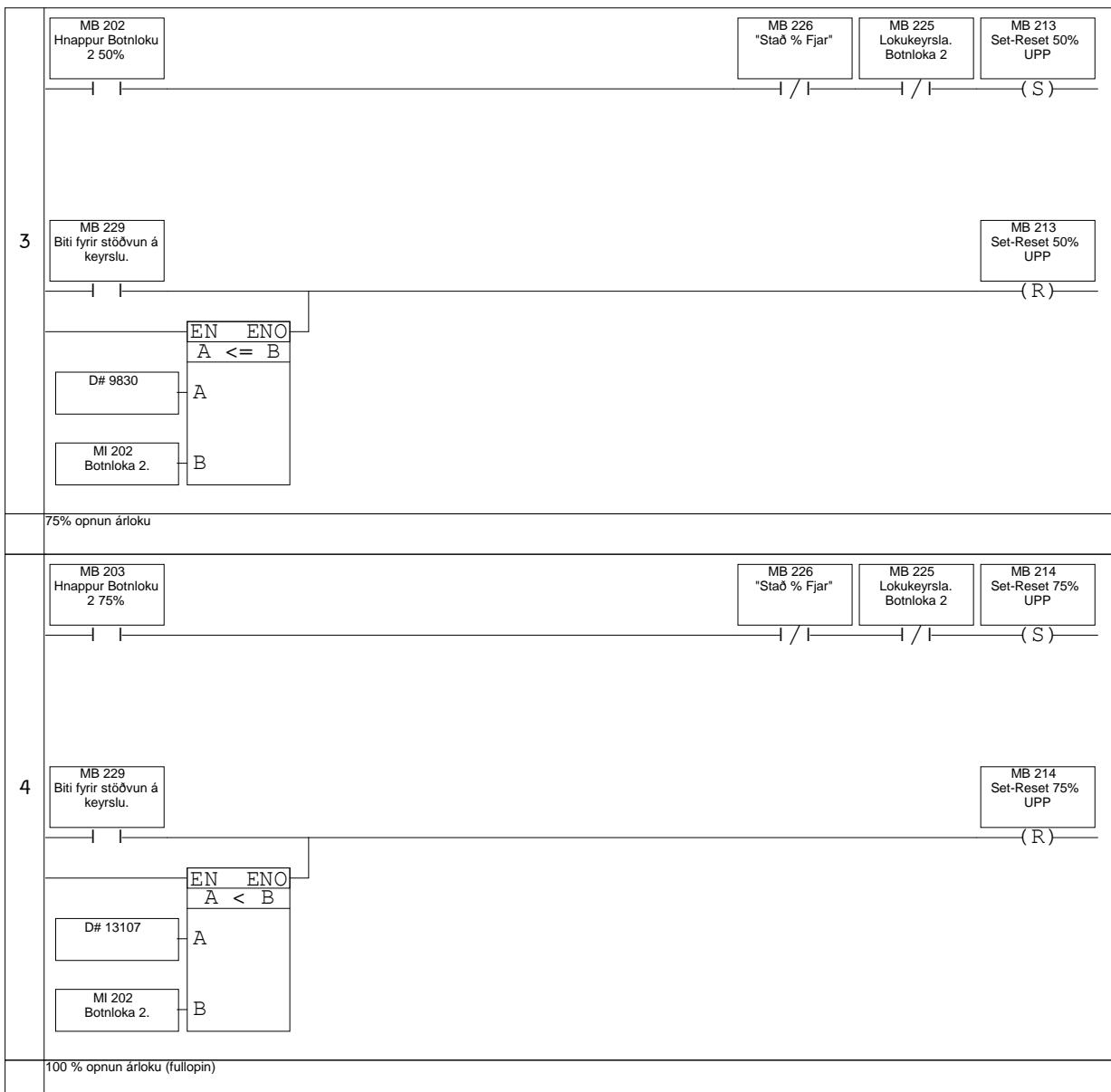
Fyrir viðvörun um bilaða analogskynjun.

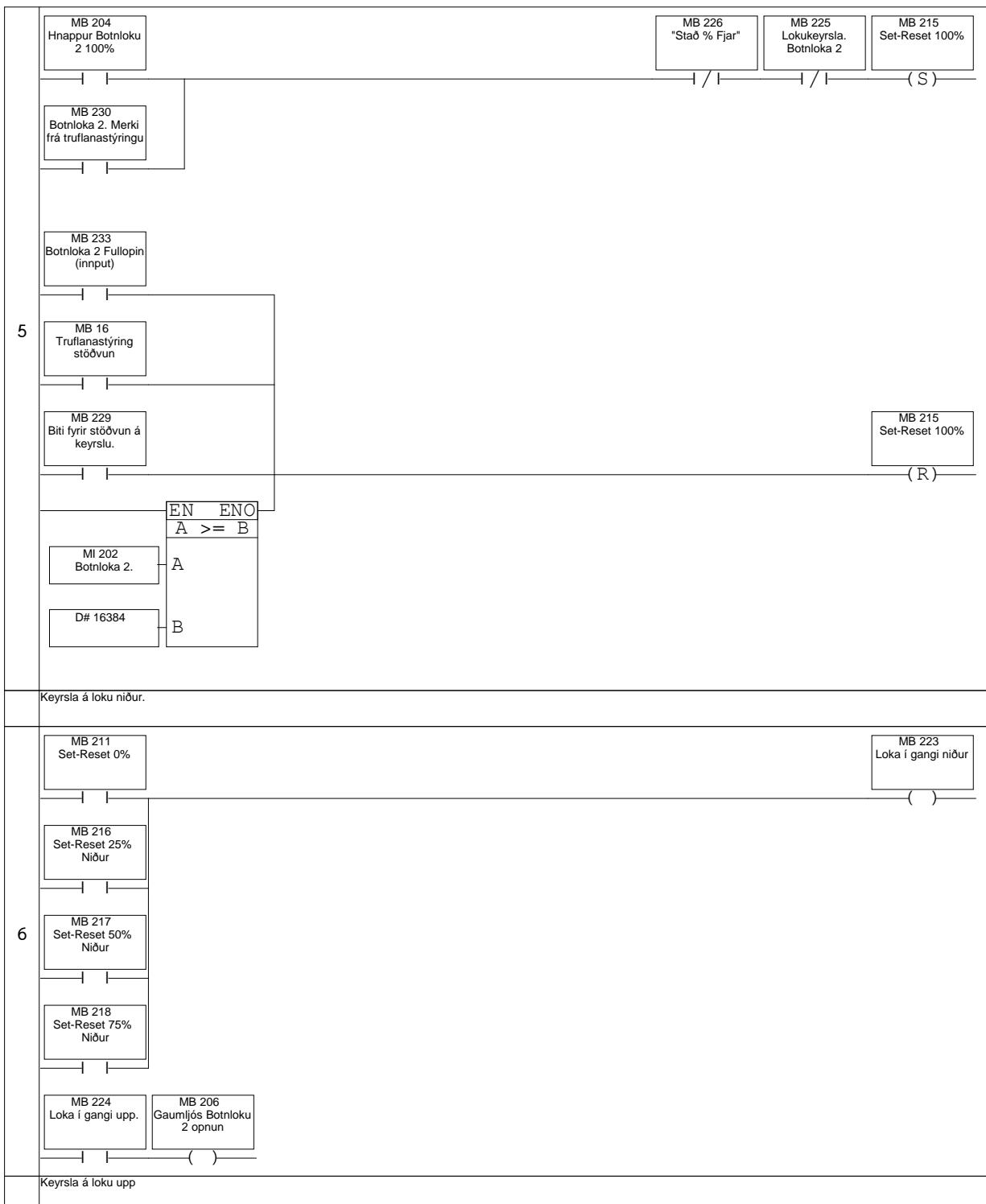


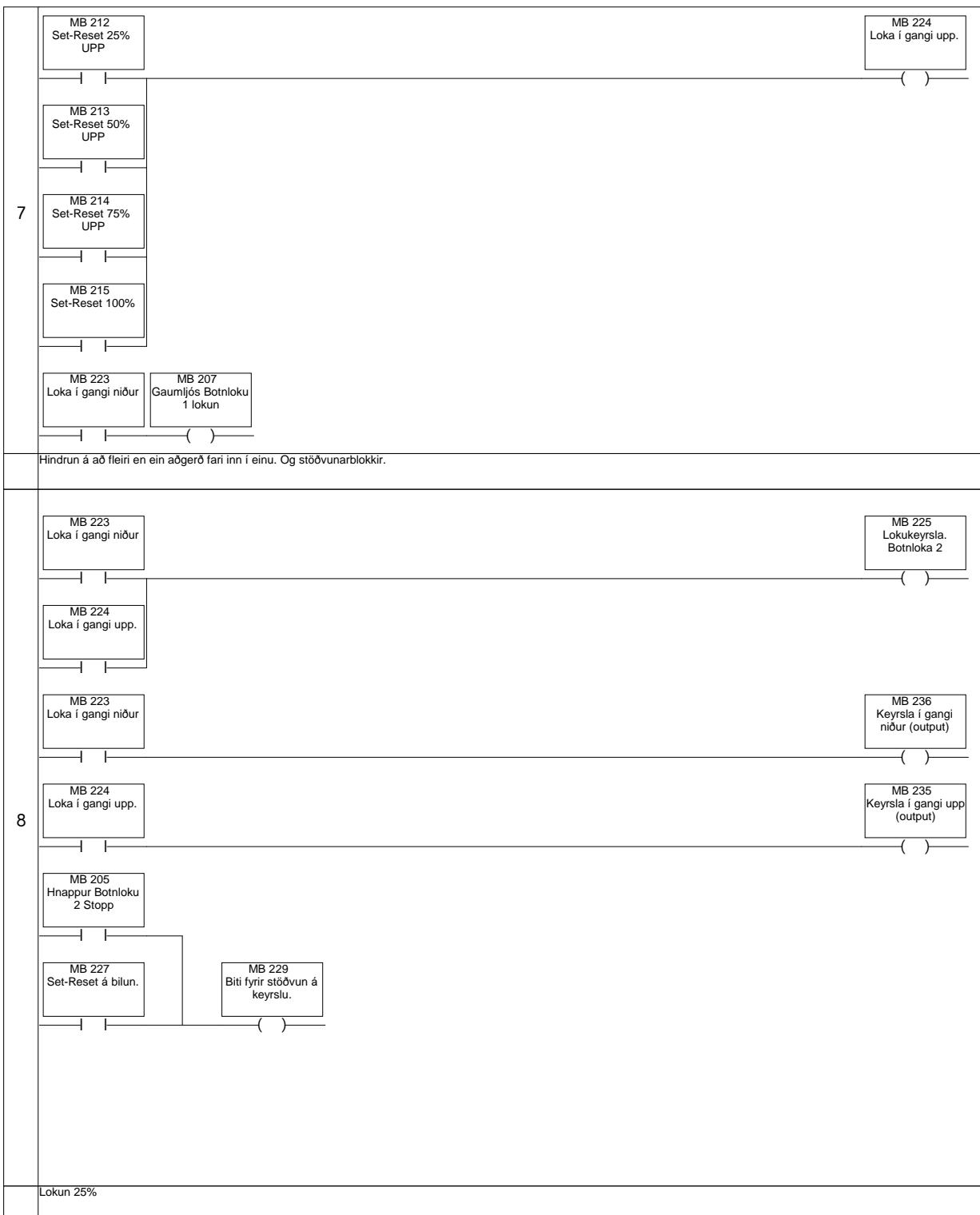
Fyrir truflanastýringu.

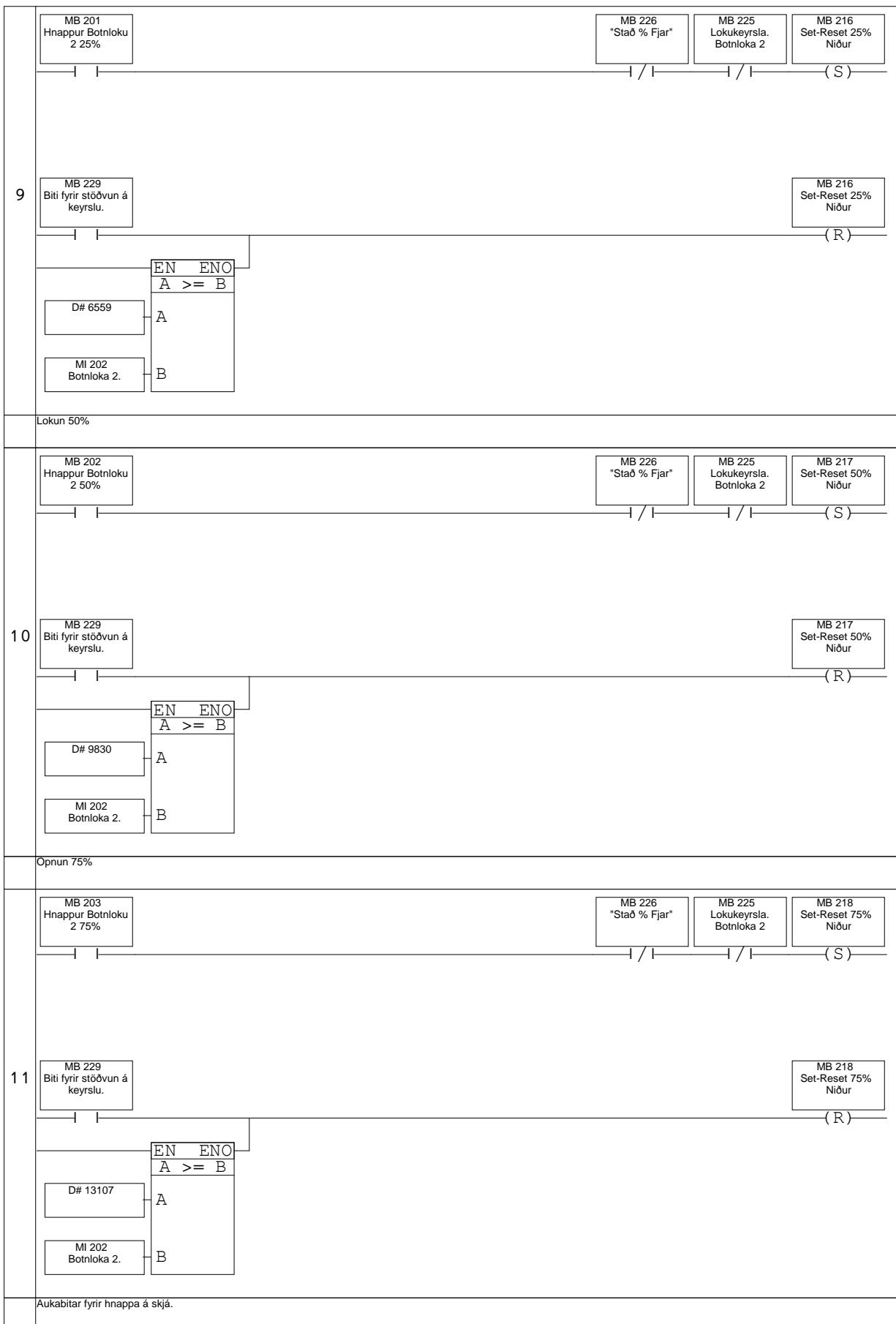
14	<p>TD 40 [00:00:03.00] Tímalíði fyrir analogmælingu</p> <p>MB 127 Set-Reset á bilun. (S)</p>
	Stað og fjarstýringu. Safnviðvaranir fyrir bilun.
15	<p>MB 137 "Stað % Fjar" (innput)</p> <p>MB 126 "Stað % Fjar"</p> <p>MB 127 Set-Reset á bilun.</p> <p>MB 131 Safnviðvörur Bilun.B1</p> <p>MB 132 Bilanir frá 400V skáp.</p>
17	<p>RET</p>

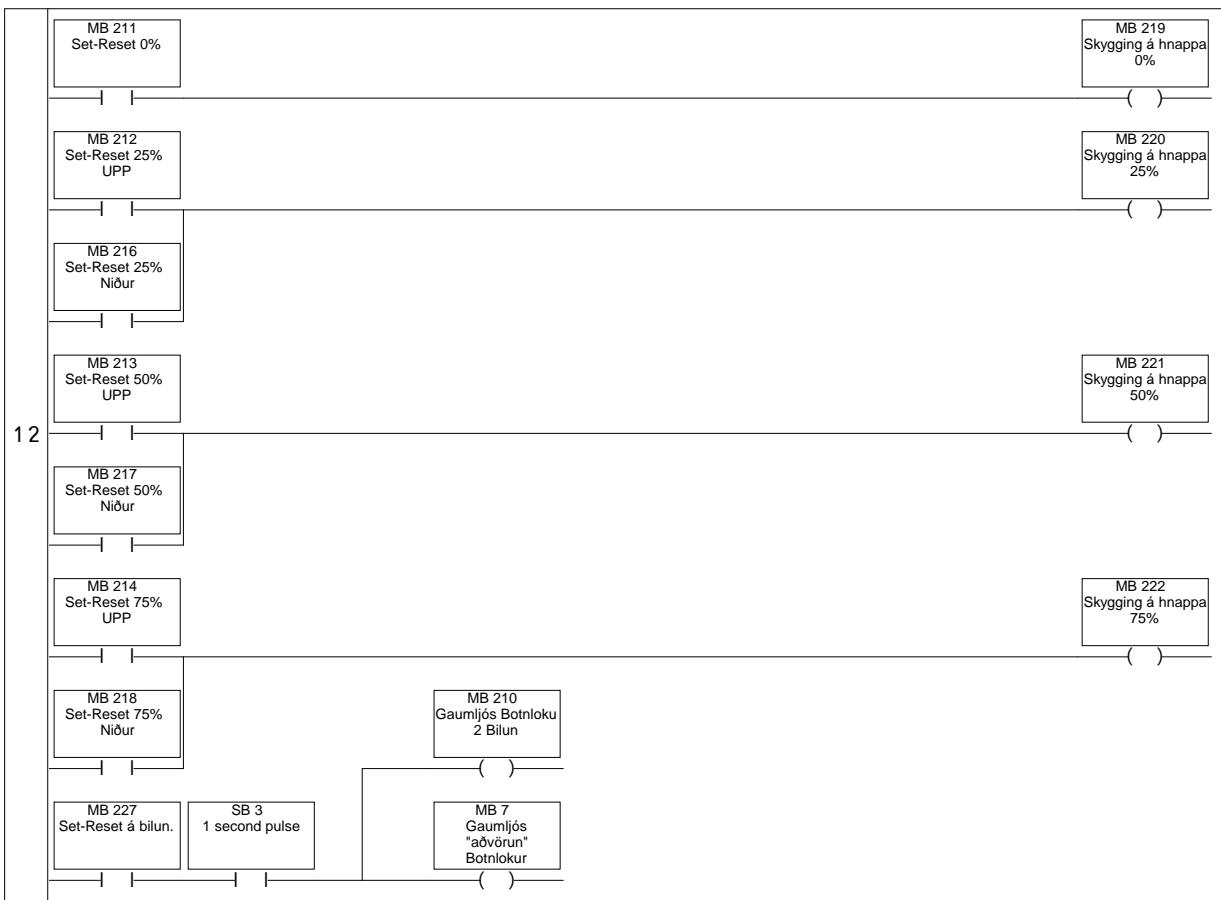




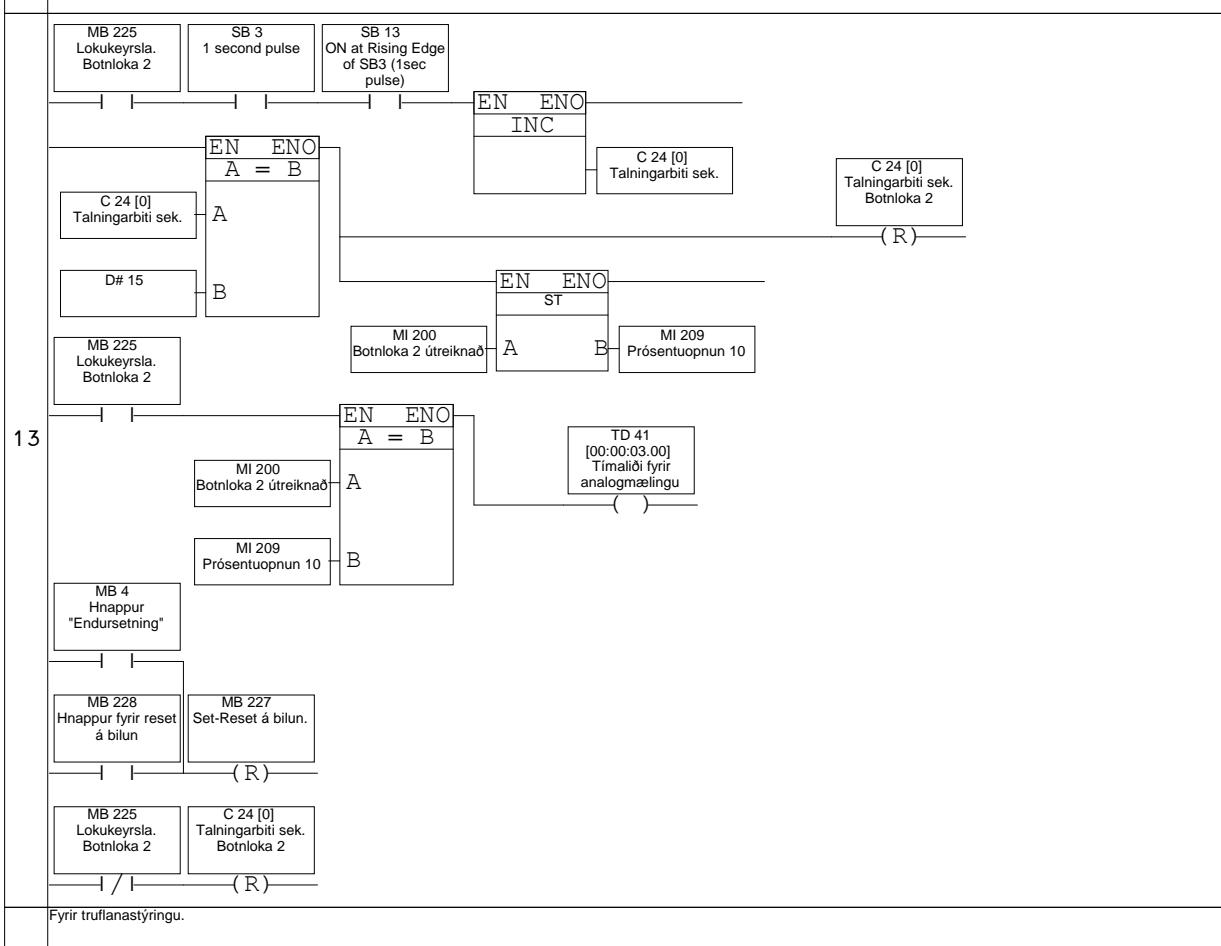






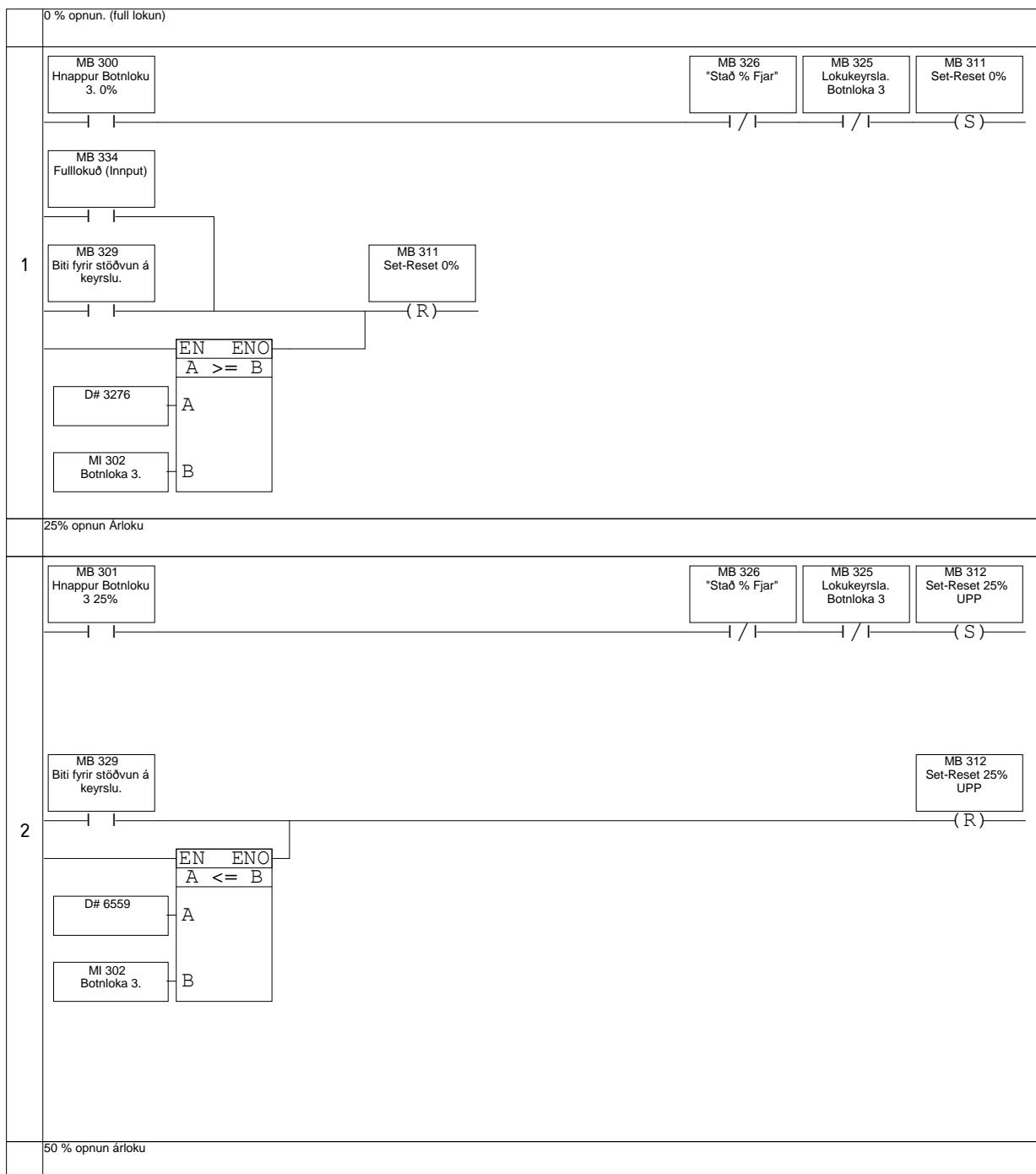


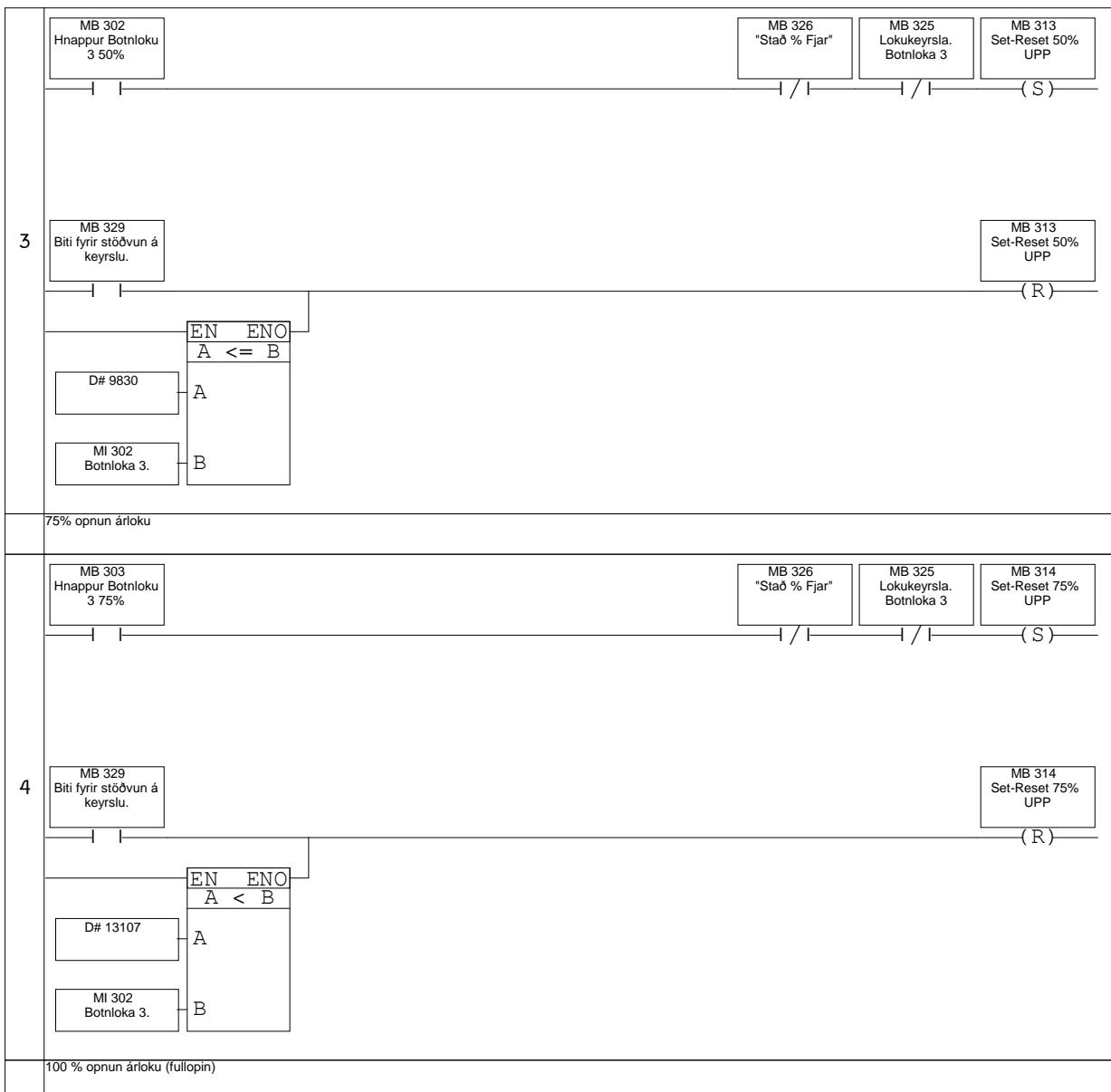
Fyrir viðvörun um bilaða analogskynjun.

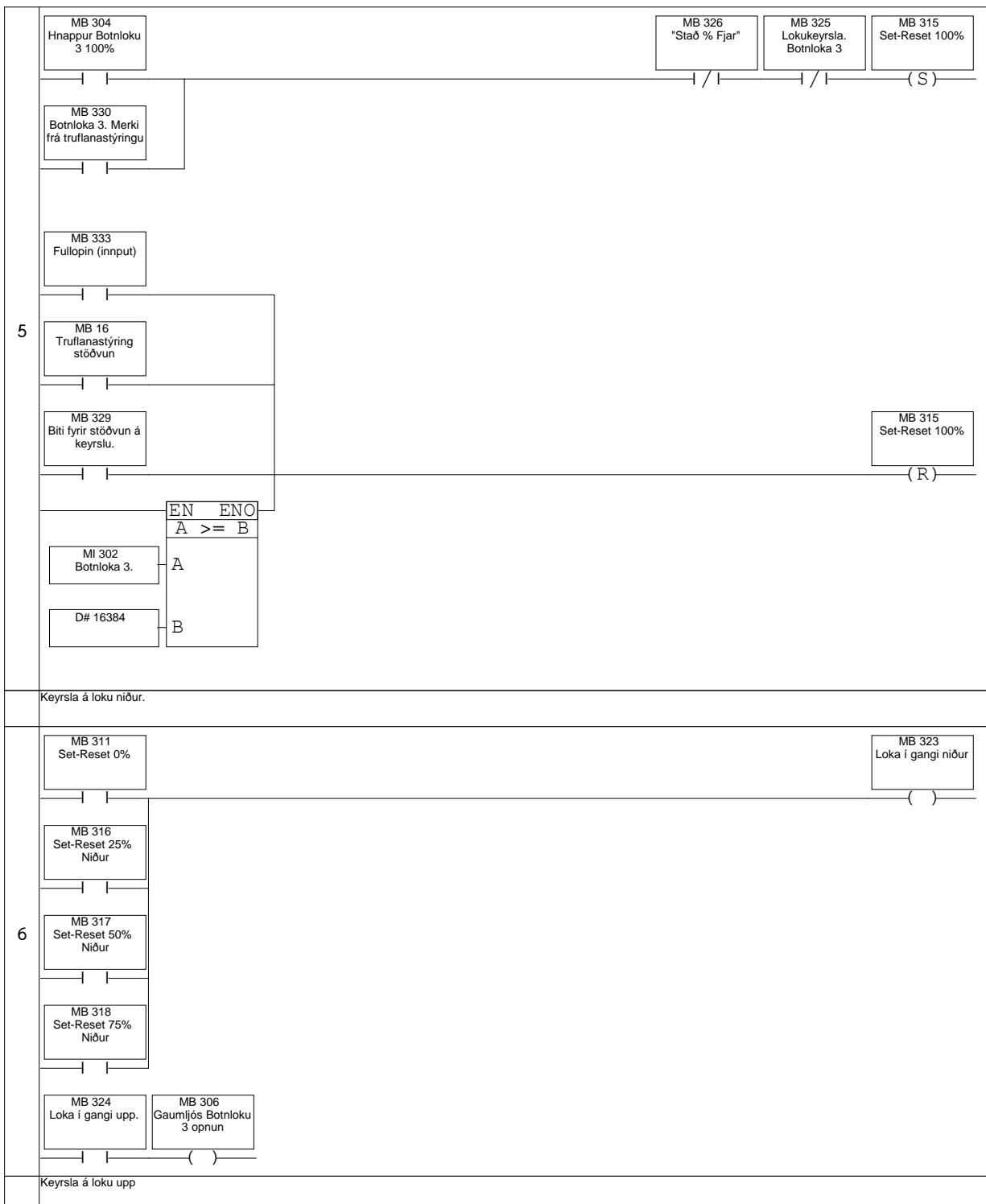


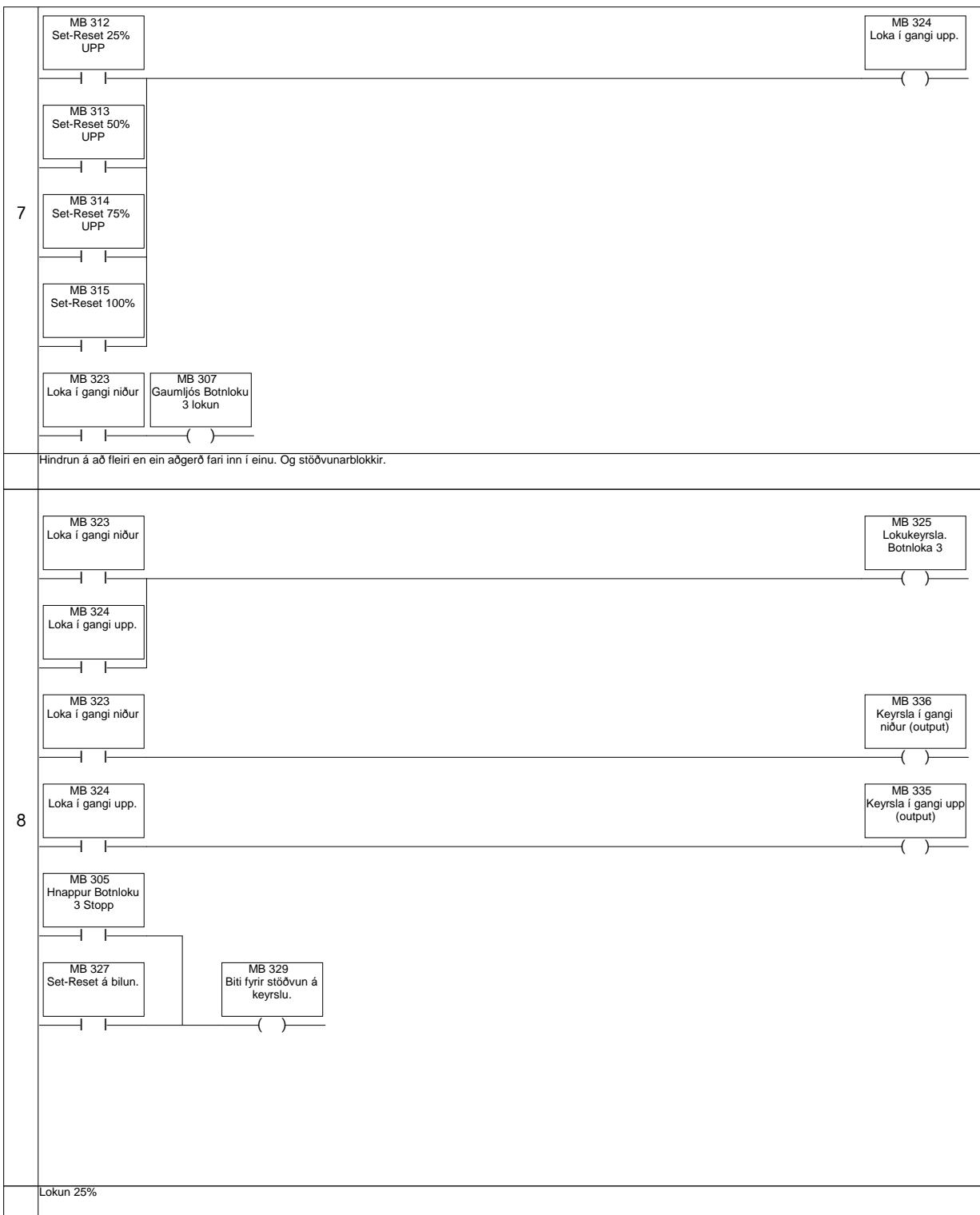
Fyrir truflanastýringu.

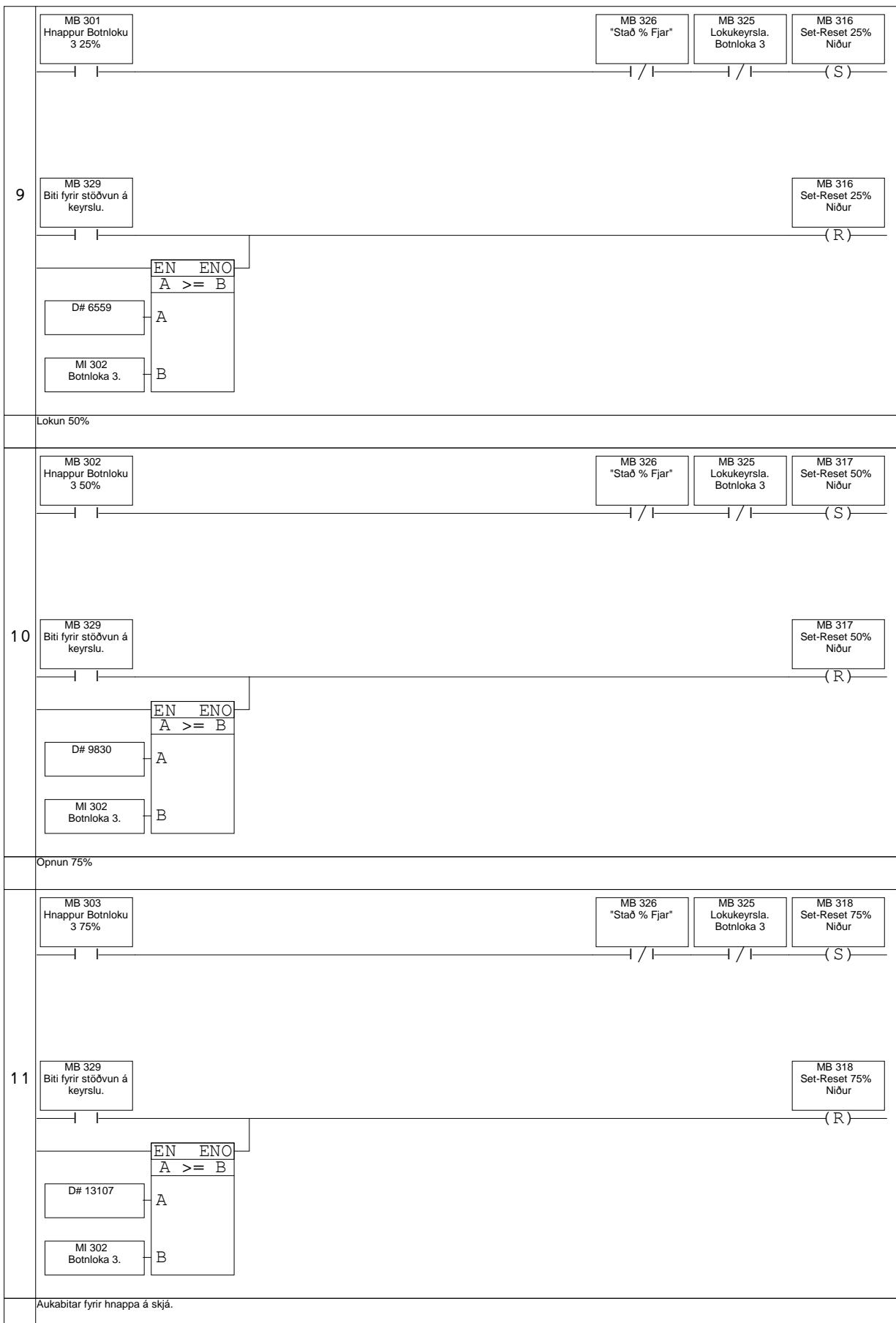
14	<p>TD 41 [00:00:03.00] Tímalíði fyrir analogmælingu</p>	<p>MB 227 Set-Reset á bilun.</p>
Stað og fjarstýringu. Safnviðvaranir fyrir bilun.		
15	<p>MB 237 "Stað % Fjar" (innput)</p>	<p>MB 226 "Stað % Fjar"</p>
15	<p>MB 227 Set-Reset á bilun.</p>	<p>MB 231 Safnviðvörun Bilun.B2</p>
15	<p>MB 232 Bilanir frá 400V skáp.</p>	<p>MB 232 Bilanir frá 400V skáp.</p>
17	<p>RET</p>	<p>RET</p>

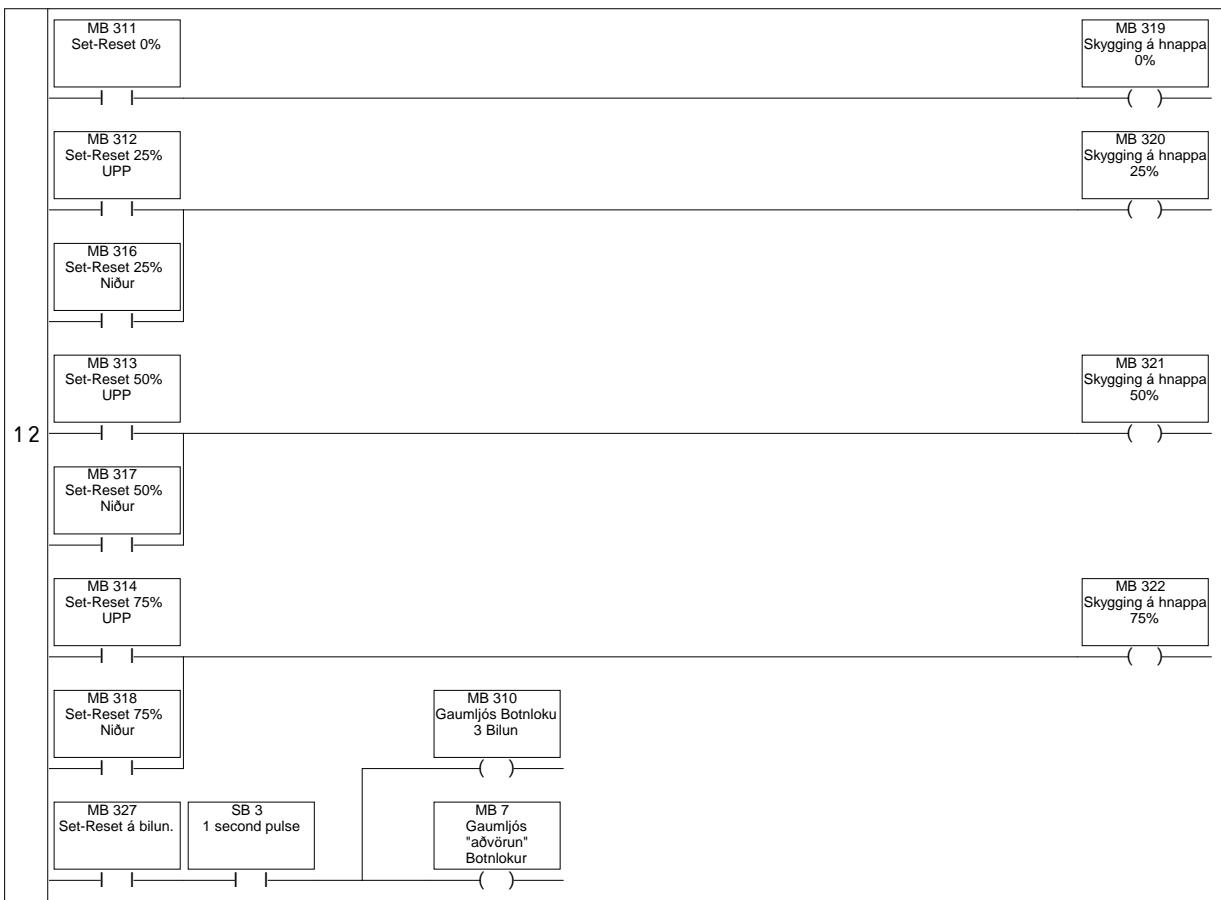




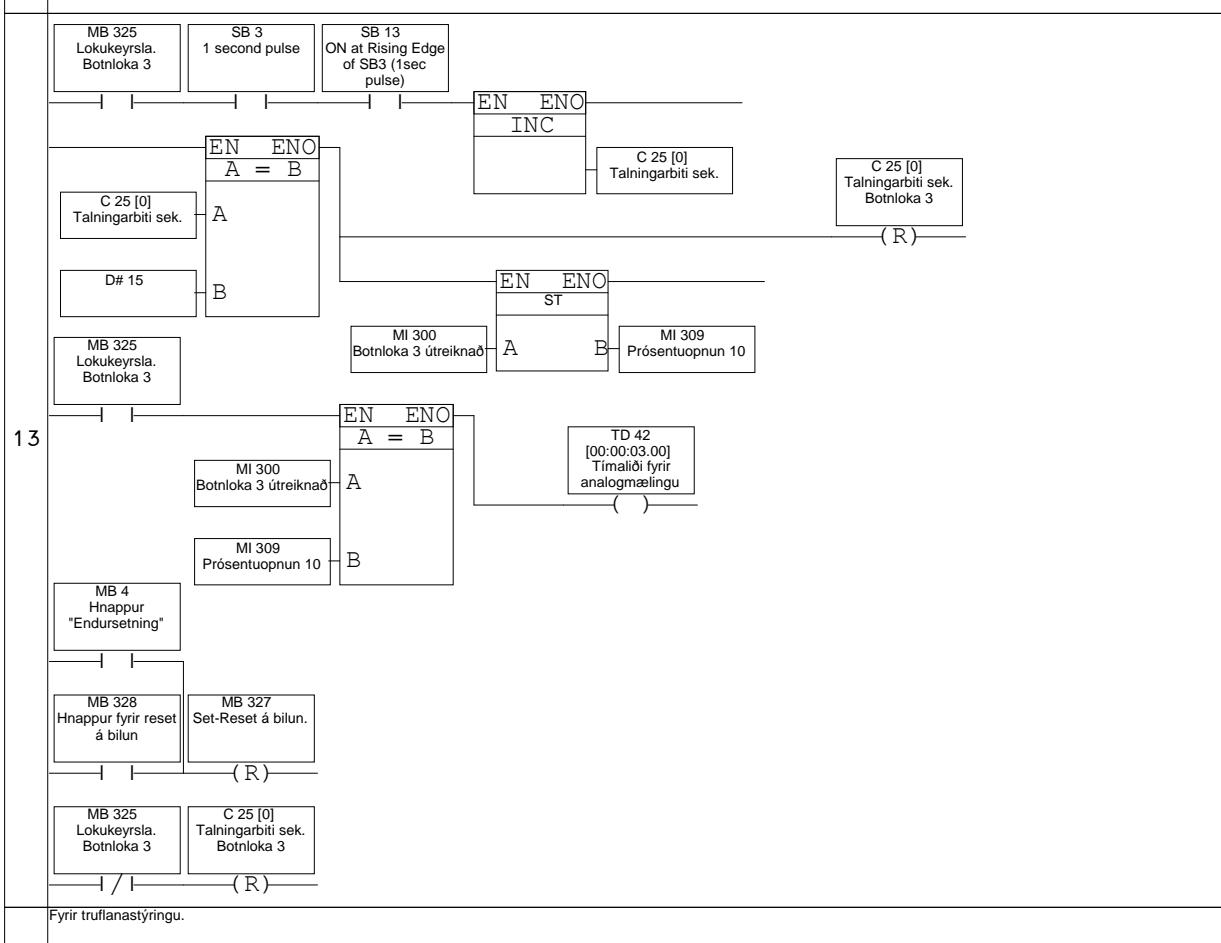






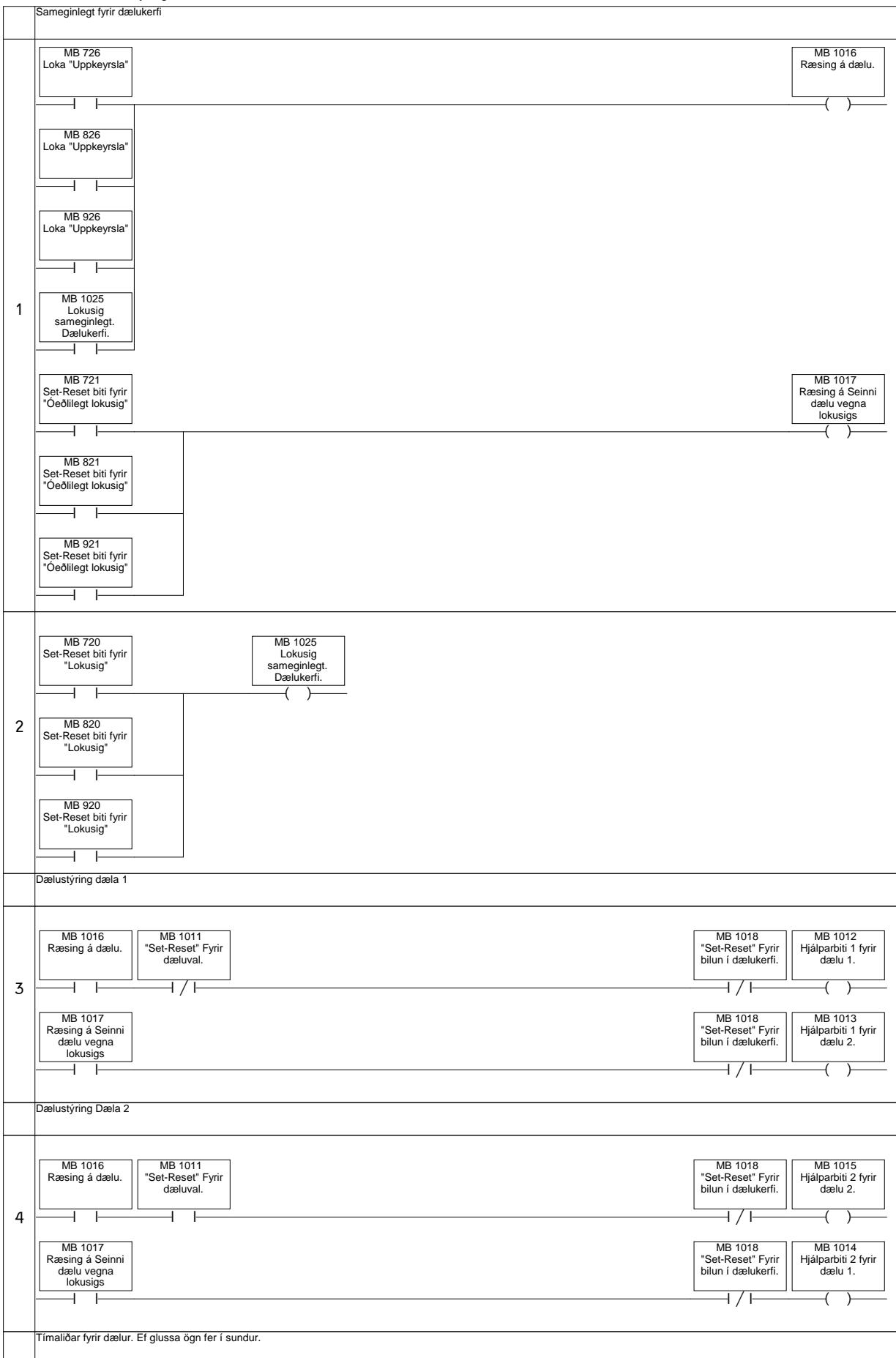


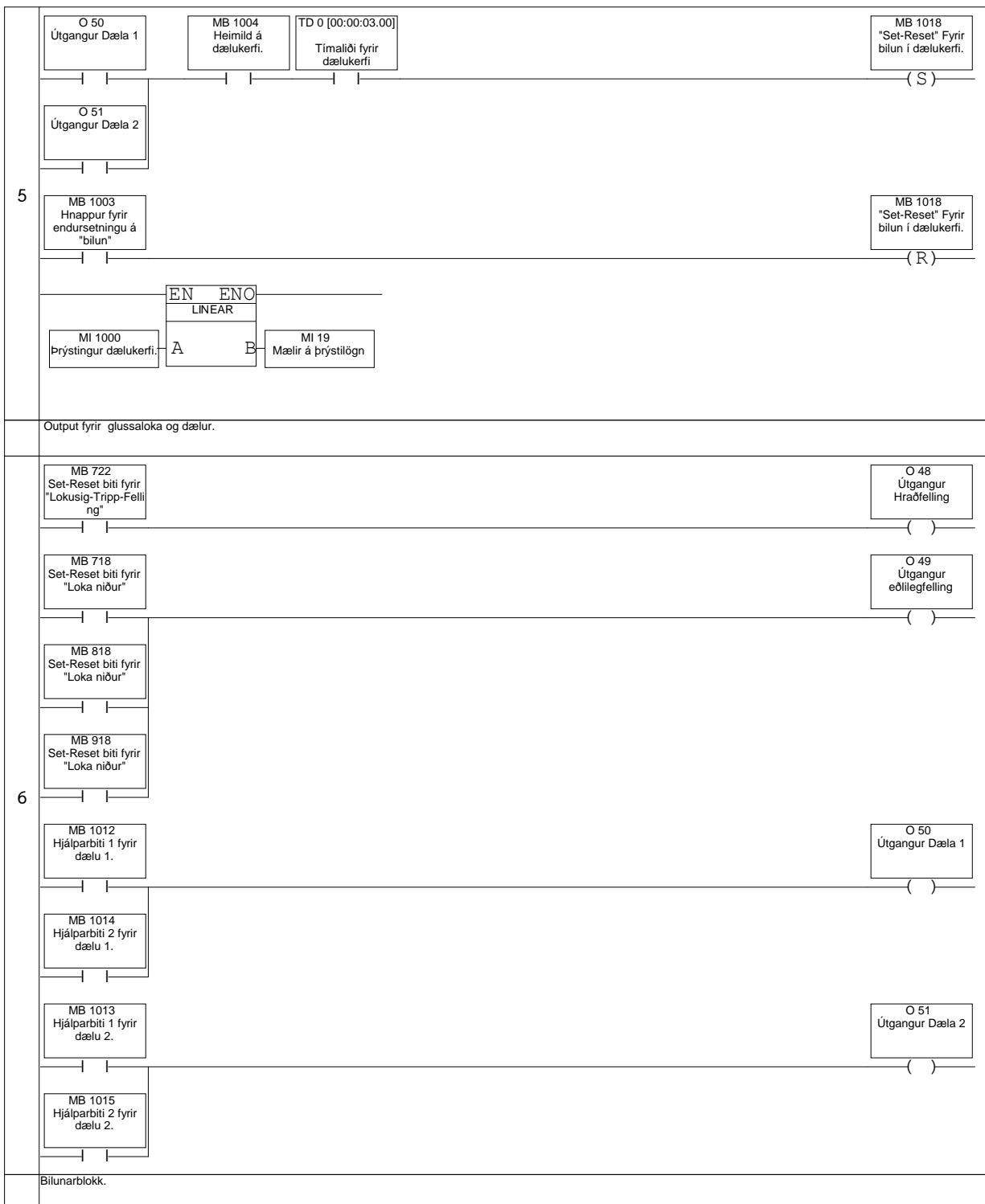
Fyrir viðvörun um bilaða analogskynjun.

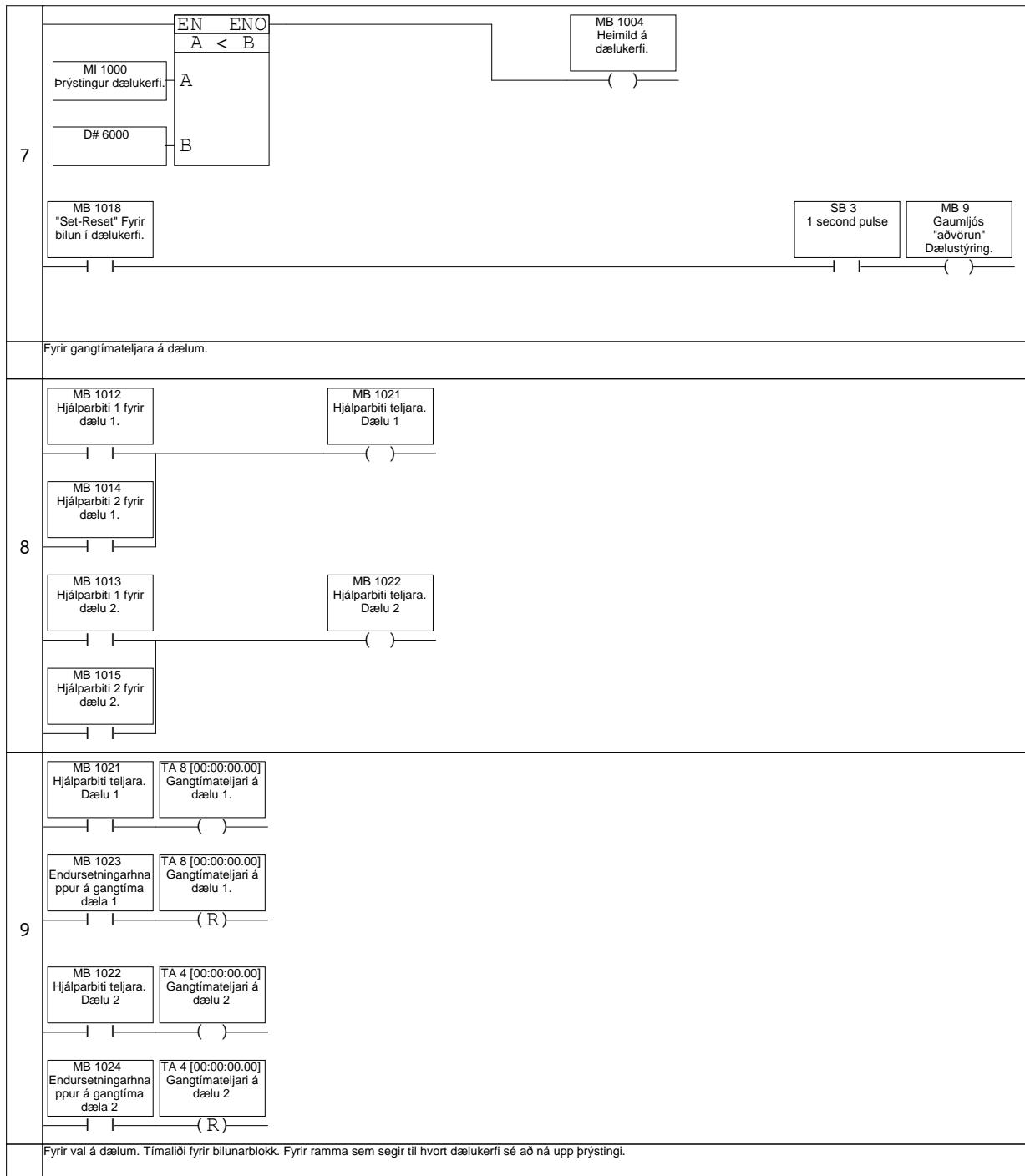


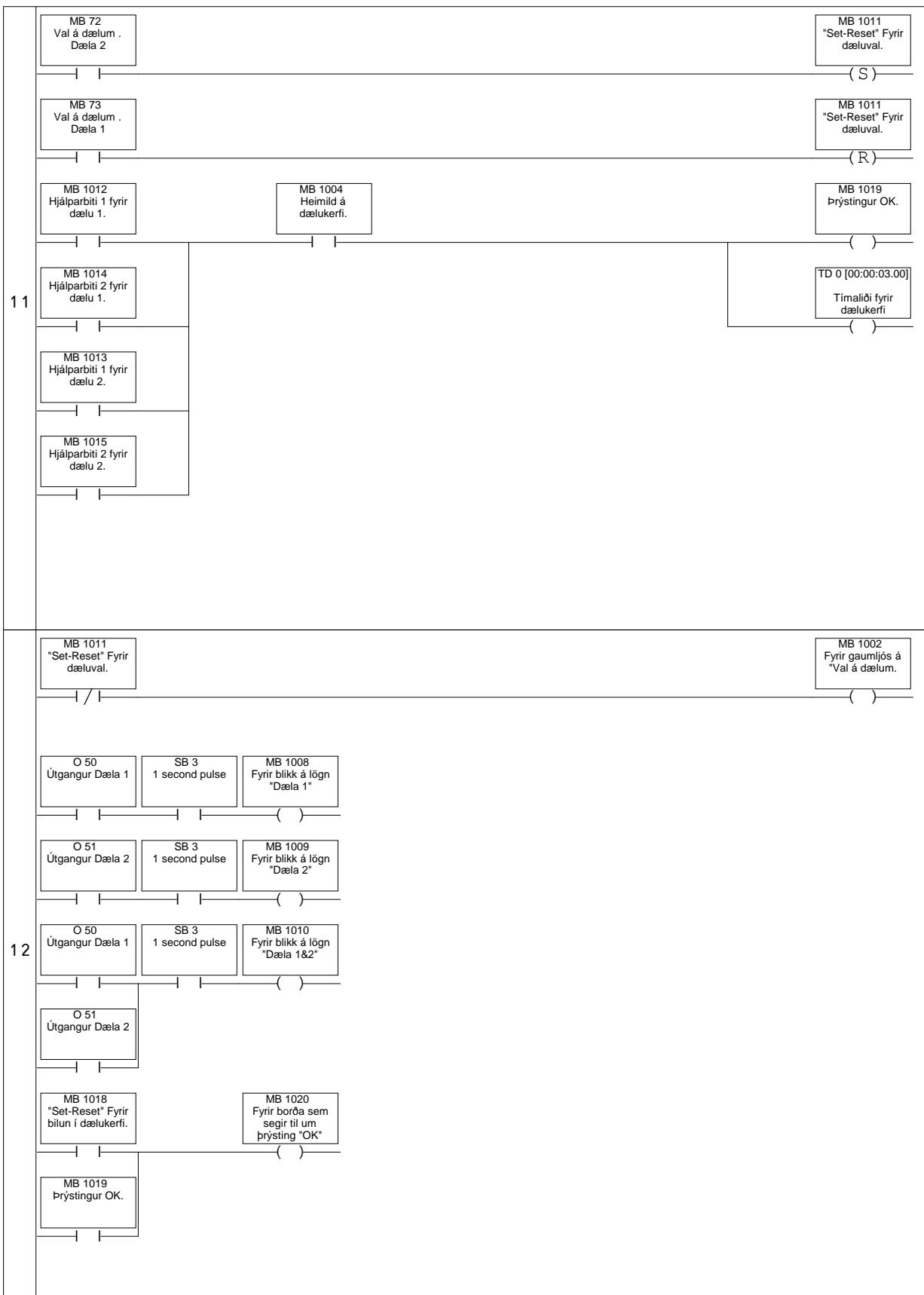
Fyrir truflanastýringu.

14	<p>TD 42 [00:00:03.00] Tímalíði fyrir analogmælingu</p> <p>MB 327 Set-Reset á bilun.</p> <p>(S)</p>
	Stað og fjarstýringu. Safnviðvaranir fyrir bilun.
15	<p>MB 337 "Stað % Fjar" (innput)</p> <p>MB 326 "Stað % Fjar"</p> <p>()</p> <p>MB 327 Set-Reset á bilun.</p> <p>MB 331 Safnviðvörun Bilun.B3</p> <p>()</p> <p>MB 332 Bilanir frá 400V skáp.</p> <p>()</p>
17	<p>RET</p>

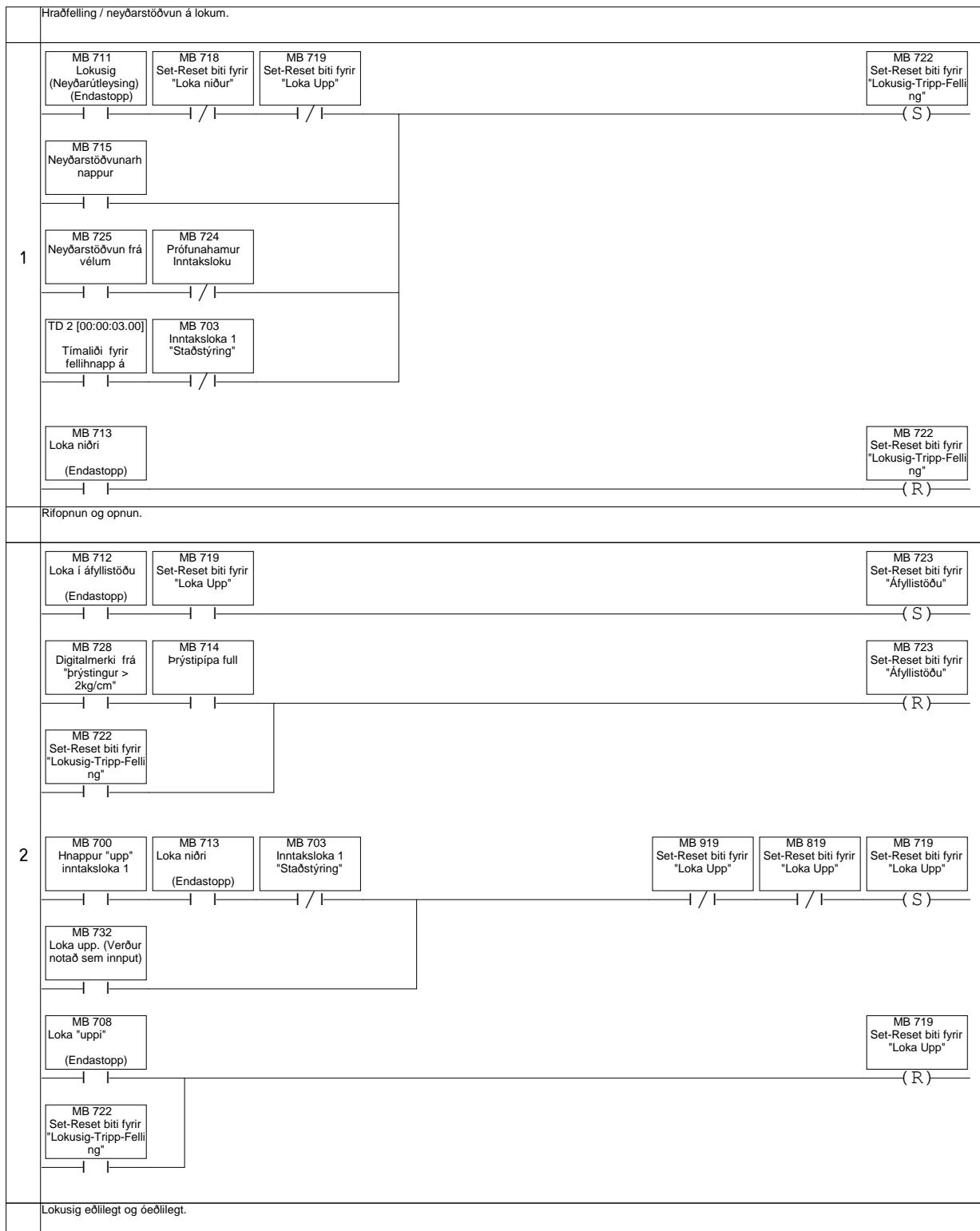


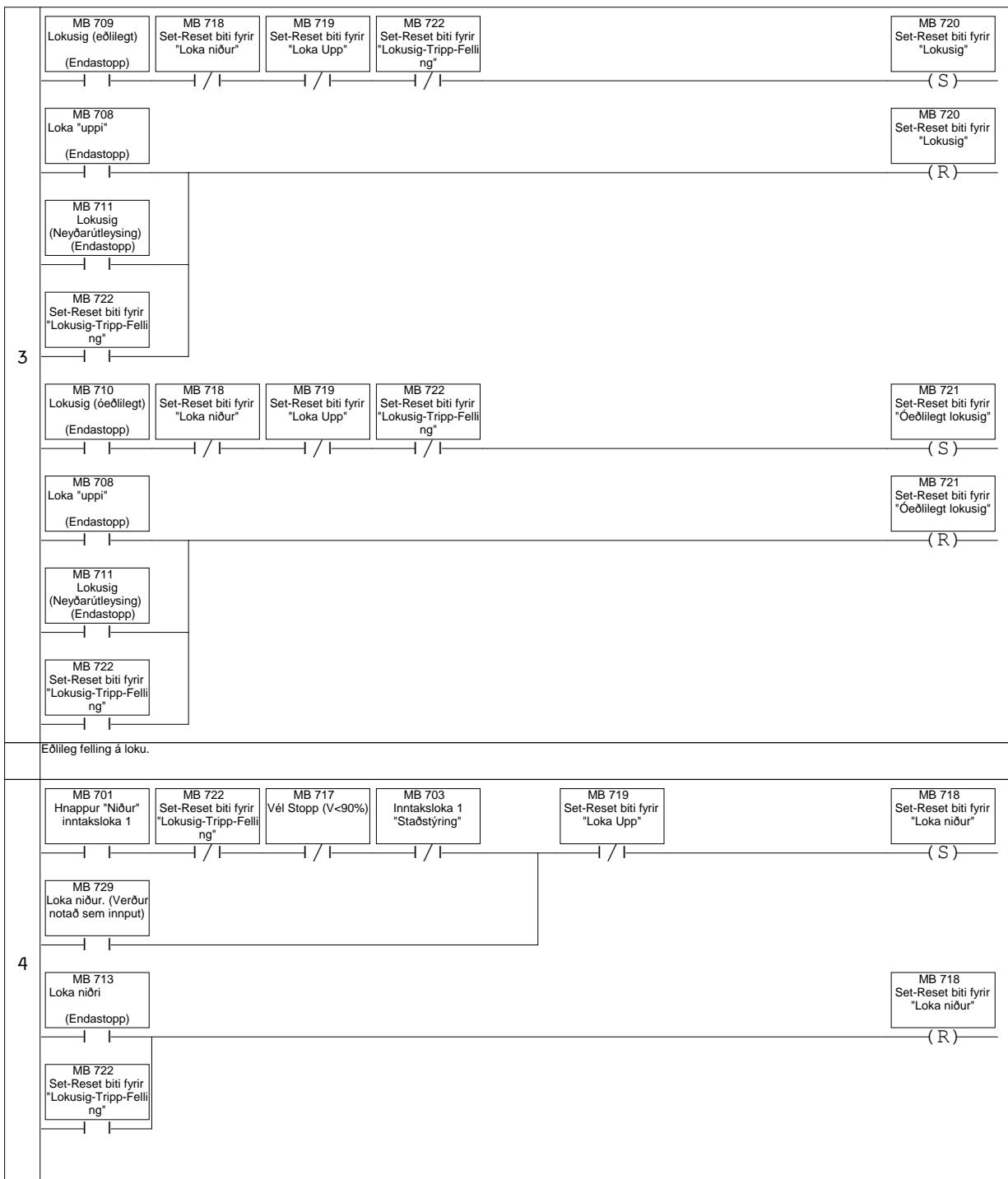


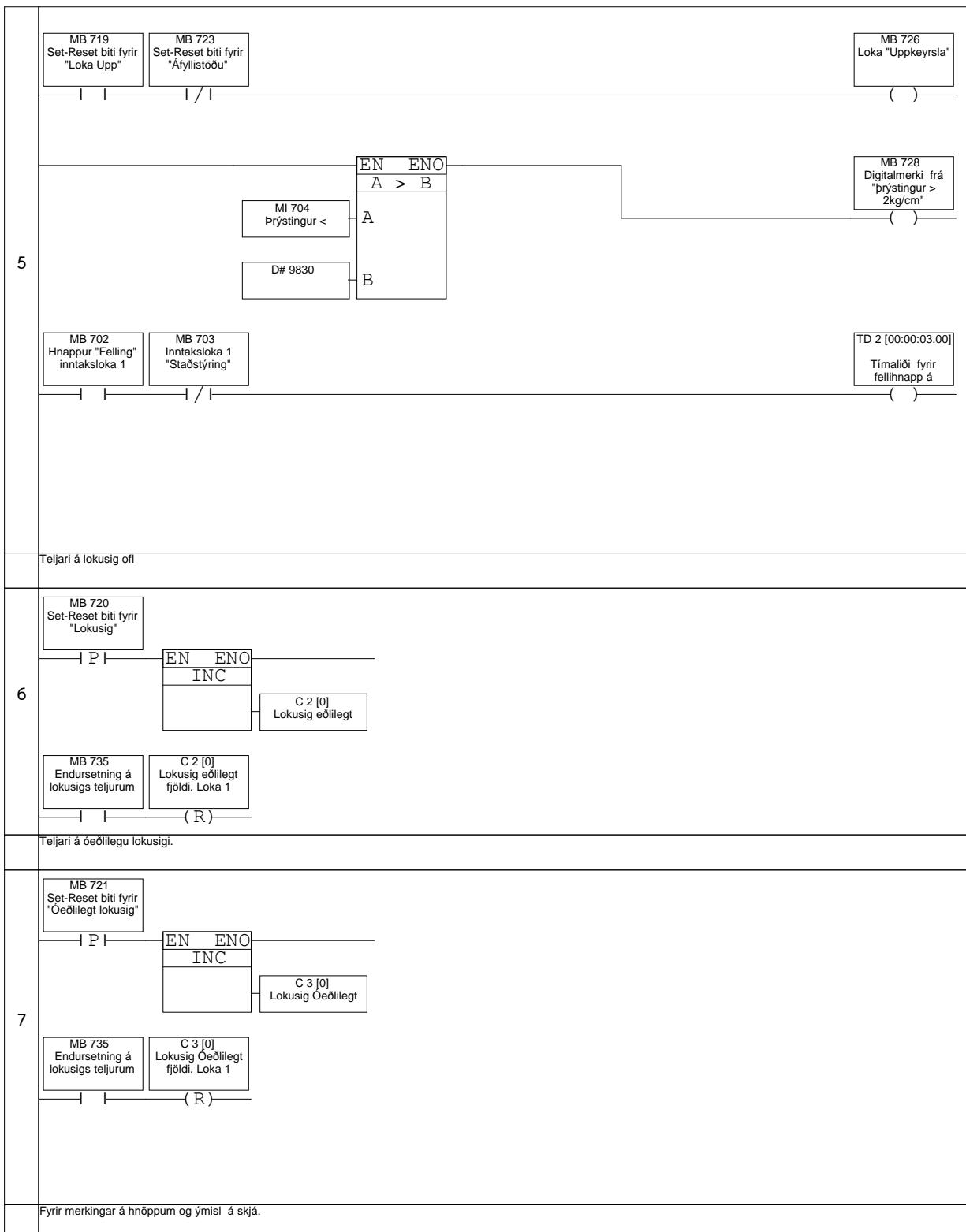


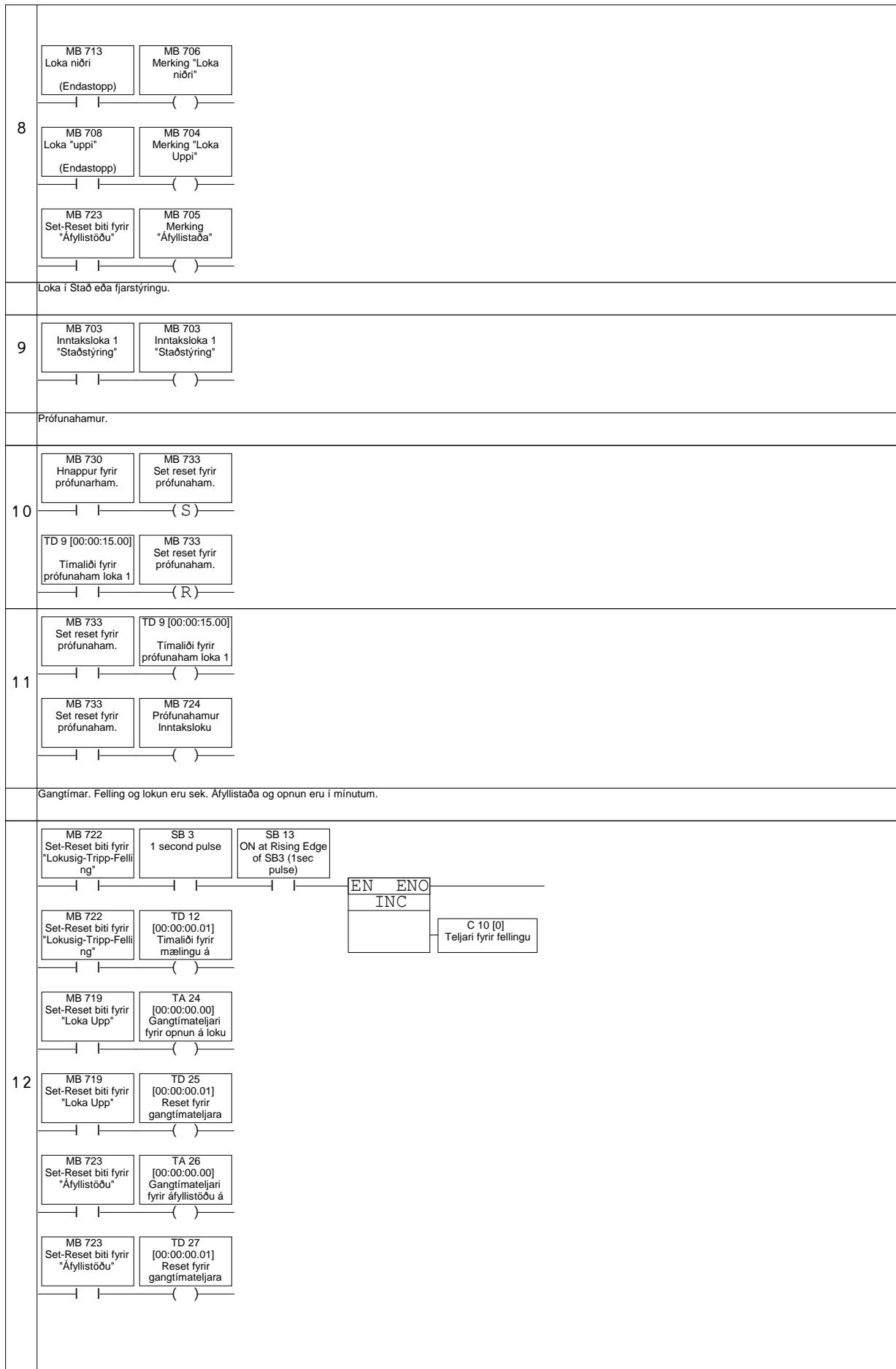


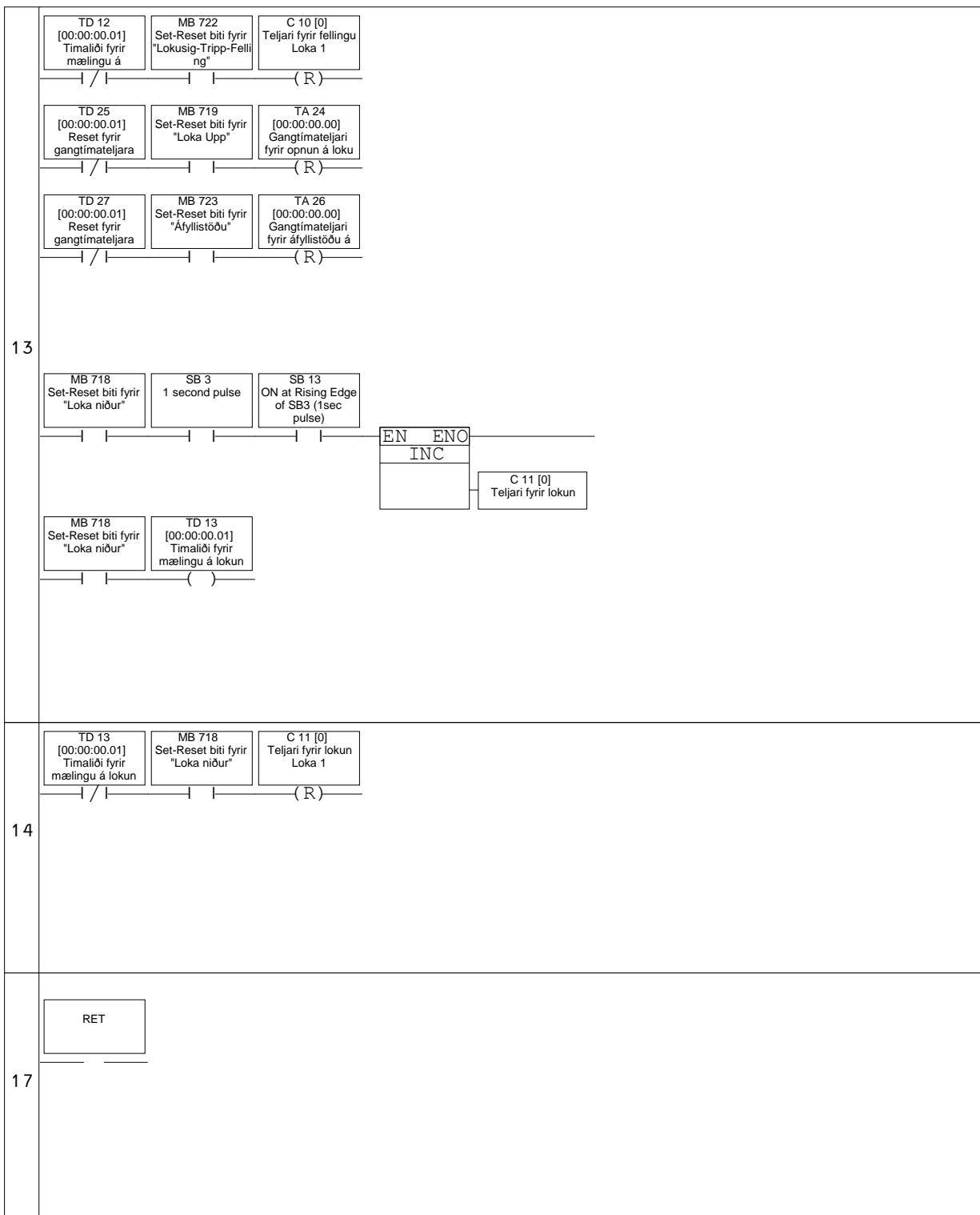
	<p>RET</p>
18	

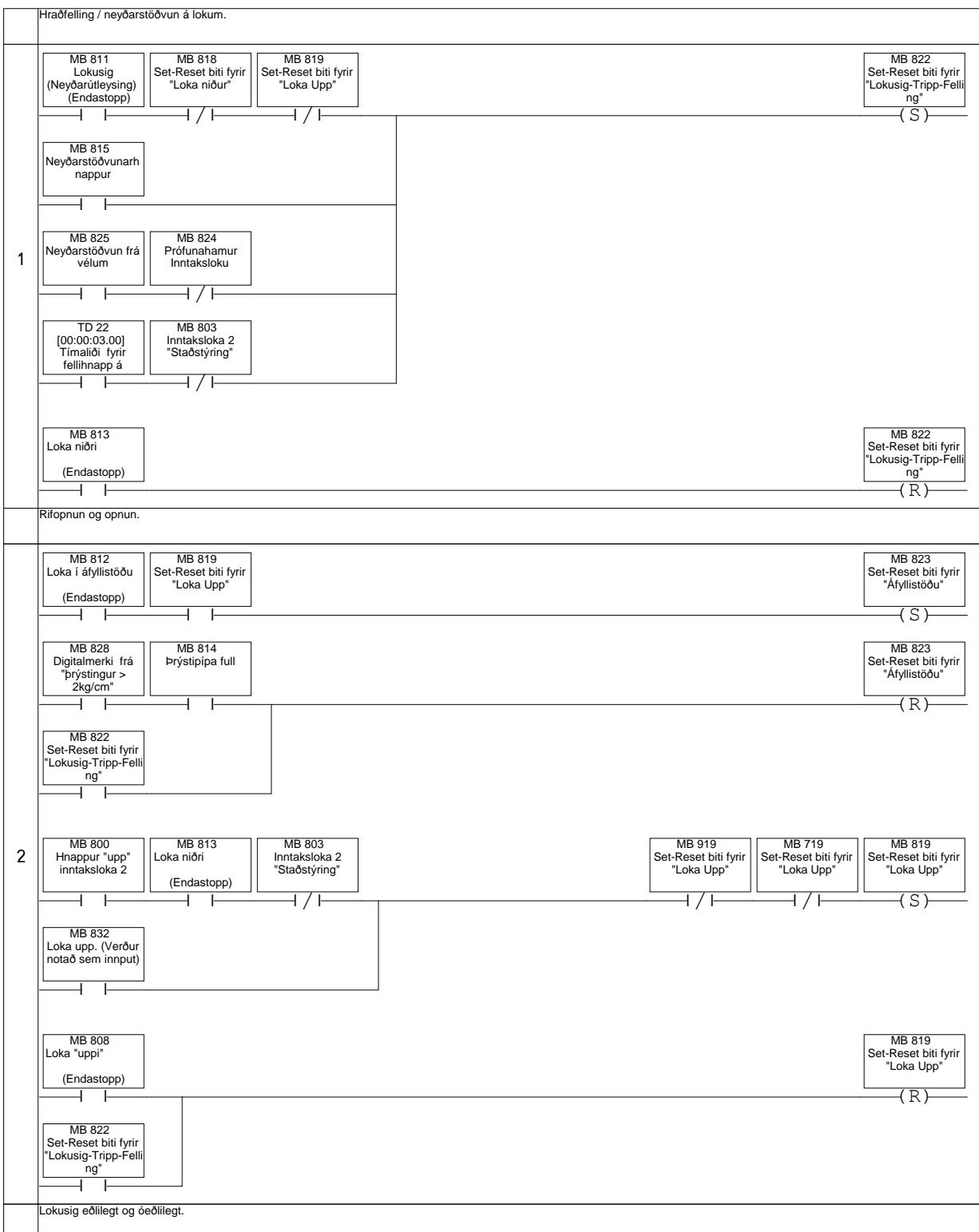


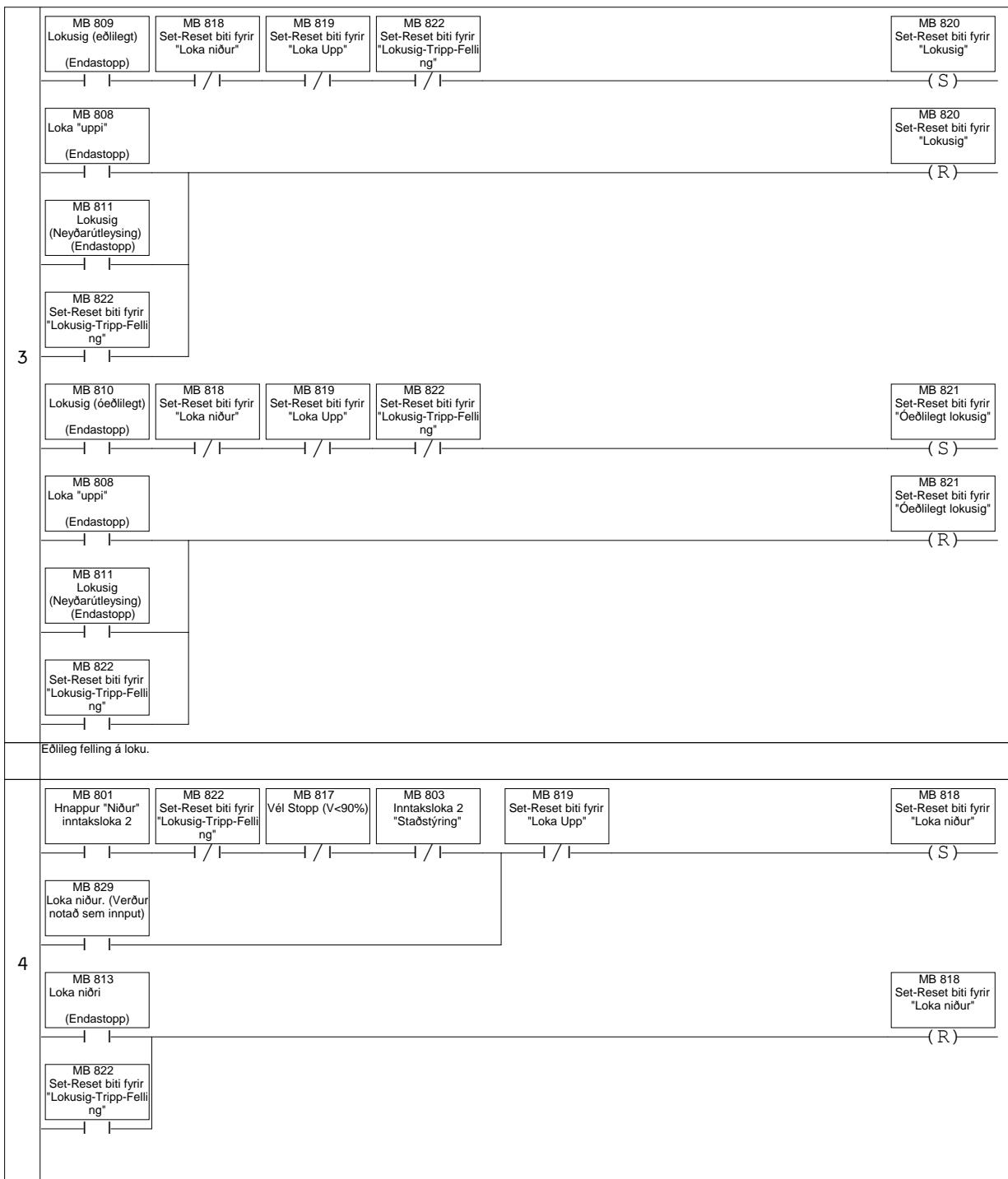


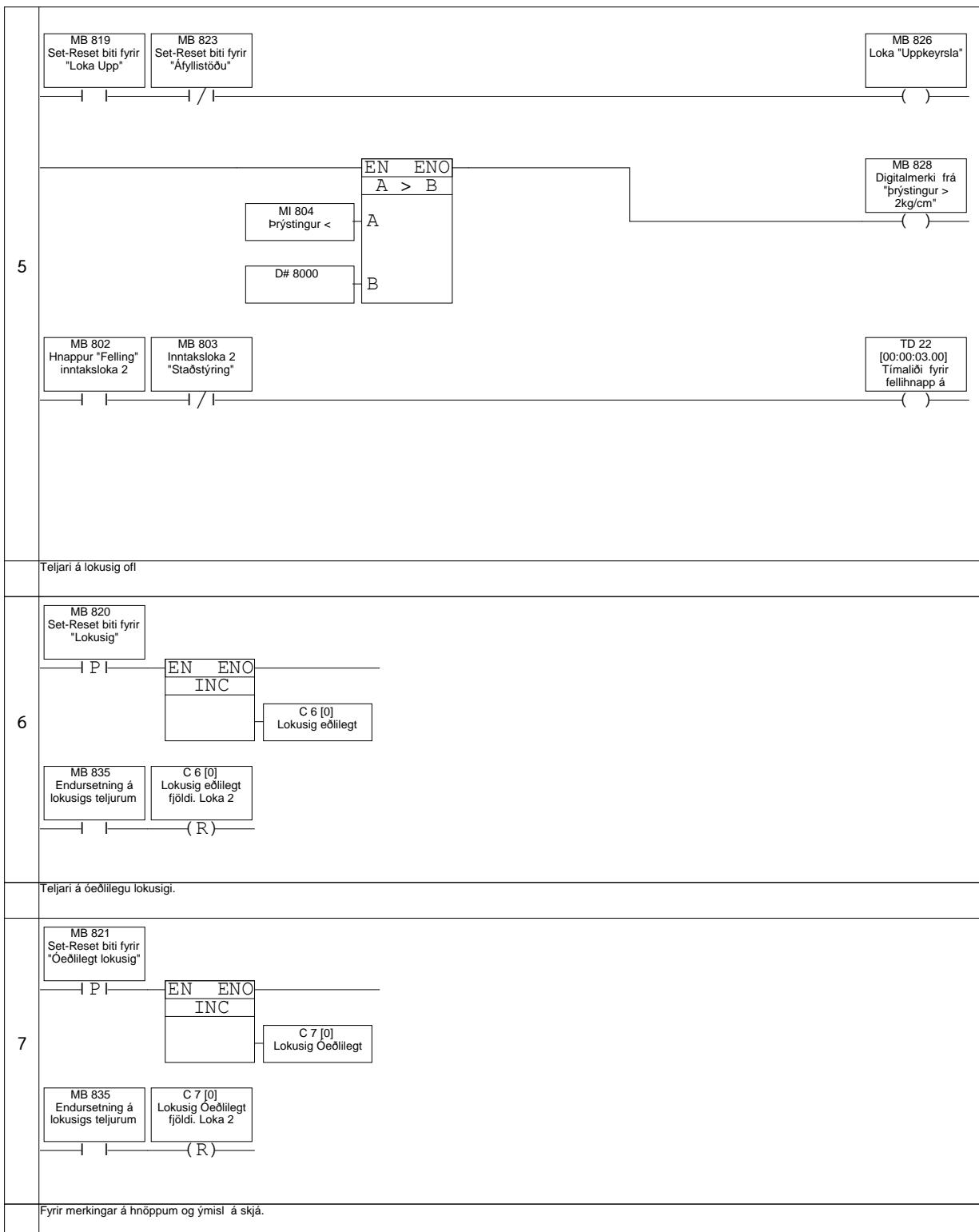




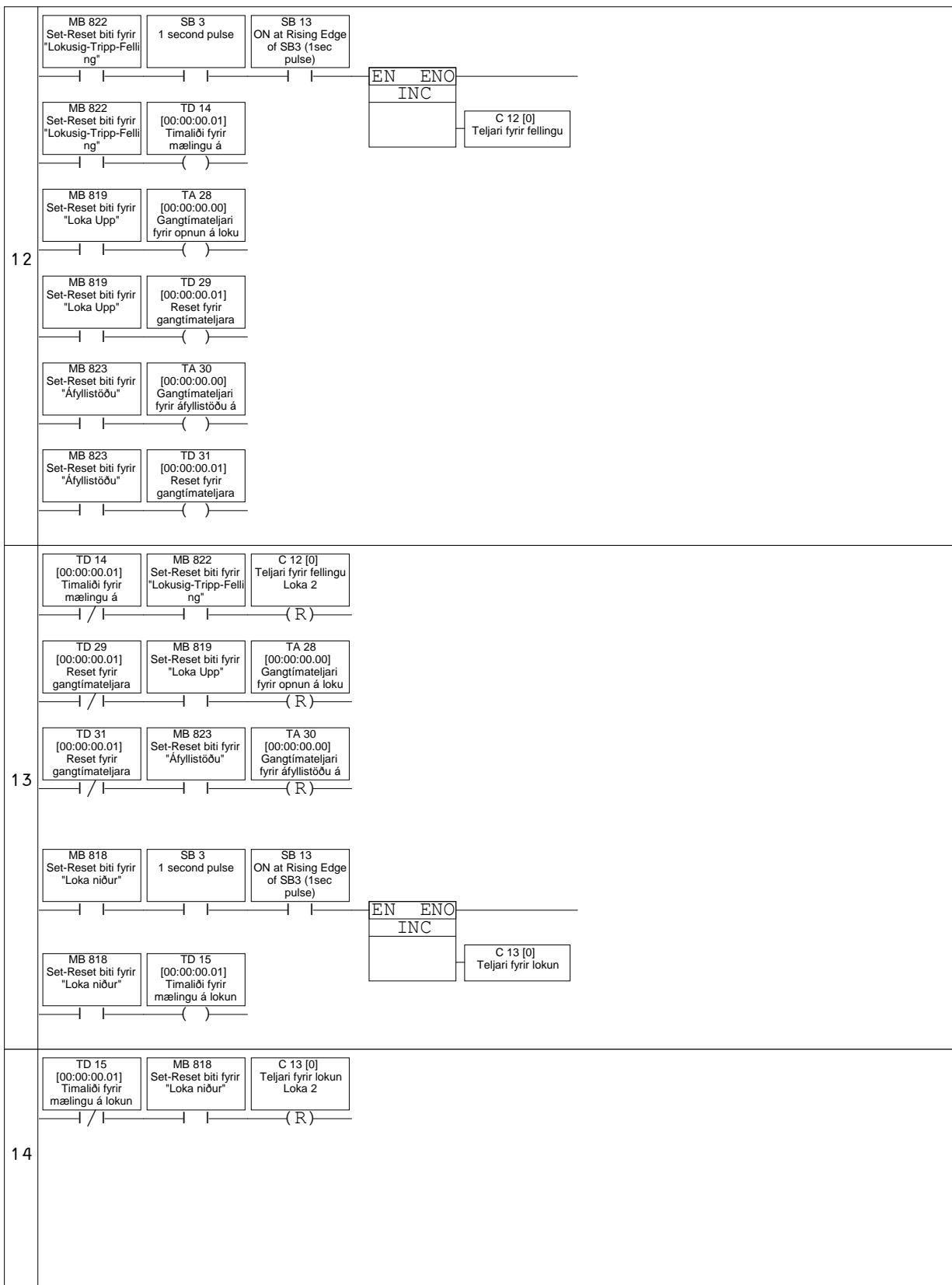




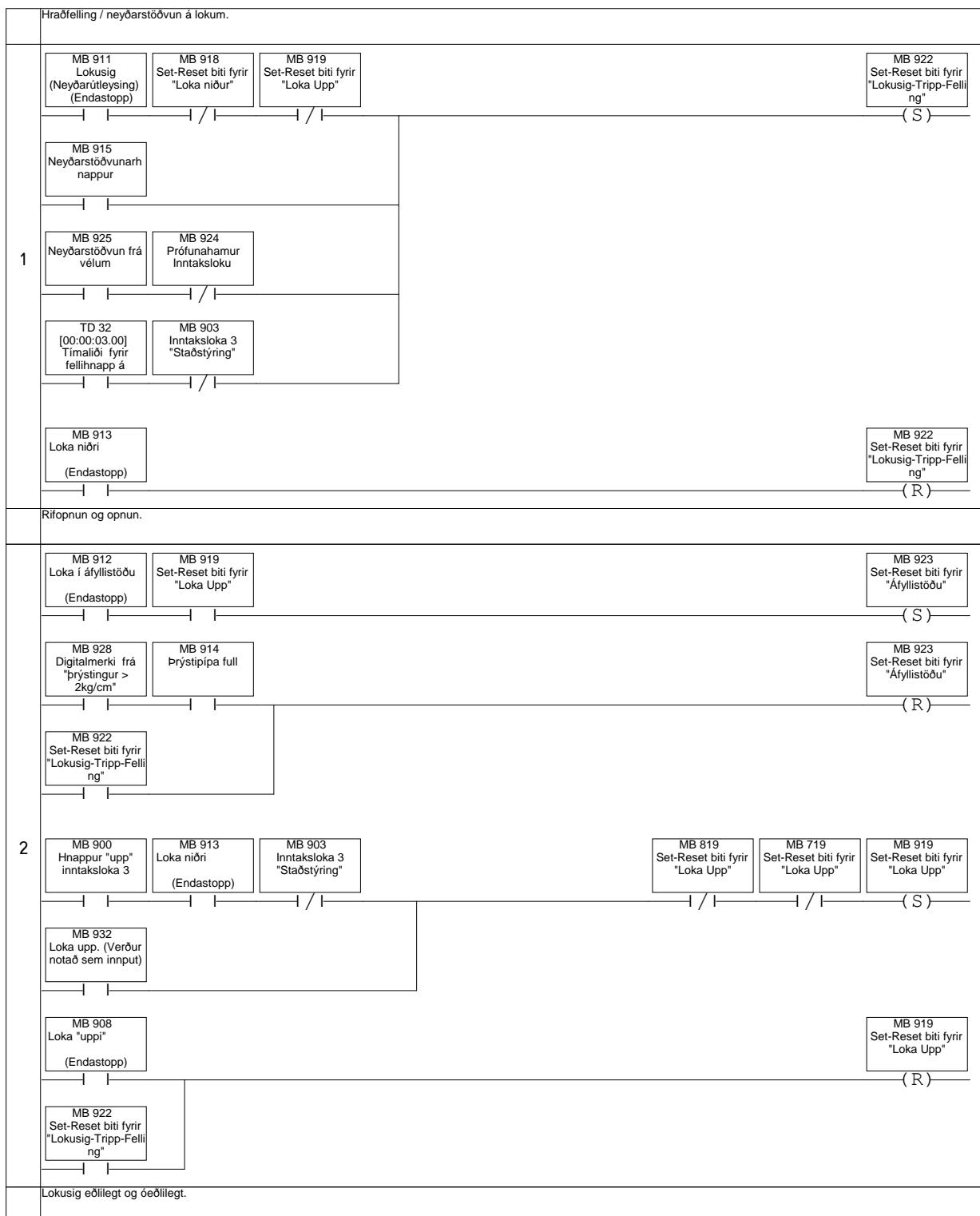


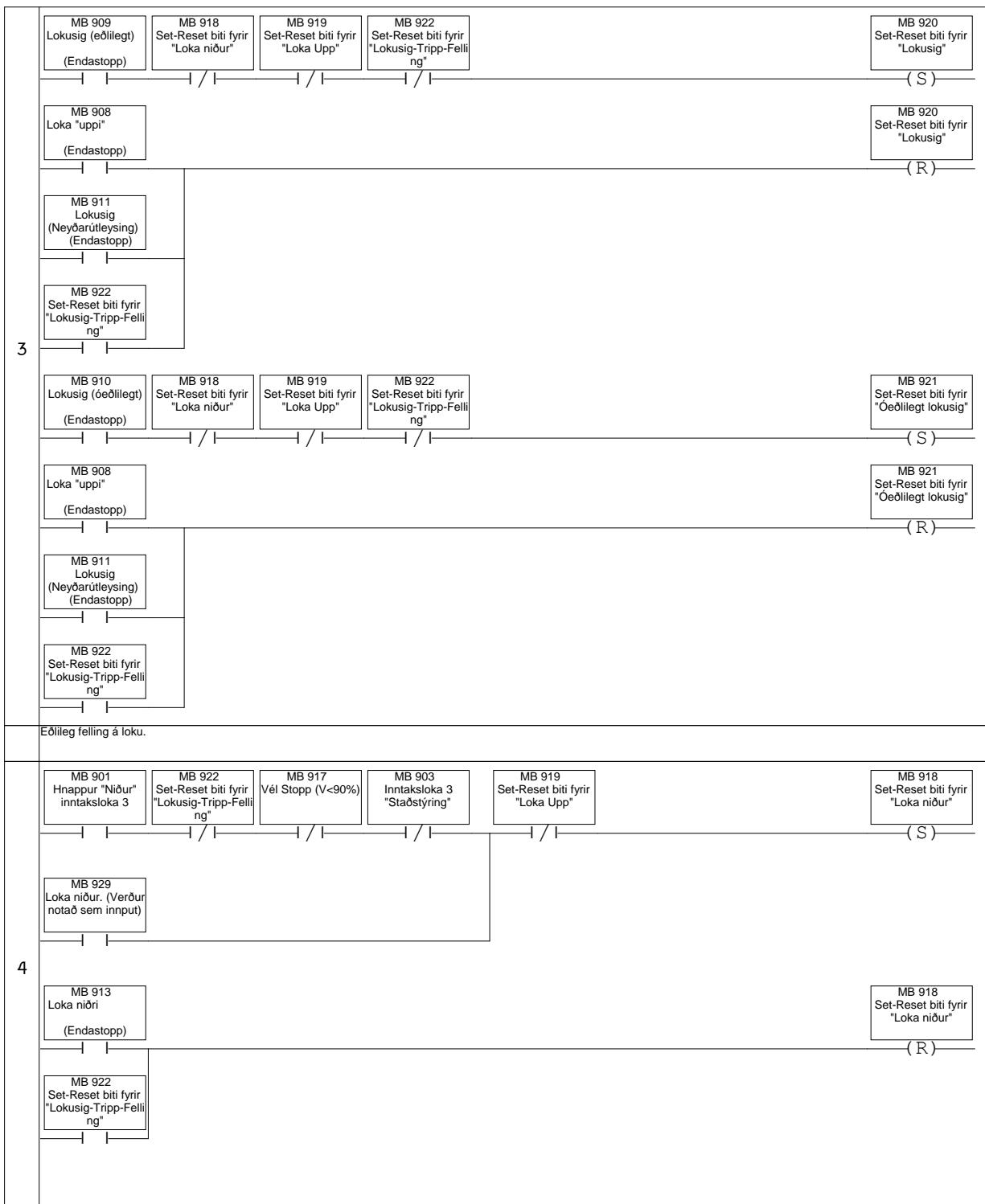


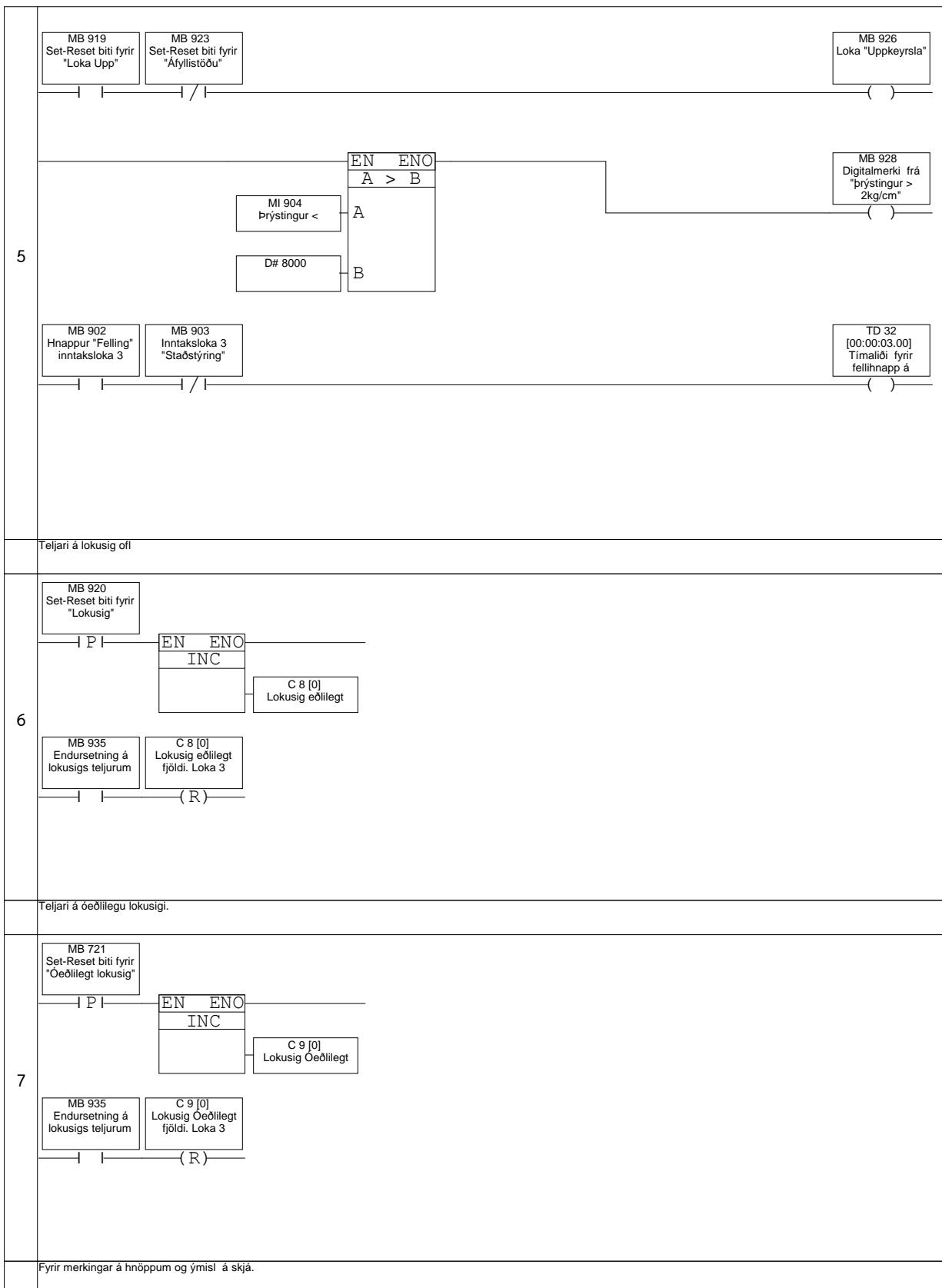
		MB 813 Loka niðri (Endastopp)	MB 806 Merking "Loka niðri"
8		MB 808 Loka "uppi" (Endastopp)	MB 804 Merking "Loka Uppi"
		MB 723 Set-Reset biti fyrir "Áfyllistöðu"	MB 805 Merking "Afyllistaða"
Loka í Stað eða fjarstýringu.			
		MB 803 Inntaksloka 2 "Staðstýring"	MB 803 Inntaksloka 2 "Staðstýring"
9			()
Prófunarhamur			
		MB 830 Hnappur fyrir prófunarham.	MB 833 Set reset fyrir prófunaham.
10		TD 10 [00:00:15.00] Tímalöði fyrir prófunaham loka 2	(S)
		MB 833 Set reset fyrir prófunaham.	(R)
		MB 833 Set reset fyrir prófunaham.	TD 10 [00:00:15.00] Tímalöði fyrir prófunaham loka 2
11		MB 833 Set reset fyrir prófunaham.	MB 824 Prófunahamur Inntaksloku
		Gangtímar. Felling og lokun eru sek. Afyllistaða og opnum eru í mínutum.	

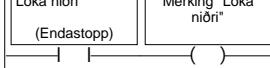
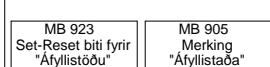
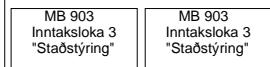
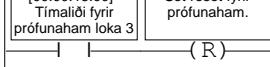
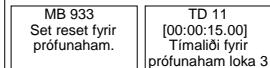


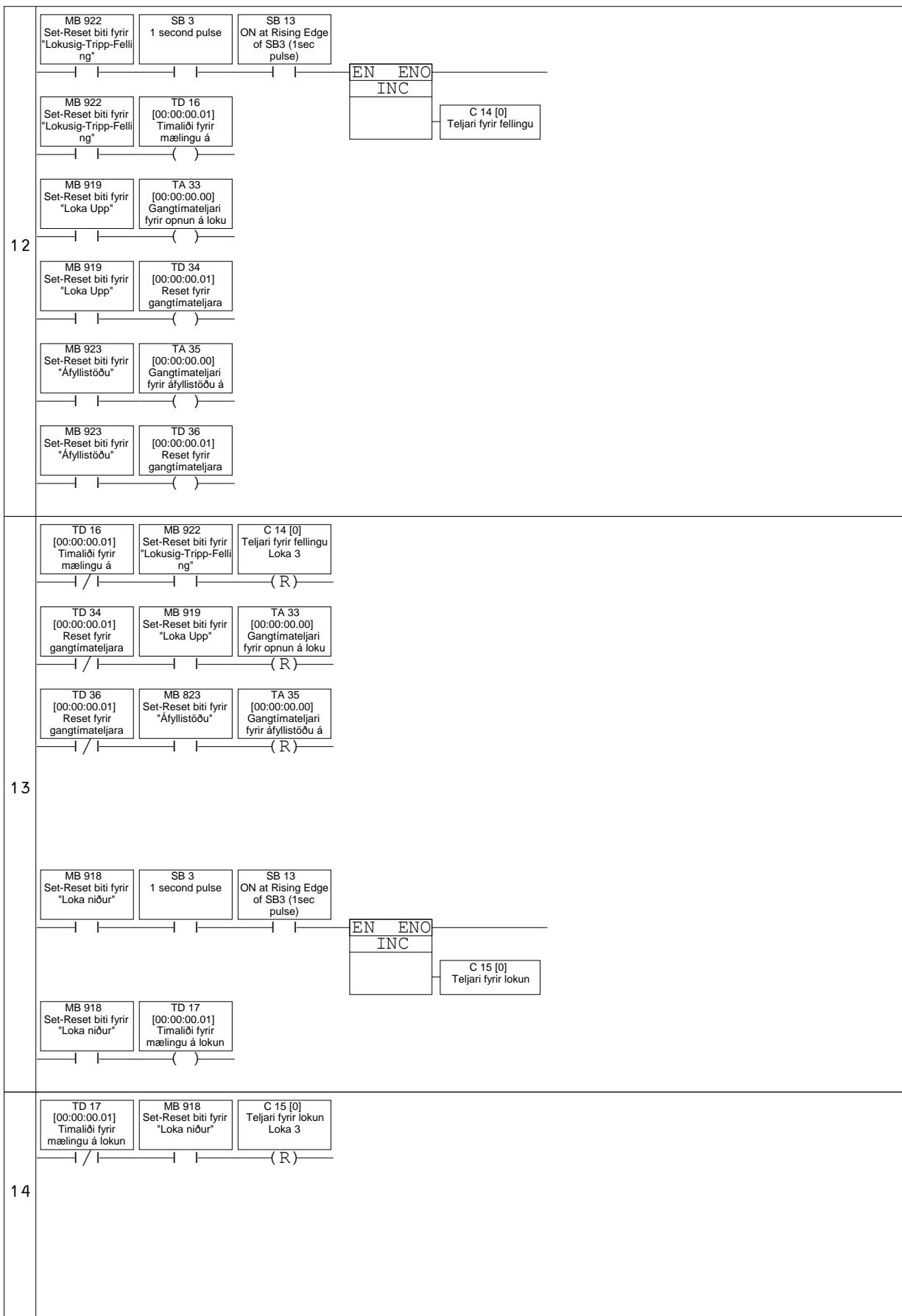
	<p>RET</p>
17	







8	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px;">MB 913 Loka niðri (Endastopp)</div> <div style="border: 1px solid black; padding: 5px;">MB 906 Merking "Loka niðri"</div> </div> 	
	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px;">MB 908 Loka "uppi" (Endastopp)</div> <div style="border: 1px solid black; padding: 5px;">MB 904 Merking "Loka Uppi"</div> </div> 	
	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px;">MB 923 Set-Reset biti fyrir "Áfyllistöðu"</div> <div style="border: 1px solid black; padding: 5px;">MB 905 Merking "Afyllistaða"</div> </div> 	
	Loka í Stað eða fjarstýringu.	
9	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px;">MB 903 Inntaksloka 3 "Staðstýring"</div> <div style="border: 1px solid black; padding: 5px;">MB 903 Inntaksloka 3 "Staðstýring"</div> </div> 	
	Prófunarhamur.	
10	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px;">MB 930 Hnappur fyrir prófunarham.</div> <div style="border: 1px solid black; padding: 5px;">MB 933 Set reset fyrir prófunaham.</div> </div> 	
	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px;">TD 11 [00:00:15.00] Tímalöði fyrir prófunaham loka 3</div> <div style="border: 1px solid black; padding: 5px;">MB 933 Set reset fyrir prófunaham.</div> </div> 	
	(S)	(R)
11	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px;">MB 933 Set reset fyrir prófunaham.</div> <div style="border: 1px solid black; padding: 5px;">TD 11 [00:00:15.00] Tímalöði fyrir prófunaham loka 3</div> </div> 	
	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px;">MB 933 Set reset fyrir prófunaham.</div> <div style="border: 1px solid black; padding: 5px;">MB 924 Prófunahamur Inntaksloku</div> </div> 	
	Gangtímar. Felling og lokun eru sek. Afyllistaða og opnum eru í mínutum.	



	<p>RET</p>
17	

Element :Linear

Module: ! Main Module

Subroutine: Aflestur og sameginlegt

Net: 5

Params	Func	Operand	Address	PowerUp	Format	Description
IN	X1	D#		3276	DEC	Linear conversion: X1 Value
	Y1	D#		0	DEC	
	X2	D#		16384	DEC	Linear conversion: X2 Value
	Y2	D#		16	DEC	
	X	MI	2		DEC	Hæð inntaksloku 1
OUT	Y	MI	21		DEC	MW mæling vél 1

Element :Linear

Module: ! Main Module

Subroutine: Aflestur og sameginlegt

Net: 5

Params	Func	Operand	Address	PowerUp	Format	Description
IN	X1	D#		3276	DEC	Linear conversion: X1 Value
	Y1	D#		0	DEC	
	X2	D#		16384	DEC	Linear conversion: X2 Value
	Y2	D#		16	DEC	
	X	MI	2		DEC	Hæð inntaksloku 1
OUT	Y	MI	22		DEC	MW mæling vél 2

Element :Linear

Module: ! Main Module

Subroutine: Aflestur og sameginlegt

Net: 5

Params	Func	Operand	Address	PowerUp	Format	Description
IN	X1	D#		3276	DEC	Linear conversion: X1 Value
	Y1	D#		0	DEC	
	X2	D#		16384	DEC	Linear conversion: X2 Value
	Y2	D#		19	DEC	
	X	MI	2		DEC	Hæð inntaksloku 1
OUT	Y	MI	23		DEC	MW mæling vél 3

Element :Linear

Module: ! Main Module

Subroutine: Aflestur og sameginlegt

Net: 7

Params	Func	Operand	Address	PowerUp	Format	Description
IN	X1	D#		3276	DEC	Linear conversion: X1 Value
	Y1	D#		0	DEC	Linear conversion: Y1 Value
	X2	D#		16384	DEC	Linear conversion: X2 Value
	Y2	D#		100	DEC	Linear conversion: Y2 Value
	X	MI	102		DEC	Botnloka 1. Staðsetning.
OUT	Y	MI	100		DEC	Botnloka 1 útreiknað %

Element :Linear

Module: ! Main Module

Subroutine: Aflestur og sameginlegt

Net: 7

Params	Func	Operand	Address	PowerUp	Format	Description
IN	X1	D#		3276	DEC	Linear conversion: X1 Value
	Y1	D#		0	DEC	Linear conversion: Y1 Value
	X2	D#		16384	DEC	Linear conversion: X2 Value
	Y2	D#		100	DEC	Linear conversion: Y2 Value
	X	MI	202		DEC	Botnloka 2. Staðsetning.
OUT	Y	MI	200		DEC	Botnloka 2 útreiknað %

Element :Linear

Module: ! Main Module

Subroutine: Aflestur og sameginlegt

Net: 7

Params	Func	Operand	Address	PowerUp	Format	Description
IN	X1	D#		3276	DEC	Linear conversion: X1 Value
	Y1	D#		0	DEC	Linear conversion: Y1 Value
	X2	D#		16384	DEC	Linear conversion: X2 Value
	Y2	D#		100	DEC	Linear conversion: Y2 Value
	X	MI	302		DEC	Botnloka 3. Staðsetning.
OUT	Y	MI	300		DEC	Botnloka 3 útreiknað %

Element :Linear

Module: ! Main Module

Subroutine: Aflestur og sameginlegt

Net: 8

Params	Func	Operand	Address	PowerUp	Format	Description
IN	X1	D#		3276	DEC	Linear conversion: X1 Value
	Y1	D#		0	DEC	Linear conversion: Y1 Value
	X2	D#		16384	DEC	Linear conversion: X2 Value
	Y2	D#		100	DEC	Linear conversion: Y2 Value
	X	MI	402		DEC	Árloka 1. Staðsetning.
OUT	Y	MI	400		DEC	Árloka 1 útreiknað %

Element :Linear

Module: ! Main Module

Subroutine: Aflestur og sameginlegt

Net: 8

Params	Func	Operand	Address	PowerUp	Format	Description
IN	X1	D#		3276	DEC	Linear conversion: X1 Value
	Y1	D#		0	DEC	Linear conversion: Y1 Value
	X2	D#		16384	DEC	Linear conversion: X2 Value
	Y2	D#		100	DEC	Linear conversion: Y2 Value
	X	MI	502		DEC	Árloka 2. Staðsetning.
OUT	Y	MI	500		DEC	Árloka 2 útreiknað %

Element :Linear

Module: ! Main Module

Subroutine: Aflestur og sameginlegt

Net: 8

Params	Func	Operand	Address	PowerUp	Format	Description
IN	X1	D#		3276	DEC	Linear conversion: X1 Value
	Y1	D#		0	DEC	Linear conversion: Y1 Value
	X2	D#		16384	DEC	Linear conversion: X2 Value
	Y2	D#		100	DEC	Linear conversion: Y2 Value
	X	MI	602		DEC	Árloka 3. Staðsetning.
OUT	Y	MI	600		DEC	Árloka 3 útreiknað %

Element :Linear

Module: ! Main Module

Subroutine: Dælustýring

Net: 5

Params	Func	Operand	Address	PowerUp	Format	Description
IN	X1	D#		3276	DEC	
	Y1	D#		0	DEC	
	X2	D#		16384	DEC	
	Y2	D#		200	DEC	
	X	MI	1000		DEC	þrýstingur dælukerfi.
OUT	Y	MI	19		DEC	Mælir á þrýstilögn dælukerfis

Timers

Address	PowerUp	Format	Type	Reset PW	Description
0	00:00:03.00	TIME	TD		Tímalíði fyrir dælukerfi
1	00:00:03.00	TIME	TD		Tími dæla ekki með þrýsting
2	00:00:03.00	TIME	TD		Tímalíði fyrir fellihnapp á skjámynd. loka 1
3	00:00:00.00	TIME	TA		Tímateljari dæla 1
4	00:00:00.00	TIME	TA		Gangtímateljari á dælu 2
5	00:00:00.00	TIME	TD		Lokusig eðlilegt
6	00:00:00.00	TIME	TD		Lokusig óeðlilegt
7	00:00:01.00	TIME	TD		Tímalíði fyrir truflanastýringu á eða af.
8	00:00:00.00	TIME	TA		Gangtímateljari á dælu 1.
9	00:00:15.00	TIME	TD	TRUE	Tímalíði fyrir prófunaham loka 1
10	00:00:15.00	TIME	TD	TRUE	Tímalíði fyrir prófunaham loka 2
11	00:00:15.00	TIME	TD	TRUE	Tímalíði fyrir prófunaham loka 3
12	00:00:00.01	TIME	TD		Tímalíði fyrir mælingu á lokufellingu loka 1.
13	00:00:00.01	TIME	TD		Tímalíði fyrir mælingu á lokun loka 1.
14	00:00:00.01	TIME	TD		Tímalíði fyrir mælingu á lokufellingu loka 2.
15	00:00:00.01	TIME	TD		Tímalíði fyrir mælingu á lokun loka 2.
16	00:00:00.01	TIME	TD		Tímalíði fyrir mælingu á lokufellingu loka 3.
17	00:00:00.01	TIME	TD		Tímalíði fyrir mælingu á lokun loka 3.
18	00:00:03.00	TIME	TD		Tímalíði fyrir analogmælingu árloku 1
20	00:00:03.00	TIME	TD		Tímalíði, rennsli +10%
21	00:00:03.00	TIME	TD		Tímalíði, rennsli -10%
22	00:00:03.00	TIME	TD		Tímalíði fyrir fellihnapp á skjámynd. loka 2
24	00:00:00.00	TIME	TA		Gangtímateljari fyrir opnum á loku 1.
25	00:00:00.01	TIME	TD		Reset fyrir gangtímateljara fyrir opnum á loku 1.
26	00:00:00.00	TIME	TA		Gangtímateljari fyrir áfyllistöðu á loku 1.
27	00:00:00.01	TIME	TD		Reset fyrir gangtímateljara fyrir áfyllistöðu á loku 1.
28	00:00:00.00	TIME	TA		Gangtímateljari fyrir opnum á loku 2.
29	00:00:00.01	TIME	TD		Reset fyrir gangtímateljara fyrir opnum á loku 2
30	00:00:00.00	TIME	TA		Gangtímateljari fyrir áfyllistöðu á loku 2.
31	00:00:00.01	TIME	TD		Reset fyrir gangtímateljara fyrir áfyllistöðu á loku 2.
32	00:00:03.00	TIME	TD		Tímalíði fyrir fellihnapp á skjámynd. loka 3
33	00:00:00.00	TIME	TA		Gangtímateljari fyrir opnum á loku 3.
34	00:00:00.01	TIME	TD		Reset fyrir gangtímateljara fyrir opnum á loku 3.
35	00:00:00.00	TIME	TA		Gangtímateljari fyrir áfyllistöðu á loku 3.
36	00:00:00.01	TIME	TD		Reset fyrir gangtímateljara fyrir áfyllistöðu á loku 3.
37	00:10:00.00	TIME	TD		Tímatöf fyrir truflanastýringu
38	00:00:03.00	TIME	TD		Tímalíði fyrir analogmælingu árloku 2
39	00:00:03.00	TIME	TD		Tímalíði fyrir analogmælingu árloku 3
40	00:00:03.00	TIME	TD		Tímalíði fyrir analogmælingu Botnloku 1
41	00:00:03.00	TIME	TD		Tímalíði fyrir analogmælingu Botnloku 2
42	00:00:03.00	TIME	TD		Tímalíði fyrir analogmælingu Botnloku 3

Memory Bits

Address	PowerUp	Description
0		Hnappur "inntakslokur"
1		Hnappur "Botnlokur"
2		Hnappur "Árlokur"
3		Hnappur "dælustýring"
4		Hnappur "Endursetning"
5		Hnappur "aðvaranir"
6		Gaumlijs "aðvörun" Inntakslokur
7		Gaumlijs "aðvörun" Botnlokur
8		Gaumlijs "aðvörun" Árlokur
9		Gaumlijs "aðvörun" Dælustýring.
10		Hnappur "Til baka" á skjámyndum
11		Hnappur "Til baka" frá "Aflestur"
12		Hnappur fyrir skjámynd "Aflestur"
13		Hnappur fyrir "Truflanastýringu"
14		Fyrir áminningu á "truflanastýringu"
15		Truflanastýring í gang
16		Truflanastýring stöðvun
17		Set- reset hjálparbiti fyrir truflanastýringu
18		Vetur eða sumar
19		Árlokur opnum. Truflun.
20		Rennsli +10%
21		Rennsli -10%
22		Rennslistruflun Lei 76
23		Botnlokur opnum. Truflun.
24		Clear ALL pending Alarms and rescan bit
72		Val á dælum . Dæla 2
73		Val á dælum . Dæla 1
100		Hnappur Botnloku 1 0%

101		Hnappur Botnloku 1 25%
102		Hnappur Botnloku 1 50%
103		Hnappur Botnloku 1 75%
104		Hnappur Botnloku 1 100%
105		Hnappur Botnloku 1 Stopp
106		Gaumlijs Botnloku 1 opnun
107		Gaumlijs Botnloku 1 lokun
108		Gaumlijs Botnloku 1 Fullopin
109		Gaumlijs Botnloku 1 Fulllokuð
110		Gaumlijs Botnloku 1 Bilun
111		Set-Reset 0%
112		Set-Reset 25% UPP
113		Set-Reset 50% UPP
114		Set-Reset 75% UPP
115		Set-Reset 100%
116		Set-Reset 25% Niður
117		Set-Reset 50% Niður
118		Set-Reset 75% Niður
119		Skygging á hnappa 0%
120		Skygging á hnappa 25%
121		Skygging á hnappa 50%
122		Skygging á hnappa 75%
123		Loka í gangi niður
124		Loka í gangi upp.
125		Lokukeyrsla. Botnloka 1
126		"Stað % Fjar"
127		Set-Reset á bilun.
128		Hnappur fyrir reset á bilun
129		Biti fyrir stöðvun á keyrslu.
130		Botnloka 1. Merki frá truflanastýringu
131		Safnviðvörðun Bilun.B1
132		Bilanir frá 400V skáp.
133		Botnloka 1 Fullopin (innput)
134		Fulllokuð (Innput)
137		"Stað % Fjar" (innput)
200		Hnappur Botnloku 2 .0%
201		Hnappur Botnloku 2 25%
202		Hnappur Botnloku 2 50%
203		Hnappur Botnloku 2 75%
204		Hnappur Botnloku 2 100%
205		Hnappur Botnloku 2 Stopp
206		Gaumlijs Botnloku 2 opnun
207		Gaumlijs Botnloku 1 lokun
208		Gaumlijs Botnloku 2 Fullopin
209		Gaumlijs Botnloku 2 Fulllokuð
210		Gaumlijs Botnloku 2 Bilun
211		Set-Reset 0%
212		Set-Reset 25% UPP
213		Set-Reset 50% UPP
214		Set-Reset 75% UPP
215		Set-Reset 100%
216		Set-Reset 25% Niður
217		Set-Reset 50% Niður
218		Set-Reset 75% Niður
219		Skygging á hnappa 0%
220		Skygging á hnappa 25%
221		Skygging á hnappa 50%
222		Skygging á hnappa 75%
223		Loka í gangi niður
224		Loka í gangi upp.
225		Lokukeyrsla. Botnloka 2
226		"Stað % Fjar"
227		Set-Reset á bilun.
228		Hnappur fyrir reset á bilun
229		Biti fyrir stöðvun á keyrslu.
230		Botnloka 2. Merki frá truflanastýringu
231		Safnviðvörðun Bilun.B2
232		Bilanir frá 400V skáp.
233		Botnloka 2 Fullopin (innput)
234		Fulllokuð (Innput)
235		Keyrsla í gangi upp (output)
236		Keyrsla í gangi niður (output)
237		"Stað % Fjar" (innput)
300		Hnappur Botnloku 3. 0%
301		Hnappur Botnloku 3 25%
302		Hnappur Botnloku 3 50%
303		Hnappur Botnloku 3 75%
304		Hnappur Botnloku 3 100%
305		Hnappur Botnloku 3 Stopp

306		Gaumljós Botnloku 3 opnum
307		Gaumljós Botnloku 3 lokun
308		Gaumljós Botnloku 3 Fullopin
309		Gaumljós Botnloku 3 Fullokuð
310		Gaumljós Botnloku 3 Bilun
311		Set-Reset 0%
312		Set-Reset 25% UPP
313		Set-Reset 50% UPP
314		Set-Reset 75% UPP
315		Set-Reset 100%
316		Skygging á hnappa 0%
317		Skygging á hnappa 25%
318		Skygging á hnappa 50%
319		Skygging á hnappa 75%
320		Loka í gangi niður
321		Loka í gangi upp.
322		Lokukeyrsla. Botnloka 3
323		"Stað % Fjar"
324		Set-Reset á bilun.
325		Hnappur fyrir reset á bilun
326		Biti fyrir stöðvun á keyrslu.
327		Botnloka 3. Merki frá truflanastýringu
328		Safnviðvörðun Bilun.B3
329		Bilanir frá 400V skáp.
330		Fullopin (innput)
331		Fulllokuð (Innput)
332		Keyrsla í gangi upp (output)
333		Keyrsla í gangi niður (output)
334		"Stað % Fjar" (innput)
400		Hnappur Árloku 1 0%
401		Hnappur Árloku 1 25%
402		Hnappur Árloku 1 50%
403		Hnappur Árloku 1 75%
404		Hnappur Árloku 1 100%
405		Hnappur Árloku 1 Stopp
406		Gaumljós Árloku 1 opnum
407		Gaumljós Árloku 1 lokun
408		Gaumljós Árloku 1 Fullopin
409		Gaumljós Árloku 1 Fullokuð
410		Gaumljós Árloku 1 Bilun
411		Set-Reset 0%
412		Set-Reset 25% UPP
413		Set-Reset 50% UPP
414		Set-Reset 75% UPP
415		Set-Reset 100%
416		Set-Reset 25% Niður
417		Set-Reset 50% Niður
418		Set-Reset 75% Niður
419		Skygging á hnappa 0%
420		Skygging á hnappa 25%
421		Skygging á hnappa 50%
422		Skygging á hnappa 75%
423		Loka í gangi niður
424		Loka í gangi upp.
425		Lokukeyrsla. Árloka 1
426		"Stað % Fjar"
427		Set-Reset á bilun.
428		Hnappur fyrir reset á bilun
429		Biti fyrir stöðvun á keyrslu.
430		Árloka 1. Merki frá truflanastýringu
431		Safnviðvörðun Bilun. Á1
432		Bilanir frá 400V skáp.
433		Árloka 1 Fullopin (innput)
434		Fulllokuð (Innput)
500		"Stað % Fjar" (innput)
501		Hnappur Árloku 2 0%
502		Hnappur Árloku 2 25%
503		Hnappur Árloku 2 50%
504		Hnappur Árloku 2 75%
505		Hnappur Árloku 2 100%
506		Hnappur Árloku 2 Stopp
507		Gaumljós Árloku 2 opnum
508		Gaumljós Árloku 2 lokun
509		Gaumljós Árloku 2 Fullopin
510		Gaumljós Árloku 2 Fullokuð
		Gaumljós Árloku 2 Bilun

511		Set-Reset 0%
512		Set-Reset 25% UPP
513		Set-Reset 50% UPP
514		Set-Reset 75% UPP
515		Set-Reset 100%
516		Set-Reset 25% Niður
517		Set-Reset 50% Niður
518		Set-Reset 75% Niður
519		Skygging á hnappa 0%
520		Skygging á hnappa 25%
521		Skygging á hnappa 50%
522		Skygging á hnappa 75%
523		Loka í gangi niður
524		Loka í gangi upp.
525		Lokukeyrsla. Árloka 2
526		"Stað % Fjar"
527		Set-Reset á bilun.
528		Hnappur fyrir reset á bilun
529		Biti fyrir stöðvun á keyrslu.
530		Árloka 2. Merki frá truflanastýringu
531		Safnviðvörðun Bilun. Á2
532		Bilanir frá 400V skáp.
533		Árloka 2 Fullopin (innput)
534		Fulllokud (Innput)
535		Keyrsla í gangi upp (output)
536		Kevrsla í gangi niður (output)
537		"Stað % Fjar" (innput)
600		Hnappur Árloku 3 0%
601		Hnappur Árloku 3 25%
602		Hnappur Árloku 3 50%
603		Hnappur Árloku 3 75%
604		Hnappur Árloku 3 100%
605		Hnappur Árloku 3 Stopp
606		Gaumljós Árloku 3 opnun
607		Gaumljós Árloku 3 lokun
608		Gaumljós Árloku 3 Fullopin
609		Gaumljós Árloku 3 Fulllokud
610		Gaumljós Árloku 3 Bilun
611		Set-Reset 0%
612		Set-Reset 25% UPP
613		Set-Reset 50% UPP
614		Set-Reset 75% UPP
615		Set-Reset 100%
616		Set-Reset 25% Niður
617		Set-Reset 50% Niður
618		Set-Reset 75% Niður
619		Skygging á hnappa 0%
620		Skygging á hnappa 25%
621		Skygging á hnappa 50%
622		Skygging á hnappa 75%
623		Loka í gangi niður
624		Loka í gangi upp.
625		Lokukeyrsla. Árloka 3
626		"Stað % Fjar"
627		Set-Reset á bilun.
628		Hnappur fyrir reset á bilun
629		Biti fyrir stöðvun á keyrslu.
630		Árloka 3. Merki frá truflanastýringu
631		Safnviðvörðun Bilun. Á3
632		Bilanir frá 400V skáp.
633		Fullopin (innput)
634		Fulllokud (Innput)
635		Keyrsla í gangi upp (output)
636		Kevrsla í gangi niður (output)
637		"Stað % Fjar" (innput)
700		Hnappur "uppi" inntaksloka 1
701		Hnappur "Niður" inntaksloka 1
702		Hnappur "Felling" inntaksloka 1
703		Inntaksloka 1 "Staðstýring"
704		Merking "Loka Uppi"
705		Merking "Áfyllistaða"
706		Merking "Loka niðri"
707		Merking "Loka í prófunarham"
708		Loka "uppi" (Endastopp)
709		Lokusig (eðlilegt) (Endastopp)
710		Lokusig (óeðlilegt) (Endastopp)
711		Lokusig (Neyðarártýsing) (Endastopp)
712		Loka í áfyllistöðu (Endastopp)
713		Loka niðri (Endastopp)

714		þrýstipípa full
715		Neyðarstöðvunarhnappur
716		Loka 1 "hand & auto"
717		Vél Stopp (V<90%)
718		Set-Reset biti fyrir "Loka niður"
719		Set-Reset biti fyrir "Loka Upp"
720		Set-Reset biti fyrir "Lokusig"
721		Set-Reset biti fyrir "Öeðlilegt lokusig"
722		Set-Reset biti fyrir "Lokusig-Tripp-Felling"
723		Set-Reset biti fyrir "Áfyllistöðu"
724		Prófunahamur Inntaksloku
725		Neyðarstöðvun frá vélum
726		Loka "Uppkeyrla"
728		Digitalmerki frá "þrýstingur > 2kg/cm"
729		Loka niður. (Verður notað sem innput)
730		Hnappur fyrir prófunarham.
731		Biti fyrir prófunaham
732		Loka upp. (Verður notað sem innput)
733		Set reset fyrir prófunaham.
735		Endursetning á lokusigs teljurum
800		Hnappur "upp" inntaksloka 2
801		Hnappur "Niður" inntaksloka 2
802		Hnappur "Felling" inntaksloka 2
803		Inntaksloka 2 "Staðstýring"
804		Merking "Loka Uppi"
805		Merking "Áfyllistaða"
806		Merking "Loka niðri"
808		Loka "uppi" (Endastopp)
809		Lokusig (eðlilegt) (Endastopp)
810		Lokusig (óeðlilegt) (Endastopp)
811		Lokusig (Neyðarútleysing) (Endastopp)
812		Loka í áfyllistöðu (Endastopp)
813		Loka niðri (Endastopp)
814		þrýstipípa full
815		Neyðarstöðvunarhnappur
817		Vél Stopp (V<90%)
818		Set-Reset biti fyrir "Loka niður"
819		Set-Reset biti fyrir "Loka Upp"
820		Set-Reset biti fyrir "Lokusig"
821		Set-Reset biti fyrir "Öeðlilegt lokusig"
822		Set-Reset biti fyrir "Lokusig-Tripp-Felling"
823		Set-Reset biti fyrir "Áfyllistöðu"
824		Prófunahamur Inntaksloku
825		Neyðarstöðvun frá vélum
826		Loka "Uppkeyrla"
828		Digitalmerki frá "þrýstingur > 2kg/cm"
829		Loka niður. (Verður notað sem innput)
830		Hnappur fyrir prófunarham.
832		Loka upp. (Verður notað sem innput)
833		Set reset fyrir prófunaham.
835		Endursetning á lokusigs teljurum
900		Hnappur "upp" inntaksloka 3
901		Hnappur "Niður" inntaksloka 3
902		Hnappur "Felling" inntaksloka 3
903		Inntaksloka 3 "Staðstýring"
904		Merking "Loka Uppi"
905		Merking "Áfyllistaða"
906		Merking "Loka niðri"
908		Loka "uppi" (Endastopp)
909		Lokusig (eðlilegt) (Endastopp)
910		Lokusig (óeðlilegt) (Endastopp)
911		Lokusig (Neyðarútleysing) (Endastopp)
912		Loka í áfyllistöðu (Endastopp)
913		Loka niðri (Endastopp)
914		þrýstipípa full
915		Neyðarstöðvunarhnappur
917		Vél Stopp (V<90%)
918		Set-Reset biti fyrir "Loka niður"
919		Set-Reset biti fyrir "Loka Upp"
920		Set-Reset biti fyrir "Lokusig"
921		Set-Reset biti fyrir "Öeðlilegt lokusig"
922		Set-Reset biti fyrir "Lokusig-Tripp-Felling"
923		Set-Reset biti fyrir "Áfyllistöðu"
924		Prófunahamur Inntaksloku
925		Neyðarstöðvun frá vélum
926		Loka "Uppkeyrla"
928		Digitalmerki frá "þrýstingur > 2kg/cm"
929		Loka niður. (Verður notað sem innput)
930		Hnappur fyrir prófunarham.

932		Loka upp. (Verður notað sem innput)
933		Set reset fyrir prófunaham.
935		Endursetning á lokusigs teljurum
1000		Hnappur fyrir val á Dælu 1.
1001		Hnappur fyrir val á Dælu 2.
1002		Fyrir gaumljós á "Val á dælum."
1003		Hnappur fyrir endursetningu á "bilun"
1004		Heimild á dælukerfi.
1005		Bilun í dælukerfi.
1006		Dæla 1 Staðsýring
1007		Dæla 2 Staðsýring
1008		Fyrir blikk á lög "Dæla 1"
1009		Fyrir blikk á lög "Dæla 2"
1010		Fyrir blikk á lög "Dæla 1&2"
1011		"Set-Reset" Fyrir dæluval.
1012		Hjálparbiti 1 fyrir dælu 1.
1013		Hjálparbiti 1 fyrir dælu 2.
1014		Hjálparbiti 2 fyrir dælu 1.
1015		Hjálparbiti 2 fyrir dælu 2.
1016		Ræsing á dælu.
1017		Ræsing Á Seinni dælu vegna lokusigs
1018		"Set-Reset" Fyrir bilun í dælukerfi.
1019		Þrýstingur OK.
1020		Fyrir borða sem segir til um þrýsting "OK"
1021		Hjálparbiti teljara. Dælu 1
1022		Hjálparbiti teljara. Dælu 2
1023		Endursetningarhnappur á gangtíma dæla 1
1024		Endursetningarhnappur á gangtíma dæla 2
1025		Lokusig sameginlegt. Dælukerfi.
2000		Pause ALL Alarms
2001		Clear ALL pending Alarms and rescan bit
2002		One or more Alarms is Active
2003		One or more Alarms is Active
2017		Markingbiti aðvaranir
2018		Hjálparbiti 1 aðvaranir
2019		Hjálparbiti 2 aðvaranir
2020		Inntaksloka 1 Óeðileglt lokusig aðvörun.
2021		Inntaksloka 2 Óeðileglt lokusig aðvörun.
2022		Inntaksloka 3 Óeðileglt lokusig aðvörun.
2023		Inntaksloka 1 Felling aðvörun.
2024		Inntaksloka 2 Felling aðvörun.
2025		Inntaksloka 3 Felling aðvörun.
2026		Aðvörun botnloka 1
2027		Aðvörun botnloka 2
2028		Aðvörun botnloka 3
2029		Aðvörun árloka 1
2030		Aðvörun árloka 2
2031		Aðvörun árloka 3
2032		Aðvörun bilun dælukerfi
2033		Aðvörun, rennsli +10%
2034		Aðvörun, rennsli -10%

Memory Integers

Address	PowerUp	Format	Description
0		DEC	Inntaksloka 3 %
1		DEC	Hæð inntaksloku 2
2		DEC	Hæð inntaksloku 1
3		DEC	Þrýstingur í penstokk
4		DEC	Fast gildi 1.5kg/cm
5		DEC	Inntakslokur samanlagt rennsli
6		DEC	Botnlokur samanlagt rennsli
7		DEC	Árlokur samanlagt rennsli
8		DEC	Samanlagt rennsli Sogsins
9		DEC	Rennsli um árloku 1
10		DEC	Vél 1 M3
11		DEC	Vél 2 M3
12		DEC	Vél 3 M3
13		DEC	Meðalrennsli síðata 3 klst
14		DEC	Þrýstingur á lögnum frá dælukerfi
15		DEC	Opunur á árloku 1 %
16		DEC	Gangtímateljri dælu
17		DEC	Tímateljari Rifopnun
18		DEC	Biti fyrir tímateljara á rifopnun
19		DEC	Mælir á þrýstilögnum dælukerfis
20		DEC	Alarm ID to display
21		DEC	MW mæling vél 1
22		DEC	MW mæling vél 2
23		DEC	MW mæling vél 3

24		DEC	Show Alarm Status
25		DEC	Show Groups Status
30		DEC	Rennslisbiti fyrir lei 76. Rennsli síðustu 3 klst.
31		DEC	Rennsli +10%
32		DEC	Rennsli -10%
34		DEC	Rennsli síðasta 1 klst
35		DEC	Rennsli síðasta 2 klst
36		DEC	Samanlagt rennsli fyrir meðaltal
100		DEC	Botnloka 1 útreiknað %
101		DEC	Botnloka 1 útreiknað m3
102		DEC	Botnloka 1. Staðsetning.
109		DEC	Prósentuopnum 10 sek fresti.
200		DEC	Botnloka 2 útreiknað %
201		DEC	Botnloka 2 útreiknað m3
202		DEC	Botnloka 2. Staðsetning.
209		DEC	Prósentuopnum 10 sek fresti.
300		DEC	Botnloka 3 útreiknað %
301		DEC	Botnloka 3 útreiknað m3
302		DEC	Botnloka 3. Staðsetning.
309		DEC	Prósentuopnum 10 sek fresti.
400		DEC	Árloka 1 útreiknað %
401		DEC	Árloka 1 útreiknað m3
402		DEC	Árloka 1. Staðsetning.
403		DEC	Opnum Árloku Metrar. Deilt
409		DEC	Prósentuopnum 10 sek fresti.
410		DEC	Talningarbiti sek.
500		DEC	Árloka 2 útreiknað %
501		DEC	Árloka 2 útreiknað m3
502		DEC	Árloka 2. Staðsetning.
509		DEC	Prósentuopnum 10 sek fresti.
600		DEC	Árloka 3 útreiknað %
601		DEC	Árloka 3 útreiknað m3
602		DEC	Árloka 3. Staðsetning.
609		DEC	Prósentuopnum 10 sek fresti.
704		DEC	Þrýstingur < 2kg/cm2
804		DEC	Þrýstingur < 2kg/cm2
904		DEC	Þrýstingur < 2kg/cm2
1000		DEC	Þrýstingur dælukerfi.
2000		DEC	Total Number of all Active Alarms
2001		DEC	Total Number of Alarms pending for Reset
2002		DEC	Total Number of all Active Alarms
2003		DEC	Total Number of Alarms pending for View
2004		DEC	Total Number of Alarms pending for Reset

Counters

Address	PowerUp	Format	Description
0	0	DEC	Tímateljari dæla 1
2	0	DEC	Lokusig eðlilegt fjöldi. Loka 1
3	0	DEC	Lokusig Öeðlilegt fjöldi. Loka 1
6	0	DEC	Lokusig eðlilegt fjöldi. Loka 2
7	0	DEC	Lokusig Öeðlilegt fjöldi. Loka 2
8	0	DEC	Lokusig eðlilegt fjöldi. Loka 3
9	0	DEC	Lokusig Öeðlilegt fjöldi. Loka 3
10	0	DEC	Teljari fyrir fellingu Loka 1
11	0	DEC	Teljari fyrir lokun Loka 1
12	0	DEC	Teljari fyrir fellingu Loka 2
13	0	DEC	Teljari fyrir lokun Loka 2
14	0	DEC	Teljari fyrir fellingu Loka 3
15	0	DEC	Teljari fyrir lokun Loka 3
16	0	DEC	1 klst . Vegna meðaltal
17	0	DEC	2 klst . Vegna meðaltal
20	0	DEC	Talningarbiti sek. Árloka 1
21	0	DEC	Talningarbiti sek. Árloka 2
22	0	DEC	Talningarbiti sek. Árloka 3
23	0	DEC	Talningarbiti sek. Botnloka 1
24	0	DEC	Talningarbiti sek. Botnloka 2
25	0	DEC	Talningarbiti sek. Botnloka 3
31	0	DEC	3 klst . Talningarbiti fyrir lei 76

1. Tilgangur og umfang

Að lýsa fastbundnum rekstrartakmörkunum í Soginu gagnvart stýringu véla, stýringu loka í vatnsvegum og stýringu á hæð lóna.

2. Lýsing

2.1. Steingrímsstöð og Þingvallavatn

Vatnshæð Þingvallavatns:

Vatnshæðarmörk allt árið:

Lágmark: 102,35 m.y.s.

Hámark: 102,65 m.y.s.

Reglunarsvið frá 1.Máí til 1. Október.

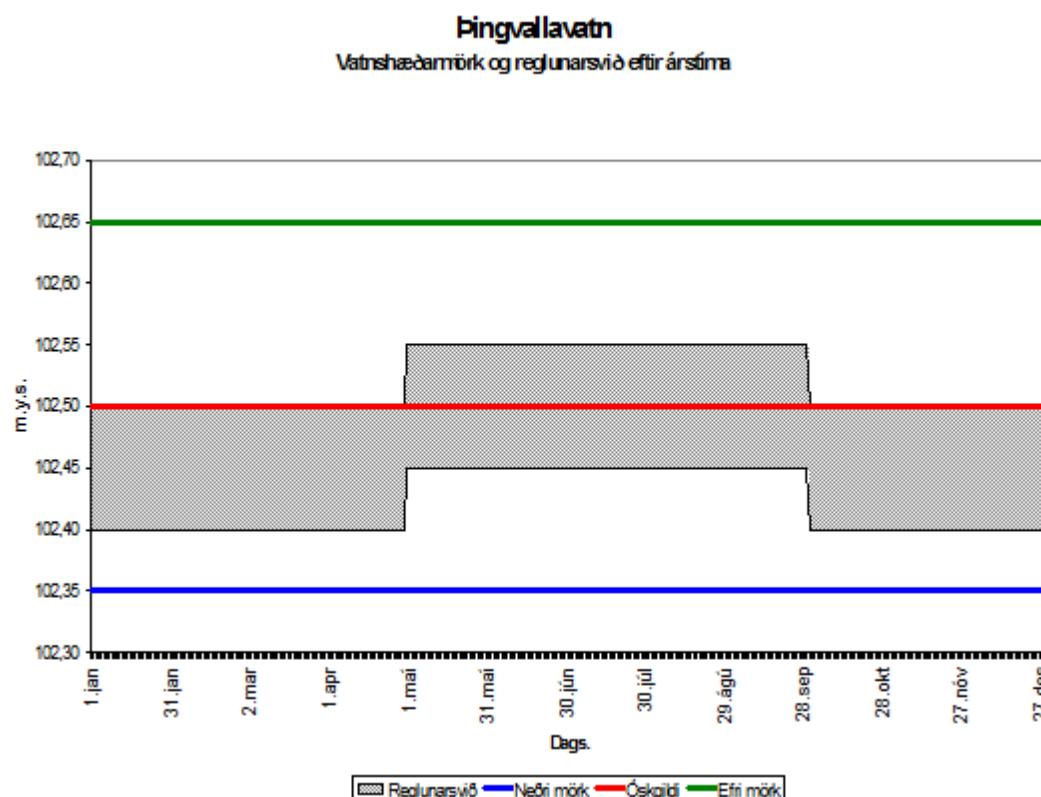
Neðrimörk: 102,45 m.y.s

Efrimörk: 102,55 m.y.s.

Reglunarsvið frá 1. Október til 1. Maí.

Neðrimörk: 102,40 m.y.s.

Efrimörk: 102,50 m.y.s



Ef af einhverjum ástæðum tekst ekki að halda vatnshæðum Þingvallavatns innan ofangreindra marka, þá ber vakthafandi stöðvarverði að tilkynna það tafarlaust til Stöðvastjóra eða viðhaldsstjóra Sogsstöðva, sem upplýsa eftirtalda aðila:

- Sveitastjóra Grímsness og Grafningshrepps
- Sveitastjóra Bláskógabyggðar
- Veiðifélag Þingvallavatns

Rennsli úr Þingvallavatni

Í venjulegum rekstri skal heildar rennsli úr Þingvallavatni takmarkað við 150 m³/s. Ef nauðsynlegt er hleypa meira vatni úr Þingvallavatni þá skal það gert í samráði við fírmann Stjórnstöðvar og stöðvastjóra eða viðhaldsstjóra Sogstöðva.

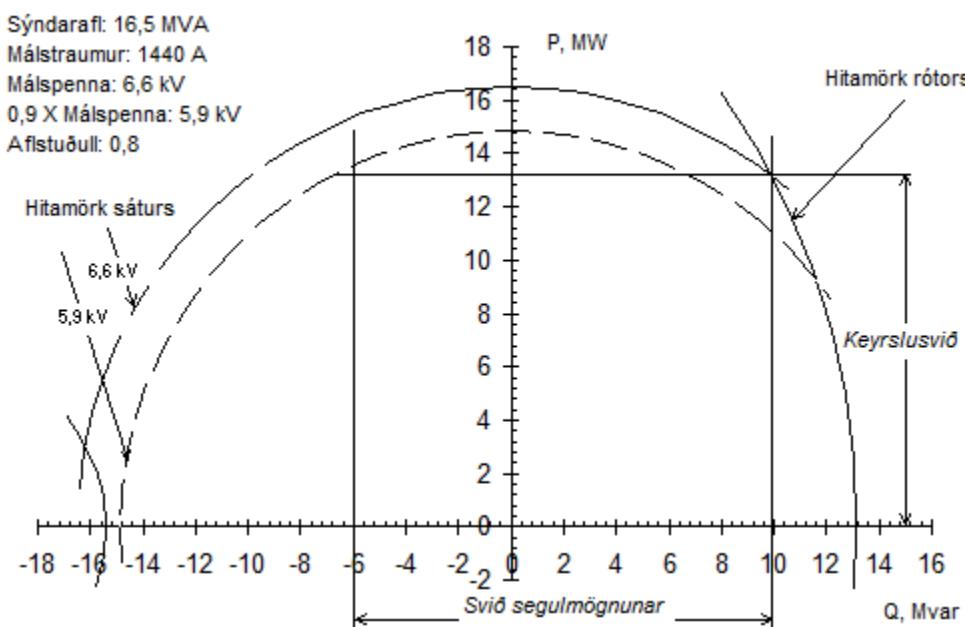
Haga skal rekstri Sogstöðva þannig að lágmarkaðar séu sveiflur í rennsli úr Þingvallavatni og sveiflur á vatnsborði Þingvallavatns t.d. með tilliti til framvirkra innrennslisspáa og veðurspáa.

Hámarks rennsli um 2 árlokur í Þingvallavatnsstíflu er 240 m³/s við 80% opnum og vatnshæð 102,55 m.y.s. Framhjárennsli í farvegi skal að lágmarki vera 3 til 4 m³/sek

Varúð: Taka þarf tillit til veiðimanna.

Keyrla véla í Steingrímsstöð

Eftirfarandi mynd sýnir vinnusvæði rafala 1 og 2 í Steingrímsstöð sem eru eins:



Æskilegt svið segulmögnumnar er: 1 Mvar til 8,0 Mvar.

2.2. Ljósifoss og Úlfljótsvatn

Vatnshæð Úlfþjótsvatns:

Vatnshæðarmörk allt árið:

Lágmark: 81,10 m.y.s.

Óskgildi: 81,30 m.y.s.

Hámark: 81,50 m.y.s.

FRONTIER 37,300 M.Y.O.

Ei ár einnverjum astæðum tekst ekki að halda vatnshæðum Umhjólfsvatns innan ofangreindra marka, þá ber vakthafandi stöðvarverði að tilkynna það tafarlaust til Stöðvastjóra eða viðhaldsstjóra Sogsstöðva, sem upplýsa eftirtalda aðila:

- Stoðvastjóra eða viðhaldsstjóra Sogsstoðva.
 - Sveitastjóra Grímsness og Grafningshrepps.
 - Fulltrúa landeigenda við Úlflijótsvatn.

Rennsli um lokur

Hámarks rennsli um 3 árlokur er 138 m³/s við vatnshæð 81,30 m.y.s.

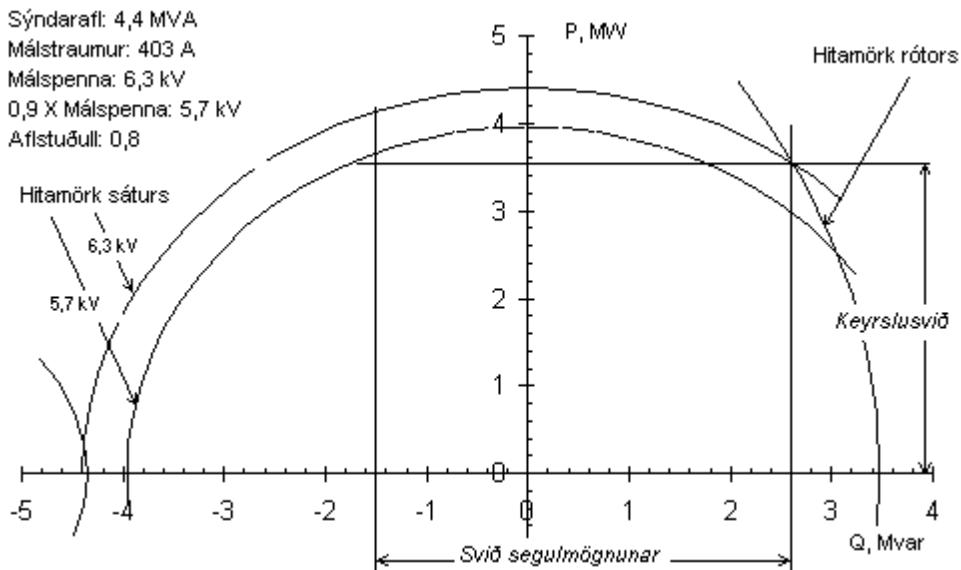
Hámarks rennsli um 3 botnlokur er 252 m³/s við vatnshæð 81,30 m.y.s.

Botnlokum skal ekki haldið opnum í stöðunni 3 til 6 % vegna titrings.

Varúð: Taka þarf tillit til veiðimanna.

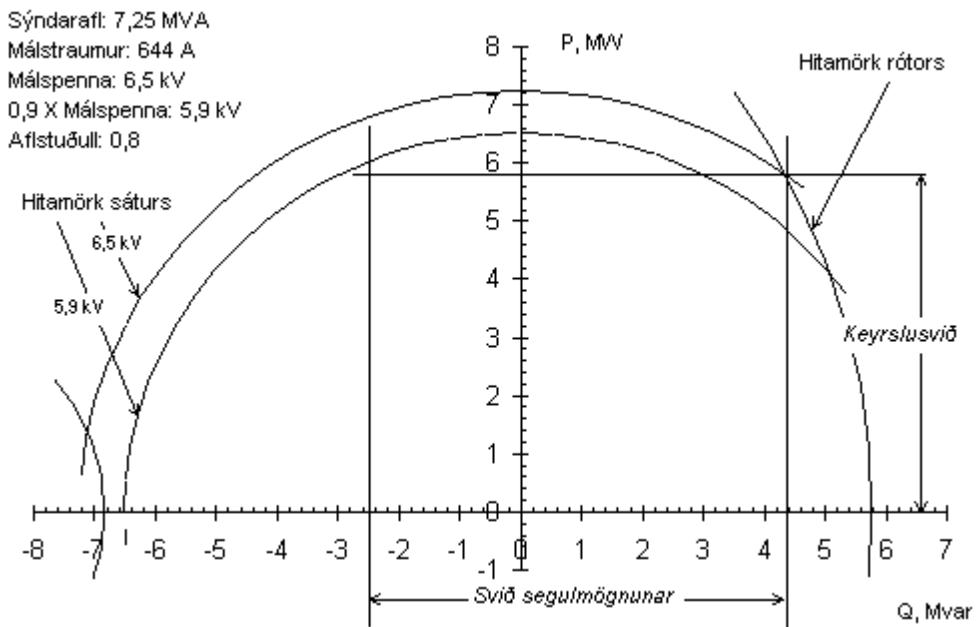
Keyrsla véla á Ljósafossi

Eftirfarandi mynd sýnir vinnusvæði rafala 1 og 2 á Ljósafossi sem eru eins:



Æskilegt svið segulmögnunar er 0,0 Mvar til 1,5 Mvar.

Eftirfarandi mynd sýnir vinnusvæði rafala 3 á Ljósafossi:



Æskilegt svið segulmögnunar er 0,0 Mvar til 3,0 Mvar.

2.3. Írafoss og Írafosslón

Vatnshæð Írafosslóns:

Vatnshæðarmörk allt árið:

Lágmark: 63,50 m.y.s.

Óskgildi: 64,00 m.y.s.

Hámark: 64,40 m.y.s.

Rennsli um lokur

Hámarks rennsli um 3 árlokur er $120 \text{ m}^3/\text{s}$ við vatnshæð 64,00 m.y.s.

Hámarks rennsli um 3 botnlokur er $252 \text{ m}^3/\text{s}$ við vatnshæð 64,00 m.y.s.

Varúð: Taka þarf tillit til veiðimanna í Soginu.

Rennsli frá Írafossi

Halda skal rennsli frá Írafossi yfir $70 \text{ m}^3/\text{sek.}$

Halda skal rennsli frá Írafossi undir $150 \text{ m}^3/\text{sek.}$ Ef nauðsynlegt er að hleypa meira vatni út frá Írafossi þá skal það gert í samráði við yfirmann stjórnstöðvar og stöðvastjóra eða viðhaldsstjóra Sogsstöðva.

Ef af einhverjum ástæðum tekur ekki að halda rennsli Sogsins innan ofangreindra marka, þá ber vakthafandi stöðvarverði að tilkynna það tafarlaust til Stöðvastjóra eða viðhaldsstjóra Sogsstöðva, sem upplýsa eftirtalda aðila:

- Sveitastjóra Grímsness og Grafningshrepps.
- Veiðifélag Árnессýslu.

Breytingar rennslis með tíma

Miða skal við að breytingar á rennsli til aukningar eða minnkunar séu ekki meiri en 10% (m³/sek) innan 3 klst.

Séu tvær vélar keyrðar þá er lágmarks afl frá stöðinni 23,00 MW.

Séu þrjár vélar keyrðar þá er lágmarks afl frá stöðinni 20,00 MW.

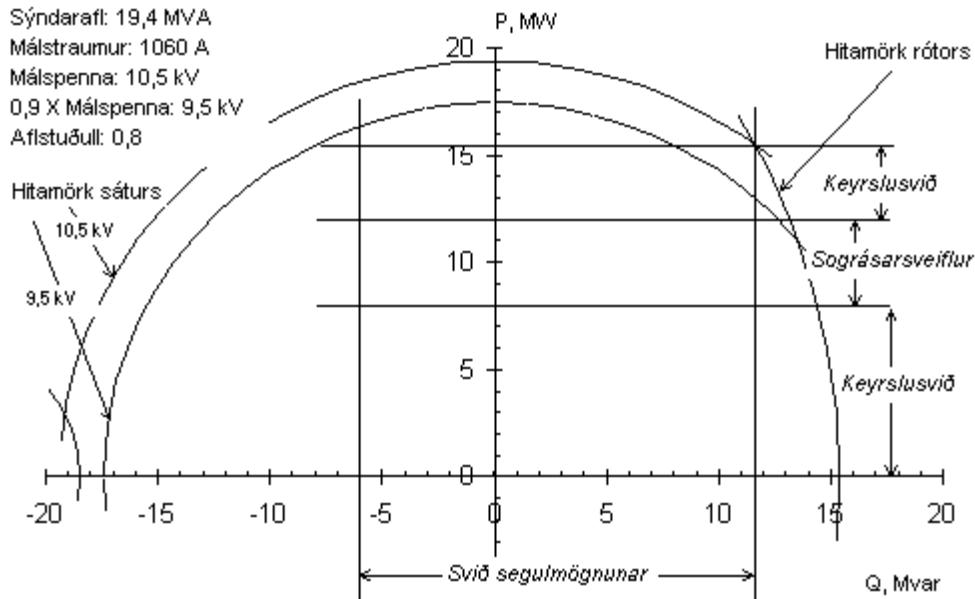
Í kjölfar útleysinga þar sem ekki er hægt að taka upp álag án tafar, verður að opna lokur samstundis.

Ef fyrirséð er að ekki sé hægt að keyra vélar til að tryggja lágmarksrennsli, þá þarf að opna lokur með 30 mín. fyrirvara. Opnunartími botnloku er 10 mín. Vatnið er um 20 mín. frá stíflu að útfalli frá vélum.

Miða skal við að nota árlokur á sumrin og botnlokur á veturnar. Miða skal við sumardaginn fyrsta og fyrsta vetrardag.

Keyrsla véla á Írafossi

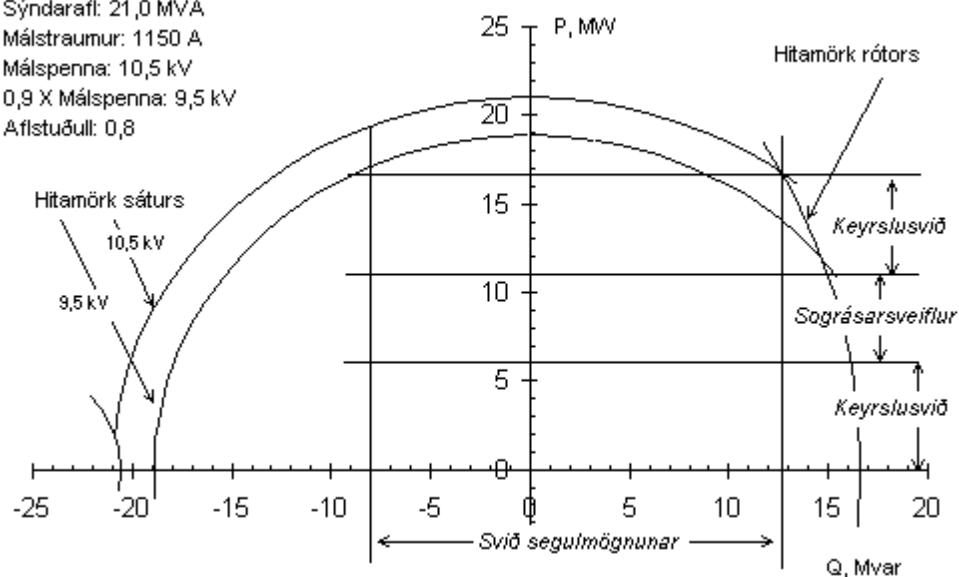
Eftirfarandi mynd sýnir vinnusvæði rafala 1 og 2 á Írafossi sem eru eins:



Æskilegt svið segulmögnum er 1,0 Mvar til 8,0 Mvar.

Eftirfarandi mynd sýnir vinnusvæði rafala 3 á Írafossi:

Sýndaraft: 21,0 MVA
Málstraumur: 1150 A
Málpenna: 10,5 kV
 $0,9 \times$ Málpenna: 9,5 kV
Aflstuðull: 0,8



Æskilegt svið segulmögnumunar er 1,0 Mvar til 9,0 Mvar.

Heildarlausnir frá hönnun til gangsetningar Total solution from design to commissioning
 Samey ehf • Lyngási 13 • 210 Garðabæ • Tel: 354-510 5200 • Fax: 354-510 5201 • Kt: 6401892239 • Vsknr.: 13008 • samey@samey.is

Landsvirkjun

Háaleitisbraut 68
 103 Reykjavík
 420269-1299

Tilboð**18049**

Dags. - Gildir til: 04.04.13 04.05.13
 Greiðsl.skilm.: Borgist innan 30 daga B
 Afh.skilm.: Skilmáli 1
 Starfsmaður: Eiríkur Heimir Sigurðsson
 Tilvísun:
 Verk:
 Raðnr.: 18049 Sími: 515 9000
 Fax:

Vörunúmer	Lýsing	Fjöldi	Eining	Einingaverð	Afsl.%	Upphæð	VSK
IO-D16A3-RO16	Un XL-EXP,16I,3AI,16RO	10,00	stk.	27.630,72	15,00	234.861,00	5
EX-RC1	Un remote I/O adapter	3,00	stk.	28.807,00	15,00	73.458,00	5
V1210-T20BJ	Unitronics - Vision 280B Graphic, opic	3,00	stk.	173.382,00	15,00	442.124,00	5
QS10.241	PULS 24-28Vdc 10A 240W	3,00	stk.	39.290,98	15,00	100.192,00	5
W1855610000	W wtr 2.5	280,00	stk.	479,68	15,00	114.163,00	5
W8530631001	W PRS 24Vdc Ld 2CO	72,00	Stk	2.690,68	15,00	164.670,00	5
1047118	Sick DT50-P1123	3,00	Stk	88.475,31	15,00	225.612,00	5
8X10Y325	Cubic ryðfrír skápur ip66 80x100x32,5 cm	1,00	Stk	172.397,82	10,00	155.158,00	5

Samtals fyrir Vsk.:	1.766.610,00
Afsláttur:	256.372,00
5 = Sala með 25,5 % Vsk.	1.510.238,00
Til greiðslu :	385.111,00
	1.895.349,00

Móttekið/Greitt:

V1210 OPLCs are programmable logic controllers that comprise a built-in operating panel containing a 12.1" Color Touchscreen.

You can find additional documentation on the Unitronics' Setup CD and in the Technical Library at www.unitronics.com.

Technical Specifications

Power Supply

Input voltage	12 or 24VDC
Permissible range	10.2-28.8VDC
Max. current consumption	1A@12V 0.5A@24V

Battery

Back-up	7 years typical at 25°C, battery back-up for RTC and system data, including variable data.
Replaceable	Yes, without opening the controller.

Graphic Display Screen

LCD Type	TFT
Illumination backlight	White LED
Display resolution, pixels	800x600 (SVGA)
Viewing area	12.1"
Colors	65,536 (16-bit)
Touchscreen	Resistive, analog
'Touch' indication	Via buzzer
Screen brightness	Via software (Store value to SI 9).
Keypad	Displays virtual keyboard when the application requires data entry.

Notes:

1. Note that the LCD screen may have a single pixel that is permanently either black or white.

Program

Memory size	Application Logic – 2MB, Images – 32MB, Fonts – 1MB		
Operand type	Quantity	Symbol	Value
Memory Bits	8192	MB	Bit (coil)
Memory Integers	4096	MI	16-bit
Long Integers	512	ML	32-bit
Double Word	256	DW	32-bit unsigned
Memory Floats	64	MF	32-bit
Timers	384	T	32-bit
Counters	32	C	16-bit
Data Tables	120K dynamic RAM data (recipe parameters, datalogs, etc.) Up tp 256K Flash data		
HMI displays	Up to 1024		
Program scan time	9 µsec per 1K of typical application		

Removable Memory

Micro-SD card Compatible with fast micro-SD cards; store datalogs, Alarms, Trends, Data Tables, backup Ladder, HMI, and OS. See Note 2

Notes:

2. User must format via Unitronics SD tools utility.

Communication

Serial ports	2. See Note 3	
RS232		
Galvanic isolation	Yes	
Voltage limits	±20VDC absolute maximum	
Baud rate range	300 to 115200 bps	
Cable length	Up to 15m (50')	
RS485		
Galvanic isolation	Yes	
Voltage limits	–7 to +12VDC differential maximum	
Baud rate range	300 to 115200 bps	
Nodes	Up to 32	
Cable type	Shielded twisted pair, in compliance with EIA RS485	
Cable length	1200m maximum (4000')	
USB		
Port type	See Note 4	
Galvanic isolation	Mini-B	
Specification	No	
Baud rate range	USB 2.0 compliant; full speed	
Cable	300 to 115200 bps	
Cable	USB 2.0 compliant; up to 3m	
CANbus port	1	
Nodes	CANopen	<u>Unitronics' CANbus protocols</u>
	127	60
Power requirements	24VDC (±4%), 40mA max. per unit. See Note 5	
Galvanic isolation	Yes, between CANbus and controller	
Cable length/baud rate	25 m	1 Mbit/s
See Note 5	100 m	500 Kbit/s
	250 m	250 Kbit/s
	500 m	125 Kbit/s
	500 m	100 Kbit/s
	1000 m*	50 Kbit/s
	1000 m*	20 Kbit/s
	* If you require cable lengths over 500 meters, contact technical support.	
Optional port	User may install a single Ethernet port, or an RS232/RS485 port. Available by separate order.	

Notes:

3. The standard for each port is set to either RS232/RS485 according to DIP switch settings. Refer to the Installation Guide.
4. The USB port may be used for programming, OS download, and PC access. Note that COM port 1 function is suspended when this port is physically connected to a PC.
5. Supports both 12 and 24VDC CANbus power supply, (±4%), 40mA maximum per unit. Note that if 12 VDC is used, the maximum cable length is 150 meters.

I/Os

Snap-in I/O modules	Number of I/Os and types vary according to module. Supports up to 1024 digital, high-speed, and analog I/Os.
Expansion modules	Plugs into rear port to create self-contained PLC with up to 62 I/Os. <u>Local adapter</u> (P.N. EX-A1), via I/O Expansion Port. Integrate up to 8 I/O Expansion Modules comprising up to 128 additional I/Os.
	<u>Remote adapter</u> (P.N. EX-RC1), via CANbus port. Connect up to 60 adapters; connect up to 8 I/O expansion modules to each adapter.
Exp. port isolation	Galvanic

Dimensions

Size	313.1X244.6X59.1mm (12.32"X9.62"X2.32"). See Note 6
Weight	1.7kg (60 oz)

Notes:

6. For exact dimensions, refer to the product's Installation Guide.

Mounting

Panel-mounting	Via brackets
----------------	--------------

Environment

Inside cabinet	IP20 / NEMA1 (case)
Panel mounted	IP65/66/NEMA4X (front panel)
Operational temperature	0 to 50°C (32 to 122°F)
Storage temperature	-20 to 60°C (-4 to 140°F)
Relative Humidity (RH)	5% to 95% (non-condensing)

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DTS-V1210-T20BJ 05/11

The Unitronics® EX-D16A3-TO16 is an XL I/O expansion module for use in conjunction with specific Unitronics controllers. XL modules comprise enhanced I/O configurations and detachable I/O connectors. In addition, this module comprises a built-in adapter for communicating with the PLC and providing power to the other expansion modules in the system.

This module provides:

- 16 digital inputs, includes 1 HSC
- 3 analog inputs
- 16 transistor outputs, includes 1 HSO

For additional information and wiring diagrams, visit the Technical Library at www.unitronics.com.

Technical Specifications

General

I/O module capacity	Up to 7 I/O expansion modules can be connected to this module. This number may vary according to the modules used.
Status indicators	
RUN: Green LED	▪ Lights when a communication link is established between the module and the PLC
PWR: Green LED	▪ Blinks when the communication link fails ▪ Lights when power is supplied

Power Supply

Input voltage	24VDC
Permissible range	20.4 to 28.8VDC, ripple < 10%
Maximum current consumption	90mA @ 24VDC – EX-D16A3-TO16 alone 220mA @ 24VDC – maximum load on the 5VDC supply when the EX-D16A3-TO16 powers seven additional I/O expansion modules
Current for additional modules	500mA maximum from 5VDC, see note 1

Notes:

1. For example, 2 IO-DI8-TO8 modules consume a maximum of 140mA of the adapter's 5VDC supply.

Digital Inputs

Number of inputs	16 (in a single group)
Input mode	pnp (positive logic) or npn (negative logic) – configurable by hard-wiring
Galvanic isolation	None
Status indicators	
IN: Green LEDs	▪ One green LED for each input: Lights when the input is active, see note 2
Nominal input voltage	24VDC
Input voltage	
pnp (positive logic)	0–5VDC for logic state 0 17–28.8VDC for logic state 1
npn (negative logic)	17–28.8VDC for logic state 0 0–5VDC for logic state 1
Input current	3.7mA @ 24VDC
Input impedance	6.5kΩ
Response time	10ms typical
High-speed input	The specifications in this section apply when an input is configured as a high-speed counter or frequency measurer. If configured as a general purpose digital input, the specification is as above. See notes 3, 4, and 5.
Resolution	16-bit or 32-bit, depending on the PLC
Frequency	30kHz maximum (at 24VDC ±10%)
Minimum pulse width	14µs

Notes:

2. If the input is active but there is no communication with the PLC (RUN blinks), the status LED does not light.
3. Input 36 can function either as a high-speed counter, frequency measurer, or general purpose digital input.
4. Input 37 can function either as a counter reset input or general purpose digital input. In both cases, the specifications of this input are those of a general purpose digital input.
5. If input 36 is set as a high-speed counter and no reset input is configured, input 37 functions as a general purpose digital input.

Analog Inputs

Number of inputs	3
Input type	0–20mA or 4–20mA
Input impedance	191Ω
Maximum input rating	28mA, 5.3VDC
Galvanic isolation	None
Cable type	Shielded twisted-pair
Conversion method	Successive approximation
Resolution (0-20mA)	10-bit (1024 units)
Resolution (4-20mA)	204 to 1023 (820 units)
Conversion time	Each configured input is sampled once per 1.67ms. For example, if 3 inputs are configured, it takes $3 \times 1.67 = 5$ ms to sample all the analog inputs. See note 6.
Accuracy	±0.9% of full scale
Status indication	In software: If a specific input value is 1024, a single analog input deviates above the permissible range. If all the input values are 1024, either all the inputs deviate above the permissible range or the RG signal is not connected.

Notes:

6. The conversion time does not include communication time with the PLC and PLC scan time.

Digital Outputs

Number of outputs	16 transistors	
Output type	Output 32: Either pnp: P-MOSFET (open drain) or npn: N-MOSFET (open drain) Outputs 33–47: pnp: P-MOSFET (open drain)	
Galvanic isolation	Refer to notes 10 and 11	
Status Indicators	None	
OUT: Red LEDs	▪ One red LED for each output: Lights when the corresponding output is active	
S.C.: Red LED	▪ Lights when a pnp output transistor load causes a short-circuit, see note 12	
Maximum output current	pnp	npn
0.5A per output, 4A total	50mA	
Maximum surge current	0.6A peak, once every 2 seconds, for a duration of 10ms per output, not simultaneously	N/A
Maximum delay OFF to ON	1ms	1μs
Maximum delay ON to OFF	0.15ms	10μs
HSO freq. range with resistive load	1Hz–500Hz (at max. load resistance of 470kΩ)	1Hz–32kHz (at max. load resistance of 1.5kΩ)
Maximum ON voltage drop	0.5VDC	0.4VDC
Short circuit protection	Yes	No
Voltage Reference	Digital output power supply	3.5VDC to 28.8VDC, unrelated to the voltage of either the I/O module or the controller
Output power supply		
Nominal operating voltage	24VDC	
Operating voltage	20.4VDC to 28.8VDC	

Notes:

10. Output 32 can be wired either as pnp (source) or npn (sink). pnp and npn can be wired simultaneously.
11. Output 32 can be used as a high speed output.
12. When an output load causes a short-circuit, the system disconnects that output and lights the S.C. LED on the module's front panel. The short circuit is also identified by the PLC software. For example, in the Vision OPLC, SB 5 turns on and SDW 5, containing a bitmap, indicates which module has caused the short-circuit. For more information, refer to the PLC online help.

Dimensions

Size (W x H x D)	80 x 135 x 60mm (3.15 x 5.31 x 2.36"). For exact dimensions, refer to the product installation guide.
Weight (approximate)	383g (13.5oz)

Environmental

Operating temperature	0° to 50°C (32° to 122°F)
Storage temperature	-20° to 60°C (-4° to 140°F)
Relative Humidity (RH)	10% to 95% (non-condensing)
Mounting	Snap-mounted on 35mm DIN-rail (IP20/NEMA1)

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EX-RC1 Remote I/O Adapter

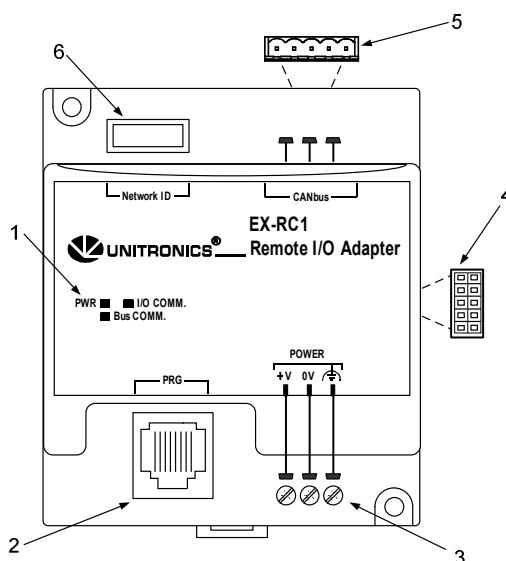
The EX-RC1 interfaces between Unitronics Vision OPLCs and remote I/O Expansion Modules distributed throughout your system.

The adapter is connected to a PLC via CANbus. Each adapter may be connected to up to 8 I/O Expansion Modules. The network may comprise up to 60 nodes, including both PLCs and adapters; note that the PLC must comprise a CANbus port. Communication is via UniCAN, Unitronics' proprietary CANbus protocol.

The EX-RC1 is run by a factory-installed application. The adapter can auto-detect digital I/O Expansion Modules. If the system includes analog modules, the application must be edited. For more information refer to the Remote I/O topics in the VisiLogic Help system.

The EX-RC1 may either be snap-mounted on a DIN rail, or screw-mounted onto a mounting plate.

Component identification	
1	Status indicators
2	PC to EX-RC1 connection port
3	Power supply connection points
4	EX-RC1 to expansion module connection port
5	CANbus port
6	DIP Switches



- Before using this product, it is the responsibility of the user to read and understand this document and any accompanying documentation.
- All examples and diagrams shown herein are intended to aid understanding, and do not guarantee operation. Unitronics accepts no responsibility for actual use of this product based on these examples.
- Please dispose of this product in accordance with local and national standards and regulations.
- Only qualified service personnel should open this device or carry out repairs.

User safety and equipment protection guidelines

This document is intended to aid trained and competent personnel in the installation of this equipment as defined by the European directives for machinery, low voltage, and EMC. Only a technician or engineer trained in the local and national electrical standards should perform tasks associated with the device's electrical wiring.

Symbols are used to highlight information relating to the user's personal safety and equipment protection throughout this document. When these symbols appear, the associated information must be read carefully and understood fully.

Symbol	Meaning	Description
	Danger	The identified danger causes physical and property damage.
	Warning	The identified danger can cause physical and property damage.
	Caution	Use caution.



- Failure to comply with appropriate safety guidelines can result in severe personal injury or property damage. Always exercise proper caution when working with electrical equipment.



- Check the user program before running it.
- Do not attempt to use this device with parameters that exceed permissible levels.
- Install an external circuit breaker and take appropriate safety measures against short-circuiting in external wiring.
- To avoid damaging the system, do not connect / disconnect the device when the power is on.

Environmental Considerations



- Do not install in areas with: excessive or conductive dust, corrosive or flammable gas, moisture or rain, excessive heat, regular impact shocks or excessive vibration.

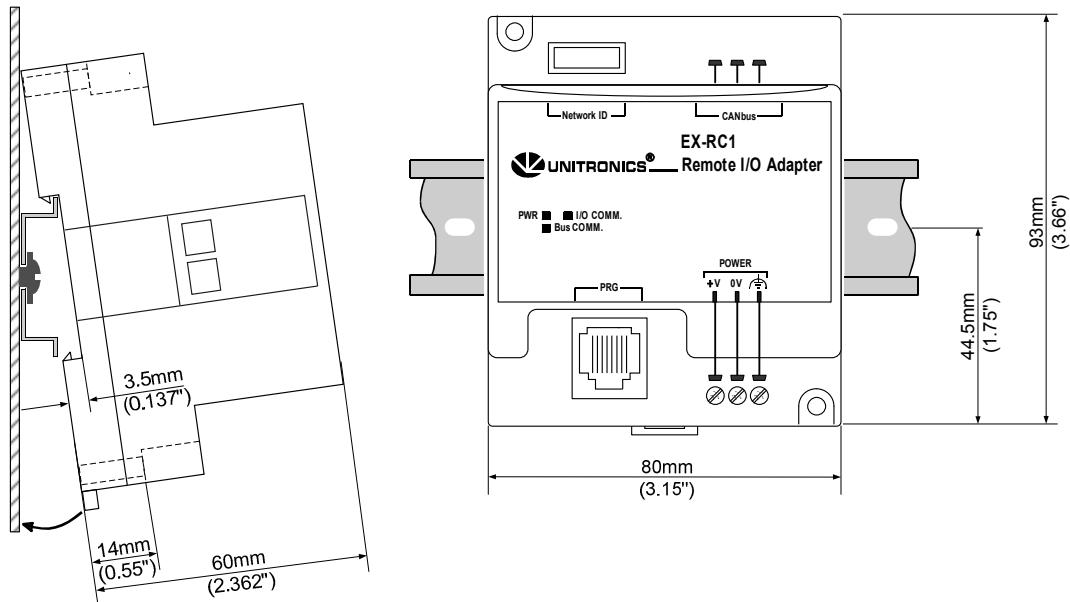


- Leave a minimum of 10mm space for ventilation between the top and bottom edges of the device and the enclosure walls.
- Do not place in water or let water leak onto the unit.
- Do not allow debris to fall inside the unit during installation.

Mounting the Module

DIN-rail mounting

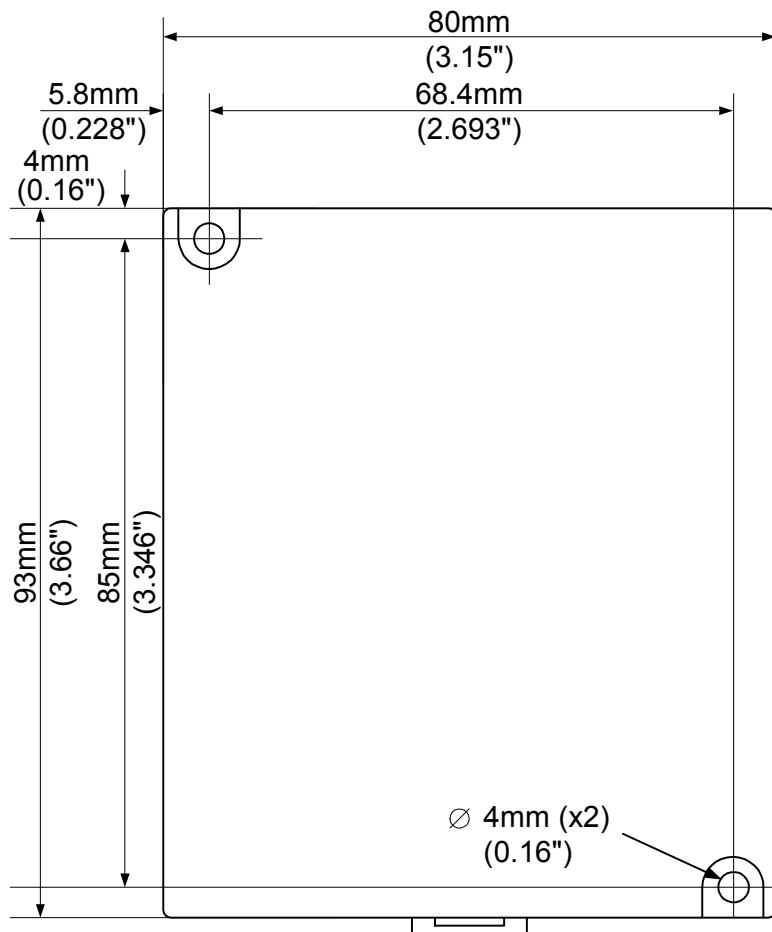
Snap the device onto the DIN rail as shown below; the module will be squarely situated on the DIN rail.



Screw-Mounting

The figure below is not drawn to scale. It may be used as a guide for screw-mounting the module.

Mounting screw type: either M3 or NC6-32.



Setting the Unit ID Number

The ID number range is from 1 to 60.

The DIP switch settings represent the ID number as a binary value as shown in the following figures.

Unit ID	1 (Default)	2	59	60
Settings	 ON I OFF 1 2 3 4 5 6			

Connecting Expansion Modules

An adapter provides the interface between the OPLC and an expansion module. To connect the I/O module to the adapter or to another module:

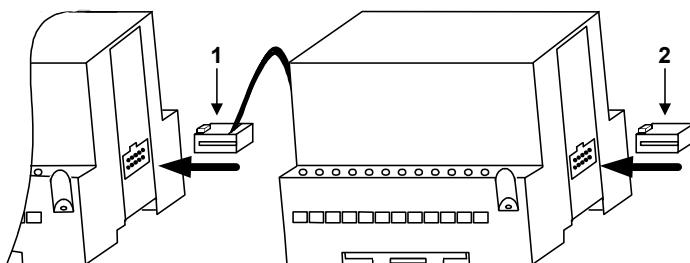
- Push the module-to-module connector into the port located on the right side of the device.

Note that there is a protective cap provided with the adapter. This cap covers the port of the final I/O module in the system.



- To avoid damaging the system, do not connect or disconnect the device when the power is on.

Component identification	
1	Module-to-module connector
2	Protective cap



Wiring



- Do not touch live wires.
- Unused pins should not be connected. Ignoring this directive may damage the device.
- Double-check all wiring before turning on the power supply.
- Do not connect the 'Neutral or 'Line' signal of the 110/220VAC to the device's 0V pin.
- In the event of voltage fluctuations or non-conformity to voltage power supply specifications, connect the device to a regulated power supply.
- Double-check all the wiring before turning on the power supply.

Wiring Procedures

Use crimp terminals for wiring; use 26-14 AWG wire (0.13 mm^2 – 3.31 mm^2) for all wiring purposes.

1. Strip the wire to a length of $7\pm0.5\text{mm}$ (0.250–0.2.08 inches).
 2. Unscrew the terminal to its widest position before inserting a wire.
 3. Insert the wire completely into the terminal to ensure that a proper connection can be made.
 4. Tighten enough to keep the wire from pulling free.
- To avoid damaging the wire, do not exceed a maximum torque of $0.5\text{ N}\cdot\text{m}$ (5 kgf·cm).
 - Do not use tin, solder, or any other substance on stripped wire that might cause the wire strand to break.
 - Install at maximum distance from high-voltage cables and power equipment.

Wiring Power Supply

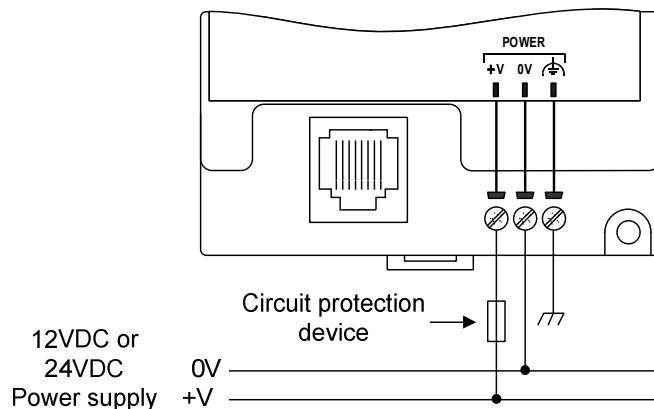
Connect the "positive" cable to the "+V" terminal, and the "negative" to the "0V" terminal.

Earthing the Power Supply

To maximize system performance, avoid electromagnetic interference by:

- Mounting the module on a metal panel.
- Earthing the module's power supply: connect one end of a 14 AWG wire to the chassis signal; connect the other end to the panel.

Note: If possible, the wire used to earth the power supply should not exceed 10 cm in length. However, it is recommended to earth the module in all cases.

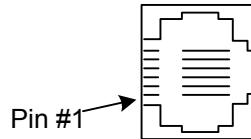


Communication

Connecting the EX-RC1 to a PC

Connect the PC to the adapter via the programming cable. The pinout below shows the RS232 port signals.

Pin #	Description
1	—
2	0V reference
3	TXD signal
4	RXD signal
5	0V reference
6	—



Connecting the EX-RC1 to the CANbus network

Connect the EX-RC1 adapter to an OPLC as shown below. The module communicates via Unitronics' proprietary UniCAN protocol. UniCAN can comprise up to 60 nodes, including PLCs and EX-RC1 remote I/O adapters.

The CANbus port is galvanically isolated.

CANbus Wiring

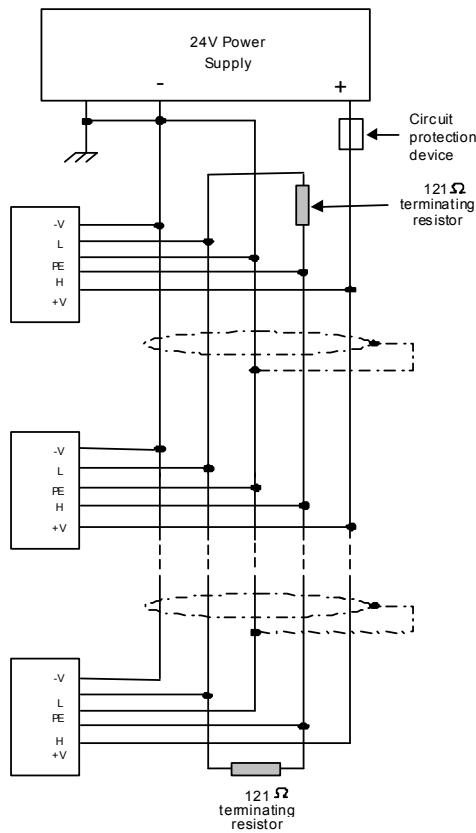
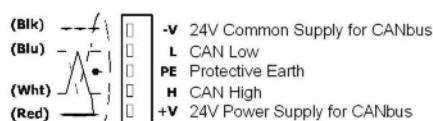
Network terminators: Place terminators at each end of the CANbus network.

Resistance must be set to 1%, 121Ω, 1/4W.

Connect ground signal to the earth at only one point, near the power supply.

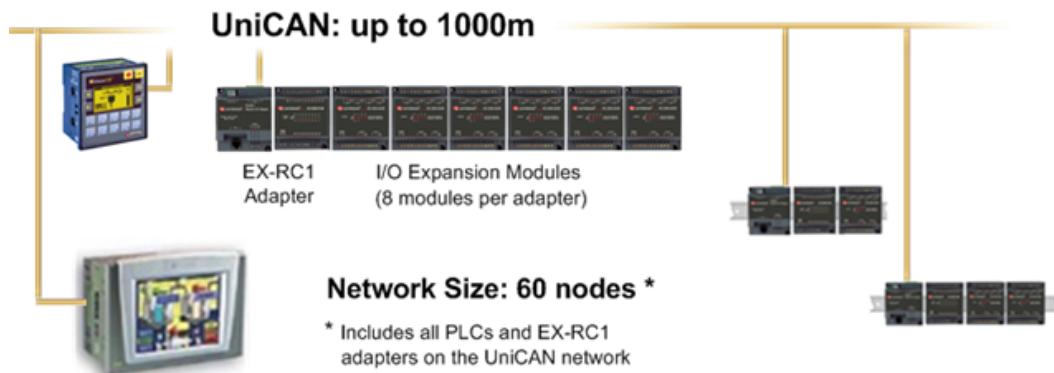
The network power supply need not be at the end of the network.

CANbus Connector



Network Layout

The EX-RC1 enables you to remotely locate I/Os up to 1 kilometer from a PLC. You can include both PLCs and adapters on the UniCAN network, up to a total of 60 nodes.



EX-RC1 Technical Specifications

I/O module capacity	Up to 8 I/O modules can be connected to a single adapter. The number of I/Os may vary according to module.	
Power supply	12VDC or 24VDC	
Permissible range	10.2 to 28.8VDC	
Quiescent current	90mA@12VDC; 50mA@24VDC	
Max. current consumption	650mA @ 12VDC; 350mA @ 24VDC	
Current supply for I/O modules	800mA maximum from 5V. See Note 1	
Status indicators		
(PWR)	Green LED—	Lit when power is supplied.
(I/O COMM.)	Green LED—	Lit when communication is established between the adapter to the other units.
		Blinks 0.5sec ON 0.5sec OFF when adapter is in Stop mode.
(Bus COMM.)	Green LED—	Lit when communication is established between the adapter and the OPLC.

Notes

1. Example: 2 IO-DI8-T08 units consume a maximum of 140mA of the 5VDC supplied by the adapter.

Communication

RS232 port	1	
Galvanic isolation	No	
Voltage limits	±20V	
Cable length	Up to 15m (50')	
CANbus port	1	
Nodes	60	
Power requirements	24VDC (±4%), 40mA max. per unit	
Galvanic isolation	Yes, between CANbus and adapter	
Cable type	Twisted-pair; DeviceNet® thick shielded twisted pair cable is recommended.	
Cable length/baud rate	25 m 1 Mbit/s 100 m 500 Kbit/s 250 m 250 Kbit/s 500 m 125 Kbit/s 500 m 100 Kbit/s 1000 m* 50 Kbit/s 1000 m* 20 Kbit/s	* If you require cable lengths over 500 meters, contact technical support.

Environmental

Operating temperature	0° to 50°C (32 to 122°F)
Storage temperature	-20° to 60°C (-4 to 140°F)
Relative Humidity (RH)	5% to 95% (non-condensing)
Dimensions (WxHxD)	80mm x 93mm x 60mm (3.15" x 3.66" x 2.36")
Weight	135g (4.76 oz.)
Mounting	Either onto a 35mm DIN-rail or screw-mounted.

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POWER SUPPLY

- AC 100-240V Wide-range Input
- Width only 60mm
- Efficiency up to 93.5%
- 150% (360W) Peak Load Capability
- Easy Fuse Tripping due to High Overload Current
- Active Power Factor Correction (PFC)
- Negligible low Inrush Current Surge
- Short-term Operation down to 60Vac and up to 300Vac
- Full Power Between -25°C and +60°C
- DC-OK Relay Contact
- Quick-connect Spring-clamp Terminals
- 3 Year Warranty

GENERAL DESCRIPTION

The most outstanding features of this Dimension Q-Series DIN-rail power supply are the high efficiency and the small size, which are achieved by a synchronous rectification and further novel design details. The Q-Series is part of the Dimension family, existing alongside the lower featured C-Series.

With short-term peak power capability of 150% and built-in large sized output capacitors, these features help start motors, charge capacitors and absorb reverse energy and often allow a unit of a lower wattage class to be used.

High immunity to transients and power surges as well as low electromagnetic emission makes usage in nearly every environment possible.

The integrated output power manager, a wide range input voltage design and virtually no input inrush current make installation and usage simple. Diagnostics are easy due to the dry DC-ok contact, a green DC-ok LED and red overload LED.

Unique quick-connect spring-clamp terminals allow a safe and fast installation and a large international approval package for a variety of applications makes this unit suitable for nearly every situation.

ORDER NUMBERS

Power Supply	QS10.241	24-28V Standard unit
	QS10.241-A1	ATEX approved unit
	QS10.241-C1	Conformal coated unit
	QS10.241-D1	Extended DC-Input
Accessory	ZM1.WALL	Wall mount bracket
	ZM13.SIDE	Side mount bracket
	YR2.DIODE	Redundancy module
	UF20.241	Buffer module

SHORT-FORM DATA

Output voltage	DC 24V	
Adjustment range	24 - 28V	
Output current	10 – 9A 15 – 13.5A	continuous for typ. 4s
Output power	240W 360W	continuous for typ. 4s
Output ripple	< 50mVpp	20Hz to 20MHz
Input voltage	AC 100-240V	±15%
Mains frequency	50-60Hz	±6%
AC Input current	2.22 / 1.22A	at 120 / 230Vac
Power factor	0.98 / 0.92	at 120 / 230Vac
AC Inrush current	typ. 4 / 7A peak	at 120 / 230Vac
Efficiency	92.6 / 93.5%	at 120 / 230Vac
Losses	19.1 / 16.7W	at 120 / 230Vac
Temperature range	-25°C to +70°C	operational
Derating	6W/°C	+60 to +70°C
Hold-up time	typ. 27 / 28ms	at 120 / 230Vac
Dimensions	60x124x117mm	WxHxD

MARKINGS



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TERMINOLOGY AND ABREVIATIONS

PE and  symbol	PE is the abbreviation for Protective Earth and has the same meaning as the symbol  .
Earth, Ground	This document uses the term "earth" which is the same as the U.S. term "ground".
T.b.d.	To be defined, value or description will follow later.
AC 230V	A figure displayed with the AC or DC before the value represents a nominal voltage with standard tolerances (usually $\pm 15\%$) included. E.g.: DC 12V describes a 12V battery disregarding whether it is full (13.7V) or flat (10V)
230Vac	A figure with the unit (Vac) at the end is a momentary figure without any additional tolerances included.
50Hz vs. 60Hz	As long as not otherwise stated, AC 230V parameters are valid at 50Hz mains frequency.
may	A key word indicating flexibility of choice with no implied preference.
shall	A key word indicating a mandatory requirement.
should	A key word indicating flexibility of choice with a strongly preferred implementation.

1. INTENDED USE

This device is designed for installation in an enclosure and is intended for the general use such as in industrial control, office, communication, and instrumentation equipment.

Do not use this power supply in aircraft, trains, nuclear equipment or similar systems where malfunction may cause severe personal injury or threaten human life.

This device is designed for use in hazardous, non-hazardous, ordinary or unclassified locations.

2. INSTALLATION REQUIREMENTS

This device may only be installed and put into operation by qualified personnel.

This device does not contain serviceable parts. The tripping of an internal fuse is caused by an internal defect.

If damage or malfunction should occur during installation or operation, immediately turn power off and send unit to the factory for inspection.

Mount the unit on a DIN-rail so that the output terminals are located on the top and the input terminals are located on the bottom of the unit. For other mounting orientations see de-rating requirements in this document. See chapter 24.14.

This device is designed for convection cooling and does not require an external fan. Do not obstruct airflow and do not cover ventilation grid (e.g. cable conduits) by more than 30%!

Keep the following installation clearances: 40mm on top, 20mm on the bottom, 5mm on the left and right sides are recommended when the device is loaded permanently with more than 50% of the rated power. Increase this clearance to 15mm in case the adjacent device is a heat source (e.g. another power supply).



Risk of electrical shock, fire, personal injury or death.

- Do not use the power supply without proper grounding (Protective Earth). Use the terminal on the input block for earth connection and not one of the screws on the housing.
- Turn power off before working on the device. Protect against inadvertent re-powering.
- Make sure that the wiring is correct by following all local and national codes.
- Do not modify or repair the unit.
- Do not open the unit as high voltages are present inside.
- Use caution to prevent any foreign objects from entering the housing.
- Do not use in wet locations or in areas where moisture or condensation can be expected.
- Do not touch during power-on, and immediately after power-off. Hot surfaces may cause burns.

3. AC-INPUT

AC input	nom.	AC 100-240V	suitable for TN-, TT- and IT mains networks
AC input range	min.	85-276Vac	continuous operation
	min.	60-85Vac	full power for 200ms, no damage between 0 and 85Vac
	min.	276-300Vac	< 500ms
Allowed voltage L or N to earth	max.	276Vac	continuous, IEC 62103
Input frequency	nom.	50-60Hz	$\pm 6\%$
Turn-on voltage	typ.	81Vac	steady-state value, see Fig. 3-1
Shut-down voltage	typ.	63Vac	steady-state value, see Fig. 3-1
	typ.	55Vac	dynamic value

	AC 100V	AC 120V	AC 230V
Input current	typ. 2.65A	2.22A	1.22A at 24V, 10A, see Fig. 3-3
Power factor *)	typ. 0.99	0.98	0.92 at 24V, 10A, see Fig. 3-4
Crest factor **)	typ. 1.65	1.67	1.85 at 24V, 10A
Start-up delay	typ. 800ms	650ms	340ms see Fig. 3-2
Rise time	typ. 8ms	8ms	8ms 0mF, 24V, 10A, see Fig. 3-2
	typ. 15ms	15ms	15ms 10mF, 24V, 10A, see Fig. 3-2
Turn-on overshoot	max. 100mV	100mV	100mV see Fig. 3-2

*) The power factor is the ratio of the true (or real) power to the apparent power in an AC circuit.

**) The crest factor is the mathematical ratio of the peak value to RMS value of the input current waveform.

Fig. 3-1 Input voltage range

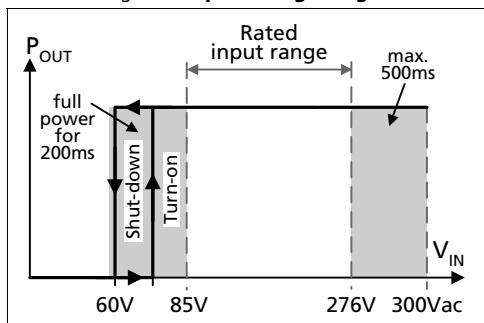


Fig. 3-2 Turn-on behavior, definitions

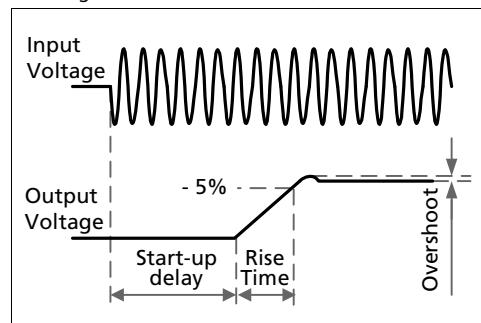


Fig. 3-3 Input current vs. output load at 24V

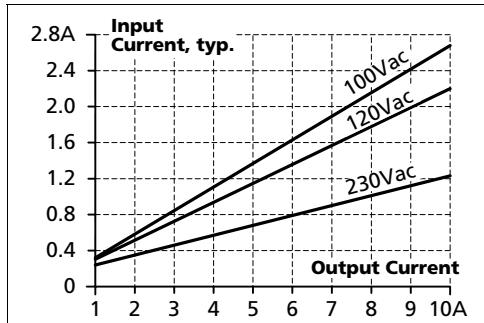
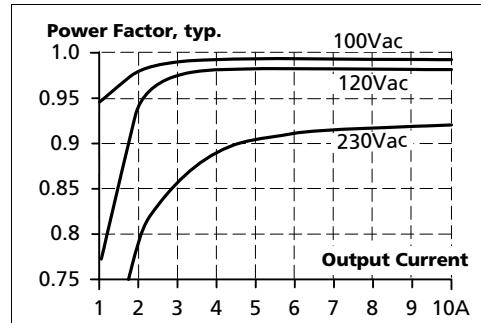


Fig. 3-4 Power factor vs. output load



4. DC-INPUT

QS10.241, QS10.241-A1, QS10.241-C1:

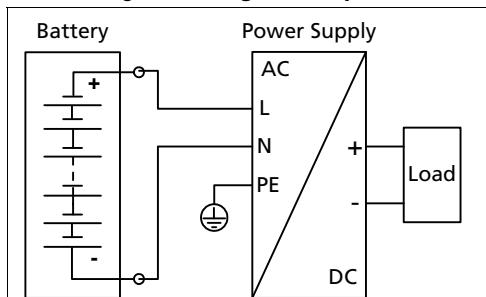
DC input	nom.	DC 110-150V	-20%/+25%
DC input range	min.	88-187Vdc	continuous operation
DC input current	typ.	2.37A	110Vdc, at 24V, 10A

QS10.241-D1:

DC input	nom.	DC 110-300V	-20%/+25%
DC input range	min.	88-375Vdc	continuous operation
DC input current	typ.	2.37 / 0.85A	110/300Vdc, at 24V, 10A

All units:

Allowed Voltage L/N to Earth	max.	375Vdc	continuous, IEC 62103
Turn-on voltage	typ.	80Vdc	steady state value
Shut-down voltage	typ.	55Vdc	steady state value

Fig. 4-1 Wiring for DC Input

Instructions for DC use:

- Use a battery or similar DC source.
For other sources contact PULS
- Connect +pole to L and -pole to N.
- Connect the PE terminal to a earth wire or to the machine ground.
- A supply from the intermediate DC-bus of a frequency converter is not recommended and can cause a malfunction or damage the unit.

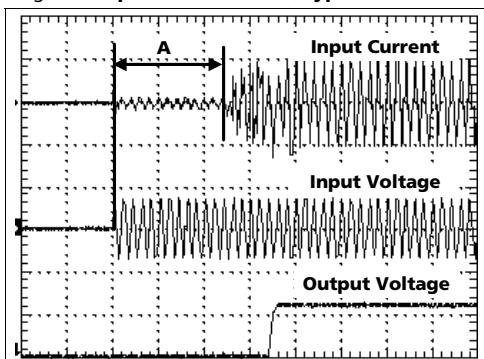
5. INPUT INRUSH CURRENT

An active inrush limitation circuit limits the input inrush current after turn-on of the input voltage and after short input voltage interruptions.

The charging current into EMI suppression capacitors is disregarded in the first microseconds after switch-on.

		AC 100V	AC 120V	AC 230V	
Inrush current	max.	10A _{peak}	10A _{peak}	10A _{peak}	over entire temperature range
	typ.	5A _{peak}	4A _{peak}	7A _{peak}	over entire temperature range
Inrush energy	max.	4A ² s	4A ² s	4A ² s	over entire temperature range
Inrush delay (A)	typ.	650ms	520ms	250ms	see (A) in Fig. 5-1

Fig. 5-1 Input inrush current, typical behavior



A.... Inrush delay

Input: 230Vac
 Output: 24V, 10A
 Ambient: 25°C
 Upper curve: Input current 2A / DIV
 Middle curve: Input voltage 500V / DIV
 Lower curve: Output voltage 20V / DIV
 Time basis: 100ms / DIV

6. OUTPUT

Output voltage	nom.	24V	
Adjustment range	min.	24-28V	guaranteed
	max.	30V ***)	at clockwise end position of potentiometer
Factory setting	typ.	24.1V	±0.2%, at full load, cold unit
Line regulation	max.	10mV	60-300Vac
Load regulation	max.	100mV	static value, 0A → 10A
Ripple and noise voltage	max.	50mVpp	20Hz to 20MHz, 50Ohm
Output current	nom.	10A	continuously available at 24V, see Fig. 6-1
	nom.	9A	continuously available at 28V, see Fig. 6-1
	nom.	15A *)	short term available BonusPower® *), at 24V, for typical 4s, see Fig. 6-1
	nom.	13.5A *)	short term available BonusPower® *), at 28V, for typical 4s, see Fig. 6-1
Output power	nom.	240W / 252W	continuously available at 24V / 28V
	nom.	360W / 378W *)	short term available BonusPower® *) at 24V / 28V
BonusPower® time	typ.	4s	duration until the output voltage dips, see Fig. 6-2
	min.	3s	
	max.	5s	
BonusPower® recovery time	typ.	7s	overload free time to reset power manager, see Fig. 6-3
Overload behaviour		cont. current	
Short-circuit current	min.	8A **)	continuous, load impedance 100mOhm, see Fig. 6-1
	max.	12.5A **)	continuous, load impedance 100mOhm, see Fig. 6-1
	min.	21A **)	during BonusPower® *), load impedance 100mOhm
	max.	27A **)	during BonusPower® *), load impedance 100mOhm
	max.	15A **)	continuous, load impedance <10mOhm, see Fig. 6-1
Output capacitance	typ.	7 000µF	included inside the power supply

*) BonusPower®, short term power capability (up to typ. 4s)

The power supply is designed to support loads with a higher short-term power requirement without damage or shutdown. The short-term duration is hardware controlled by an output power manager. This BonusPower® is repeatedly available. Detailed information can be found in chapter 24.1. If the power supply is loaded longer with the BonusPower® than shown in the Bonus-time diagram (see Fig. 6-2), the max. output power is automatically reduced to 240/252W.

**) Discharge current of output capacitors is not included.

***) This is the maximum output voltage which can occur at the clockwise end position of the potentiometer due to tolerances. It is not guaranteed value which can be achieved. The typical value is about 28.6V.

Peak current capability (up to several milliseconds)

The power supply can deliver a peak current which is higher than the specified short term current. This helps to start current demanding loads or to safely operate subsequent circuit breakers.

The extra current is supplied by the output capacitors inside the power supply. During this event, the capacitors will be discharged and causes a voltage dip on the output. Detailed curves can be found in chapter 24.2.

Peak current voltage dips	typ.	from 24V to 20.5V	at 20A for 50ms, resistive load
	typ.	from 24V to 18V	at 50A for 2ms, resistive load
	typ.	from 24V to 14V	at 50A for 5ms, resistive load

Fig. 6-1 Output voltage vs. output current, typ.

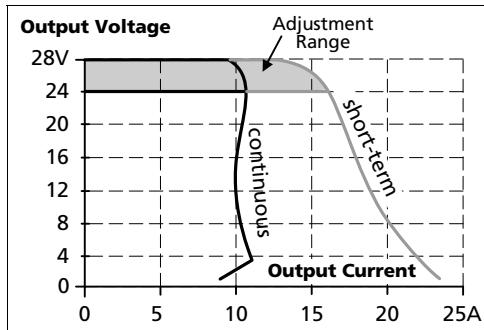


Fig. 6-2 Bonus time vs. output power

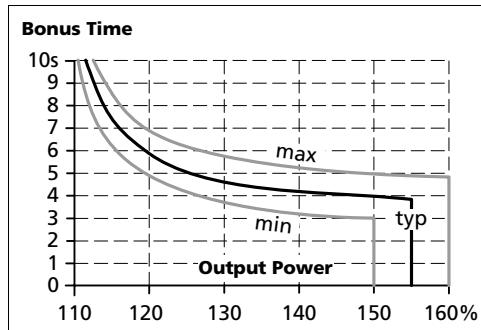
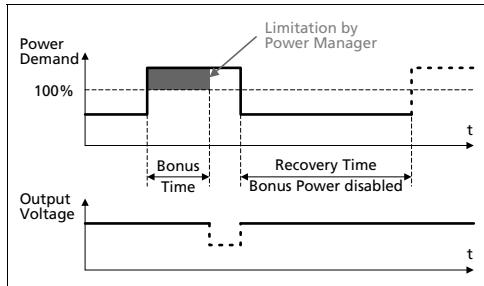


Fig. 6-3 BonusPower® recovery time



The BonusPower® is available as soon as power comes on and immediately after the end of an output short circuit or output overload.

Fig. 6-4 BonusPower® after input turn-on

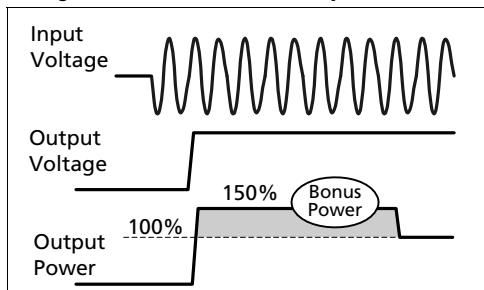
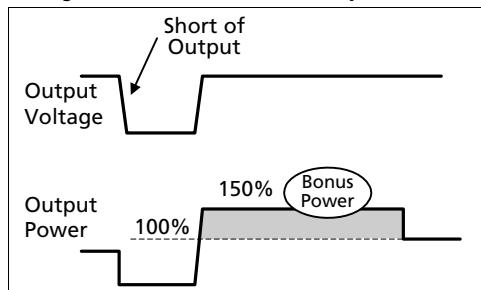


Fig. 6-5 BonusPower® after output short



7. HOLD-UP TIME

		AC 100V	AC 120V	AC 230V	
Hold-up Time	typ.	51ms	53ms	55ms	at 24V, 5A, see Fig. 7-1
	typ.	26ms	27ms	28ms	at 24V, 10A, see Fig. 7-1

Fig. 7-1 Hold-up time vs. input voltage

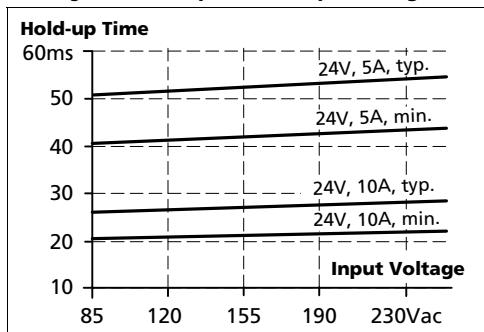
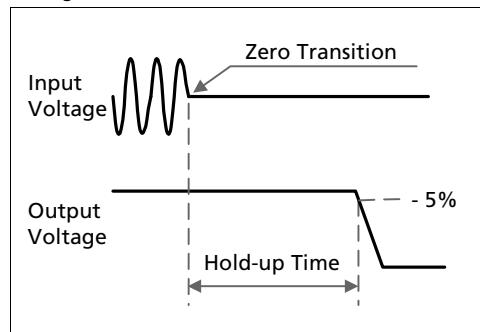


Fig. 7-2 Shut-down behavior, definitions

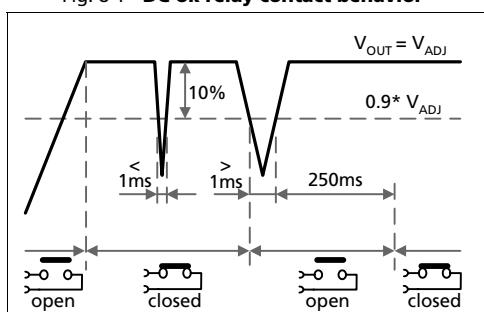


8. DC-OK RELAY CONTACT

This feature monitors the output voltage, which is produced by the power supply itself. It is independent of a back-fed voltage from a unit connected in parallel to the power supply output.

Contact closes	As soon as the output voltage reaches the adjusted output voltage level.		
Contact opens	As soon as the output voltage dips more than 10% below the adjusted output voltage. Short dips will be extended to a signal length of 250ms. Dips shorter than 1ms will be ignored.		
Contact re-closes	As soon as the output voltage exceeds 90% of the adjusted voltage.		
Contact ratings	max min	60Vdc 0.3A, 30Vdc 1A, 30Vac 0.5A 1mA at 5Vdc	resistive load min. permissible load
Isolation voltage	See dielectric strength table in section 18.		

Fig. 8-1 DC-ok relay contact behavior



Note: The DC-ok feature requires that the output voltage reaches the nominal (=adjusted) level after turn-on in order to function according to specification. If this level cannot be achieved, the overload lamp will be on and the DC-ok contact will be open. The overload signal will only shut off as soon as the adjusted voltage is reached. This is an important condition to consider particularly, if the load is a battery, the power supply is used in parallel or the power supply is used for N+1 redundant systems.

9. EFFICIENCY AND POWER LOSSES

		AC 100V	AC 120V	AC 230V	
Efficiency	typ.	91.5%	92.6%	93.5%	at 24V, 10A
Average efficiency *)	typ.	91.7%	92.4%	92.4%	25% at 2.5A, 25% at 5A, 25% at 7.5A, 25% at 10A
Power losses	typ.	4.4W	4.9W	6.1W	at 24V, 0A
	typ.	22.4W	19.1W	16.7W	at 24V, 10A

*) The average efficiency is an assumption for a typical application where the power supply is loaded with 25% of the nominal load for 25% of the time, 50% of the nominal load for another 25% of the time, 75% of the nominal load for another 25% of the time and with 100% of the nominal load for the rest of the time.

Fig. 9-1 Efficiency vs. output current at 24V, typ

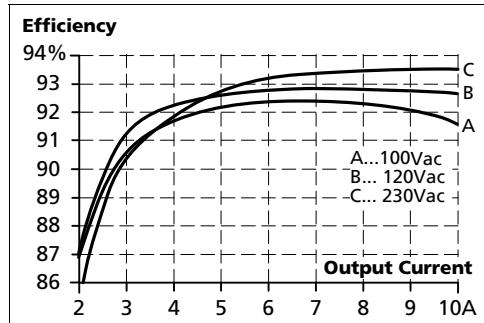


Fig. 9-2 Losses vs. output current at 24V, typ.

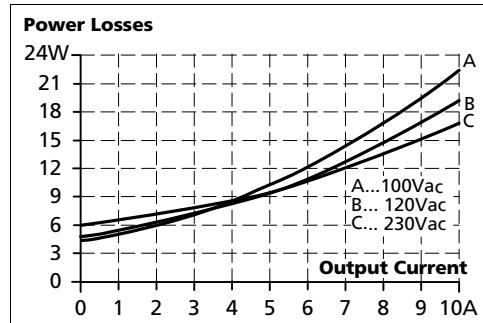


Fig. 9-3 Efficiency vs. input voltage at 24V, 10A, typ.

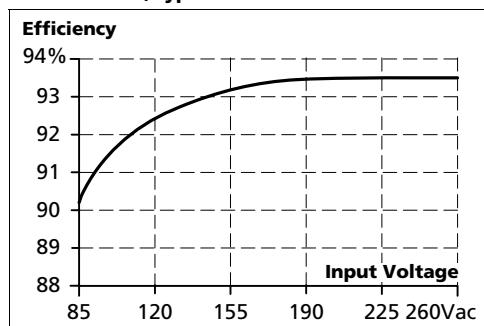
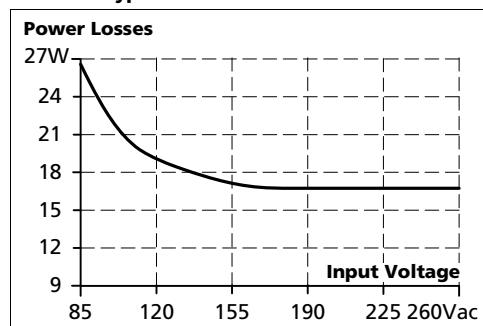


Fig. 9-4 Losses vs. input voltage at 24V, 10A, typ.



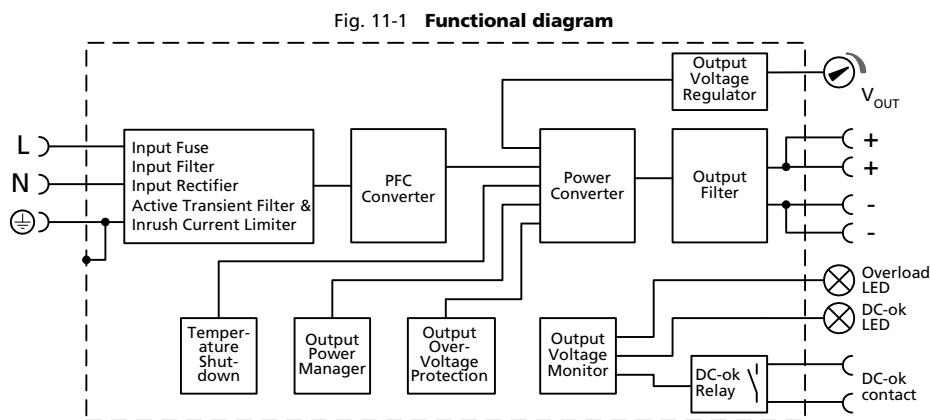
10. RELIABILITY

	AC 100V	AC 120V	AC 230V
Lifetime expectancy *)	58 000h 117 000h 165 000h*)	68 000h 122 000h 192 000h*)	71 000h 117 000h 200 000h*)
MTBF **) SN 29500, IEC 61709	478 000h 827 000h	535 000h 926 000h	581 000h 1 005 000h
MTBF **) MIL HDBK 217F	334 000h 460 000h	341 000h 469 000h	345 000h 474 000h
			at 24V, 10A and 40°C; Ground Benign GB40 at 24V, 10A and 25°C; Ground Benign GB25

*) The **Lifetime expectancy** shown in the table indicates the minimum operating hours (service life) and is determined by the lifetime expectancy of the built-in electrolytic capacitors. Lifetime expectancy is specified in operational hours and is calculated according to the capacitor's manufacturer specification. The manufacturer of the electrolytic capacitors only guarantees a maximum life of up to 15 years (131 400h). Any number exceeding this value is a calculated theoretical lifetime which can be used to compare devices.

) **MTBF stands for **Mean Time Between Failure**, which is calculated according to statistical device failures, and indicates reliability of a device. It is the statistical representation of the likelihood of a unit to fail and does not necessarily represent the life of a product. The MTBF figure is a statistical representation of the likelihood of a device to fail. A MTBF figure of e.g. 1 000 000h means that statistically one unit will fail every 100 hours if 10 000 units are installed in the field. However, it can not be determined if the failed unit has been running for 50 000h or only for 100h.

11. FUNCTIONAL DIAGRAM



12. TERMINALS AND WIRING

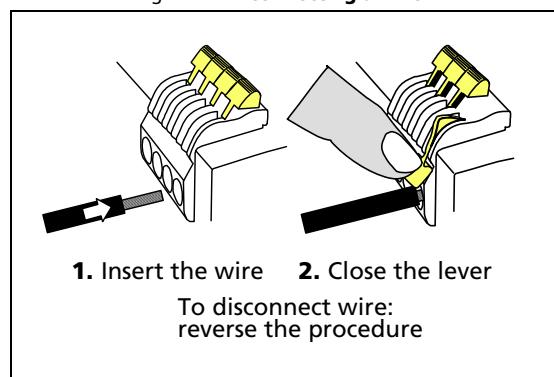
Bi-stable, quick-connect spring clamp terminals. IP20 Finger safe construction. Suitable for field- and factory installation. Shipped in open position.

Type	Input	Output	DC-OK-Signal
Solid wire	spring-clamp terminals	spring-clamp terminals	spring-clamp terminals
Stranded wire	0.5-6mm ²	0.5-6mm ²	0.5-6mm ²
American Wire Gauge	0.5-4mm ²	0.5-4mm ²	0.5-4mm ²
Wire stripping length	20-10 AWG	20-10 AWG	20-10 AWG
Screwdriver	10mm / 0.4inch	10mm / 0.4inch	10mm / 0.4inch
Recommended tightening torque	not applicable	not applicable	not applicable
Pull-out force	not applicable	not applicable	not applicable
	10AWG:80N, 12AWG:60N, 14AWG:50N, 16AWG:40N (according to UL486E)		

Instructions:

- a) Use appropriate copper cables that are designed for minimum operating temperatures of:
60°C for ambient up to 45°C and
75°C for ambient up to 60°C minimum
90°C for ambient up to 70°C minimum.
- b) Follow national installation codes and installation regulations!
- c) Ensure that all strands of a stranded wire enter the terminal connection!
- d) Up to two stranded wires with the same cross section are permitted in one connection point (except PE wire).
- e) Do not use the unit without PE connection.
- f) Unused terminal compartments should be securely tightened.
- g) Ferrules are allowed.

Fig. 12-1 Connecting a wire



13. FRONT SIDE AND USER ELEMENTS

Fig. 13-1 Front side



A Input Terminals (Quick-connect spring-clamp terminals)

N, L Line input

⊕ PE (Protective Earth) input

B Output Terminals (Quick-connect spring-clamp terminals, two pins per pole)

+ Positive output

- Negative (return) output

C DC-OK Relay Contact (Quick-connect spring-clamp terminals)

The DC-OK relay contact is synchronized with the DC-OK LED.
See chapter 8 for details.

D Output voltage potentiometer

Open the flap to adjust the output voltage. Factory set: 24.1V

E DC-OK LED (green)

On, when the output voltage is >90% of the adjusted output voltage

F Overload LED (red)

On, when the voltage on the output terminals is <90% of the adjusted output voltage, or in case of a short circuit in the output. Input voltage is required

Flashing, when the unit has switched off due to over-temperature.

Indicators, LEDs

	Overload LED	DC-OK LED	DC-OK Contact
Normal mode	OFF	ON	Closed
During BonusPower®	OFF	ON	Closed
Overload ($V_{OUT} < 90\%$)	ON	OFF	Open
Output short circuit	ON	OFF	Open
Temperature Shut-down	Intermittent	OFF	Open
No input power	OFF	OFF	Open

14. EMC

The power supply is suitable for applications in industrial environment as well as in residential, commercial and light industry environment without any restrictions.

The CE mark indicates conformance with the EMC directive 2004/108/EC, the low-voltage directive (LVD) 2006/95/EC and the RoHS directive 2011/65/EC. A detailed EMC report is available on request.

EMC Immunity	According generic standards: EN 61000-6-1 and EN 61000-6-2			
Electrostatic discharge	EN 61000-4-2	contact discharge air discharge	8kV 15kV	Criterion A Criterion A
Electromagnetic RF field	EN 61000-4-3	80MHz-2.7GHz	10V/m	Criterion A
Fast transients (Burst)	EN 61000-4-4	input lines output lines DC-OK signal (coupling clamp)	4kV 2kV 1kV	Criterion A Criterion A Criterion A
Surge voltage on input	EN 61000-4-5	L → N L → PE, N → PE	2kV 4kV	Criterion A Criterion A
Surge voltage on output	EN 61000-4-5	+ → - + / - → PE	1kV 1kV	Criterion A Criterion A
Surge voltage on DC-OK	EN 61000-4-5	DC-OK signal → PE	1kV	Criterion A
Conducted disturbance	EN 61000-4-6	0.15-80MHz	10V	Criterion A
Mains voltage dips	EN 61000-4-11	0% of 100Vac 40% of 100Vac 70% of 100Vac 0% of 200Vac 40% of 200Vac 70% of 200Vac	0Vac, 20ms 40Vac, 200ms 70Vac, 500ms 0Vac, 20ms 80Vac, 200ms 140Vac, 500ms	Criterion A Criterion C Criterion A Criterion A Criterion A Criterion A
Voltage interruptions	EN 61000-4-11	0% of 200Vac (=0V)	5000ms	Criterion C
Voltage sags	SEMI F47 0706	dips on the input voltage according to SEMI F47 standard 80% of 120Vac (96Vac) 70% of 120Vac (84Vac) 50% of 120Vac (60Vac)	1000ms 500ms 200ms	Criterion A Criterion A Criterion A
Powerful transients	VDE 0160	over entire load range	750V, 1.3ms	Criterion A

Criteria:

- A: Power supply shows normal operation behavior within the defined limits.
- C: Temporary loss of function is possible. Power supply may shut-down and restarts by itself. No damage or hazards for the power supply will occur.

EMC Emission	According generic standards: EN 61000-6-3 and EN 61000-6-4	
Conducted emission input lines	EN 55011, EN 55022, FCC Part 15, CISPR 11, CISPR 22	Class B
Conducted emission output lines **)	IEC/CISPR 16-1-2, IEC/CISPR 16-2-1	limits for DC power port according EN 61000-6-3 fulfilled
Radiated emission	EN 55011, EN 55022	Class B
Harmonic input current	EN 61000-3-2	fulfilled for class A equipment
Voltage fluctuations, flicker	EN 61000-3-3	fulfilled *)

This device complies with FCC Part 15 rules.

Operation is subjected to following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

*) tested with constant current loads, non pulsing

**) for information only, not mandatory for EN 61000-6-3

Switching Frequencies		
		The power supply has three converters with three different switching frequencies included. Two are nearly constant. The other one is input voltage and load dependent.
Switching frequency 1	35kHz	nearly constant
Switching frequency 2	105kHz	nearly constant
Switching frequency 3	40kHz to 220kHz	input voltage and load dependent

15. ENVIRONMENT

Operational temperature *)	-25°C to +70°C (-13°F to 158°F)	reduce output power according Fig. 15-1
Storage temperature	-40 to +85°C (-40°F to 185°F)	for storage and transportation
Output de-rating	6W/°C	60-70°C (140°F to 158°F)
Humidity **)	5 to 95% r.H.	IEC 60068-2-30
Vibration sinusoidal	2-17.8Hz: ±1.6mm; 17.8-500Hz: 2g 2 hours / axis	IEC 60068-2-6
Shock	30g 6ms, 20g 11ms 3 bumps / direction, 18 bumps in total	IEC 60068-2-27
Altitude	0 to 2000m (0 to 6 560ft) 2000 to 6000m (6 560 to 20 000ft)	without any restrictions reduce output power or ambient temperature, see Fig. 15-2 IEC 62103, EN 50178, overvoltage category II
Altitude de-rating	15W/1000m or 5°C/1000m	> 2000m (6500ft), see Fig. 15-2
Over-voltage category	III II	IEC 62103, EN 50178, altitudes up to 2000m altitudes from 2000m to 6000m
Degree of pollution	2	IEC 62103, EN 50178, not conductive

*) Operational temperature is the same as the ambient temperature and is defined as the air temperature 2cm below the unit.

**) Do not energize while condensation is present

Fig. 15-1 Output current vs. ambient temp.

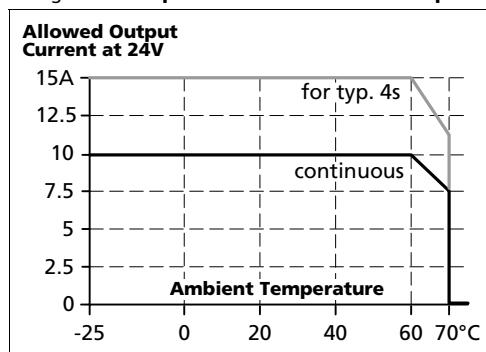
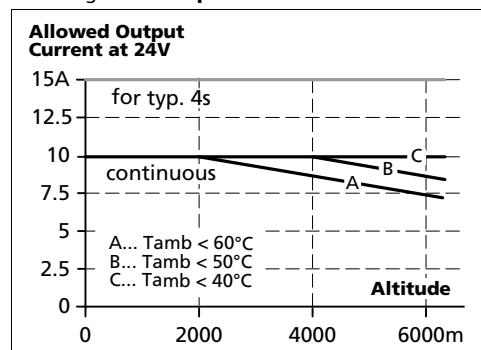


Fig. 15-2 Output current vs. altitude



16. PROTECTION FEATURES

Output protection	Electronically protected against overload, no-load and short-circuits *)	
Output over-voltage protection	typ. 35Vdc max. 39Vdc	In case of an internal power supply defect, a redundant circuit limits the maximum output voltage. The output shuts down and automatically attempts to restart.
Degree of protection	IP 20	EN/IEC 60529
Penetration protection	> 3.5mm	e.g. screws, small parts
Over-temperature protection	yes	Output shut-down with automatic restart
Input transient protection	MOV (Metal Oxide Varistor)	
Internal input fuse	T6.3A H.B.C.	not user replaceable

*) In case of a protection event, audible noise may occur.

17. SAFETY FEATURES

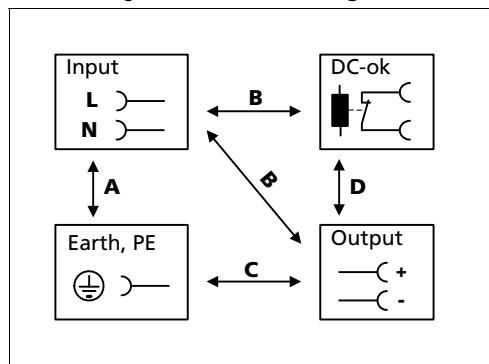
Input / output separation *)	SELV PELV double or reinforced insulation	IEC/EN 60950-1 IEC/EN 60204-1, EN 50178, IEC 62103, IEC 60364-4-41
Class of protection	I	PE (Protective Earth) connection required
Isolation resistance	> 5MOhm	input to output, 500Vdc
PE resistance	< 0.1Ohm	
Touch current (leakage current)	typ. 0.19mA / 0.44mA typ. 0.29mA / 0.65mA typ. 0.53mA / 1.04mA < 0.25mA / 0.54mA < 0.38mA / 0.79mA < 0.74mA / 1.29mA	100Vac, 50Hz, TN-TT-mains / IT-mains 120Vac, 60Hz, TN-TT-mains / IT-mains 230Vac, 50Hz, TN-TT-mains / IT-mains 110Vac, 50Hz, TN-TT-mains / IT-mains 132Vac, 60Hz, TN-TT-mains / IT-mains 264Vac, 50Hz, TN-TT-mains / IT-mains

*) double or reinforced insulation

18. DIELECTRIC STRENGTH

The output voltage is floating and has no ohmic connection to the ground. Type and factory tests are conducted by the manufacturer. Field tests may be conducted in the field using the appropriate test equipment which applies the voltage with a slow ramp (2s up and 2s down). Connect all input-terminals together as well as all output poles before conducting the test. When testing, set the cut-off current settings to the value in the table below.

Fig. 18-1 Dielectric strength



		A	B	C	D
Type test	60s	2500Vac	3000Vac	500Vac	500Vac
Factory test	5s	2500Vac	2500Vac	500Vac	500Vac
Field test	5s	2000Vac	2000Vac	500Vac	500Vac
Cut-off current setting	> 10mA	> 10mA	> 20mA	> 1mA	

To fulfil the PELV requirements according to EN60204-1 § 6.4.1, we recommend that either the + pole, the - pole or any other part of the output circuit shall be connected to the protective earth system. This helps to avoid situations in which a load starts unexpectedly or can not be switched off when unnoticed earth faults occur.

19. APPROVALS

EC Declaration of Conformity		The CE mark indicates conformance with the EMC directive 2004/108/EC, the low-voltage directive (LVD) 2006/95/EC and the RoHS directive 2011/65/EC.
EC Declaration of Conformity (additional for QS10.241-A1)		The CE mark indicates conformance with EMC directive 2004/108/EC and the ATEX directive 94/9/EC (Equipment and protection systems intended for use in potentially explosive atmospheres)
IEC 60950-1 2 nd Edition		CB Scheme, Information Technology Equipment
UL 508		Listed for use as Industrial Control Equipment; U.S.A. (UL 508) and Canada (C22.2 No. 107-1-01); E-File: E198865
UL 60950-1 2 nd Edition		Recognized for use as Information Technology Equipment, Level 5; U.S.A. (UL 60950-1) and Canada (C22.2 No. 60950-1); E-File: E137006
ANSI / ISA 12.12.01-2007 (Class I Div 2)		Recognized for use in Hazardous Location Class I Div 2 T4 Groups A,B,C,D systems; U.S.A. (ANSI / ISA 12.12.01-2007) and Canada (C22.2 No. 213-M1987)
EN 60079-15 ATEX (QS10.241-A1 only)		The unit is suitable for use in Class I Division 2 Groups A, B, C, D locations. Substitution of components may impair suitability for Class I Division 2 environment. Do not disconnect equipment unless power has been switched off. Wiring must be in accordance with Class I, Division 2 wiring methods of the National Electrical Code, NFPA 70, and in accordance with other local or national codes.
Marine		Suitable for use in Class 1 Zone 2 Groups IIa, IIb and IIc locations. Number of ATEX certificate: EPS 09 ATEX 1 236 X The power supply must be built-in in an IP54 enclosure.
SEMI F47		GL (Germanischer Lloyd) classified and ABS (American Bureau for Shipping) PDA Environmental category: C, EMC2 Marine and offshore applications
GOST P		SEMI F47-0706 Ride-through compliance for semiconductor industry. Full SEMI range compliance (Input: AC120V or higher, output: < 240W)
		Certificate of Conformity for Russia and other GUS countries

20. FULFILLED STANDARDS

EN 61558-2-17	Safety of Power Transformers
EN/IEC 60204-1	Safety of Electrical Equipment of Machines
EN/IEC 61131-2	Programmable Controllers
EN 50178, IEC 62103	Electronic Equipment in Power Installations

21. USED SUBSTANCES

The unit does not release any silicone and is suitable for use in paint shops.

The unit conforms to the RoHS directives 2002/95/EC and 2011/65/EC.

Electrolytic capacitors included in this unit do not use electrolytes such as Quaternary Ammonium Salt Systems.

Plastic housings and other molded plastic materials are free of halogens, wires and cables are not PVC insulated.

The production material within our production does not include following toxic chemicals:

Polychlorized Biphenyl (PCB), Polychlorized Terphenyl (PCT), Pentachlorophenol (PCP), Polychlorinated naphthalene (PCN), Polybrom Biphenyl (PBB), Polybrom Bipheny-oxyd (PBO), Polybrominated Diphenylether (PBDE), Polychlorinated Diphenylether (PCDE), Polydibromphenyl Oxyd (PBDO), Cadmium, Asbestos, Mercury, Silicia

22. PHYSICAL DIMENSIONS AND WEIGHT

Weight	900g / 1.98lb
DIN-Rail	Use 35mm DIN-rails according to EN 60715 or EN 50022 with a height of 7.5 or 15mm. The DIN-rail height must be added to the unit depth (117mm) to calculate the total required installation depth.
Installation Clearances	See chapter 2

Fig. 22-1 Front view

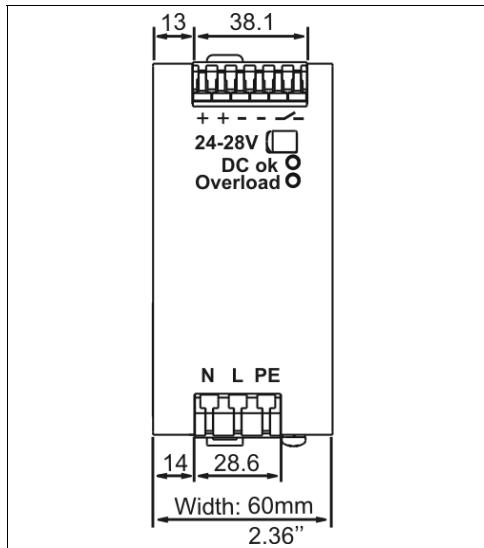
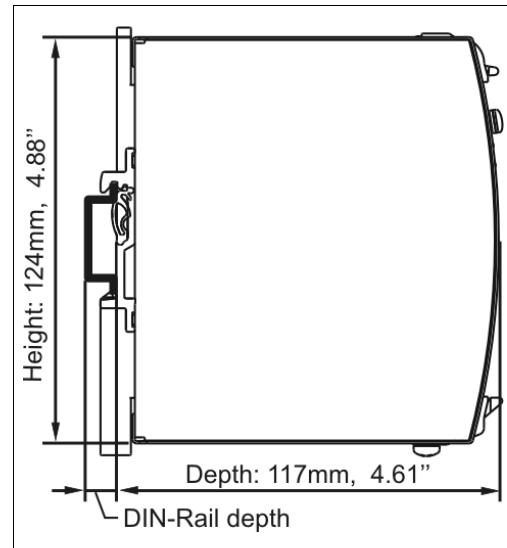


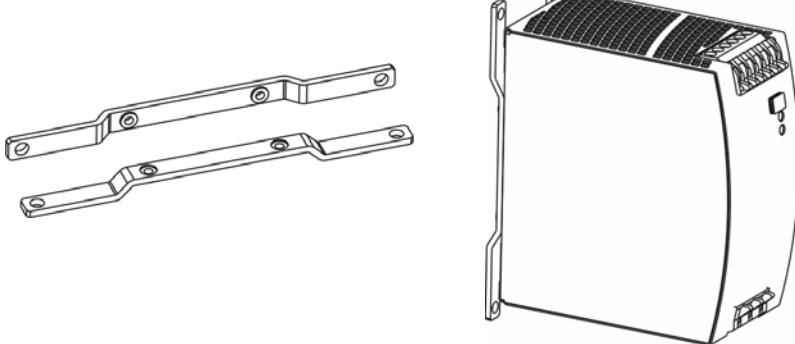
Fig. 22-2 Side view



23. ACCESSORIES

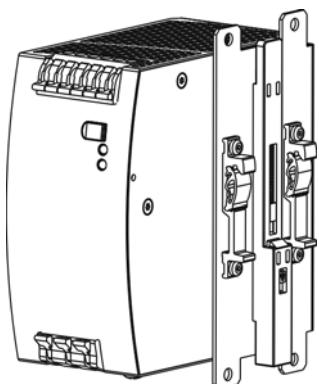
23.1. ZM1.WALL WALL MOUNTING BRACKET

This bracket is used to mount the power supply onto a flat surface without utilizing a DIN-Rail.

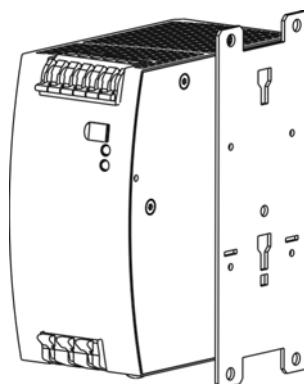


23.2. ZM13.SIDE SIDE MOUNTING BRACKET

This bracket is used to mount Dimension units sideways with or without utilizing a DIN-Rail. The two aluminum brackets and the black plastic slider of the unit have to be detached, so that the steel brackets can be mounted. For sideway DIN-rail mounting, the removed aluminum brackets and the black plastic slider need to be mounted on the steel bracket.



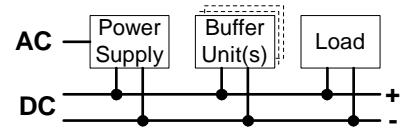
Side mounting with DIN-rail brackets



Side mounting without DIN-rail brackets

23.3. UF20.241 BUFFER MODULE

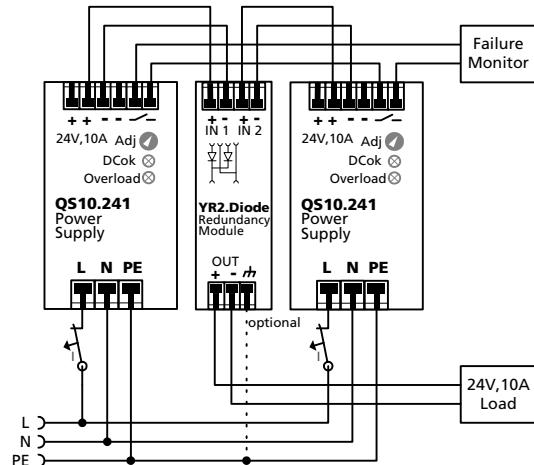
This buffer unit is a supplementary device for DC 24V power supplies. It delivers power to bridge typical mains failures or extends the hold-up time after turn-off of the AC power. In times when the power supply provides sufficient voltages, the buffer unit stores energy in integrated electrolytic capacitors. In case of mains voltage fault, this energy is released again in a regulated process. One buffer module can deliver 20A additional current.



The buffer unit does not require any control wiring. It can be added in parallel to the load circuit at any given point. Buffer units can be added in parallel to increase the output ampacity or the hold-up time.

23.4. YR2.DIODE REDUNDANCY MODULE

The YR2.DIODE is a dual redundancy module, which has two diodes as decoupling devices included. It can be used for various purposes. The most popular application is to configure highly reliable and true redundant power supply systems. Another interesting application is the separation of sensitive loads from non-sensitive loads. This avoids the distortion of the power quality for the sensitive loads which can cause controller failures.



24. APPLICATION NOTES

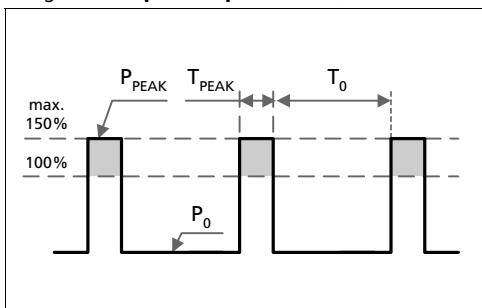
24.1. REPETITIVE PULSE LOADING

Typically, a load current is not constant and varies over time. This power supply is designed to support loads with a higher short-term power demand (=BonusPower®). The short-term duration is hardware controlled by an output power manager and is available on a repeated basis. If the BonusPower® load lasts longer than the hardware controller allows it, the output voltage will dip and the next BonusPower® is available after the BonusPower® recovery time (see chapter 6) has elapsed.

To avoid this, the following rules must be met:

- The power demand of the pulse must be below 150% of the nominal output power.
- The duration of the pulse power must be shorter than the allowed BonusPower® time. (see output section)
- The average (R.M.S.) output current must be below the specified continuous output current.
If the R.M.S. current is higher, the unit will respond with a thermal shut-down after a period of time. Use the maximum duty cycle curve (Fig. 24-2) to check if the average output current is below the nominal current.

Fig. 24-1 Repetitive pulse loads, definitions



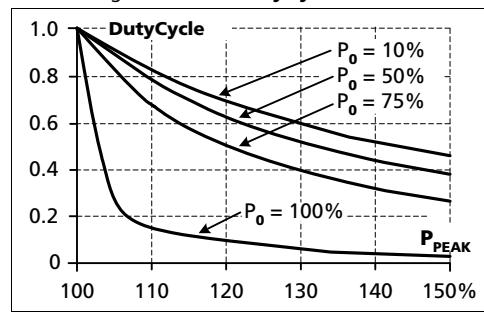
P₀ Base load (W)

P_{PEAK} Pulse load (above 100%)

T₀ Duration between pulses (s)

T_{PEAK} Pulse duration (s)

Fig. 24-2 Max. duty cycle curve



$$\text{DutyCycle} = \frac{T_{\text{peak}}}{T_{\text{peak}} + T_0}$$

$$T_0 = \frac{T_{\text{peak}} - (\text{DutyCycle} \times T_{\text{peak}})}{\text{DutyCycle}}$$

Example: A load is powered continuously with 120W (= 50% of the rated output load). From time to time a peak power of 360W (= 150% of the rated output load) is needed for 1 second.

The question is: How often can this pulse be supplied without overloading the power supply?

- Make a vertical line at $P_{\text{PEAK}} = 150\%$ and a horizontal line where the vertical line crosses the $P_0 = 50\%$ curve. Read the max. duty cycle from the duty cycle-axis (= 0.37)
- Calculate the required pause (base load) length T_0 :
- Result: The required pause length = 1.7s
- Max. repetition rate = pulse + pause length = **2.7s**

$$T_0 = \frac{T_{\text{peak}} - (\text{DutyCycle} \times T_{\text{peak}})}{\text{DutyCycle}} = \frac{1\text{s} - (0.37 \times 1\text{s})}{0.37} = \underline{\underline{1.7\text{s}}}$$

More examples for pulse load compatibility:

P _{PEAK}	P ₀	T _{PEAK}	T ₀
360W	240W	1s	>25s
360W	0W	1s	>1.3s
300W	120W	1s	>0.75s

P _{PEAK}	P ₀	T _{PEAK}	T ₀
360W	120W	0.1s	>0.16s
360W	120W	1s	>1.6s
360W	120W	3s	>4.9s

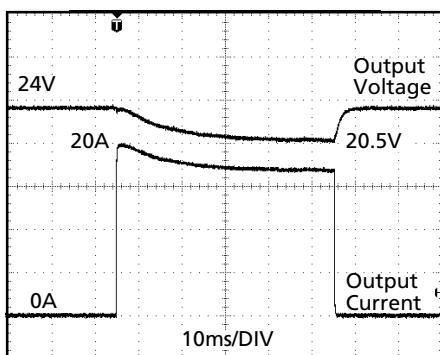
24.2. PEAK CURRENT CAPABILITY

Solenoids, contactors and pneumatic modules often have a steady state coil and a pick-up coil. The inrush current demand of the pick-up coil is several times higher than the steady-state current and usually exceeds the nominal output current (including the PowerBoost). The same situation applies when starting a capacitive load.

Branch circuits are often protected with circuit breakers or fuses. In case of a short or an overload in the branch circuit, the fuse needs a certain amount of over-current to trip or to blow. The peak current capability ensures the safe operation of subsequent circuit breakers.

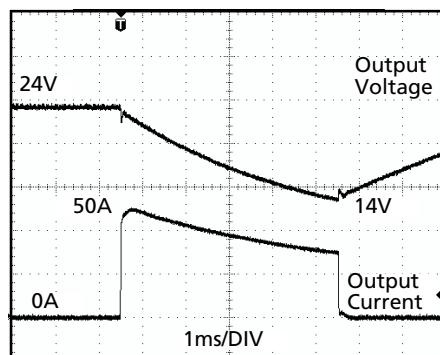
Assuming the input voltage is turned on before such an event, the built-in large sized output capacitors inside the power supply can deliver extra current. Discharging this capacitor causes a voltage dip on the output. The following two examples show typical voltage dips:

Fig. 24-3 Peak load with 2x the nominal current for 50ms, typ.



Peak load 20A (resistive) for 50ms
Output voltage dips from 24V to 20.5V.

Fig. 24-4 Peak load with 5x the nominal current for 5ms, typ.



Peak load 50A (resistive) for 5ms
Output voltage dips from 24V to 14V.

Please note: The DC-OK relay triggers when the voltage dips more than 10% for longer than 1ms.

24.3. BACK-FEEDING LOADS

Loads such as decelerating motors and inductors can feed voltage back to the power supply. This feature is also called return voltage immunity or resistance against Back- E.M.F. (Electro Magnetic Force).

This power supply is resistant and does not show malfunctioning when a load feeds back voltage to the power supply. It does not matter whether the power supply is on or off.

The maximum allowed feed-back-voltage is 35Vdc. The absorbing energy can be calculated according to the built-in large sized output capacitor which is specified in chapter 6.

24.4. EXTERNAL INPUT PROTECTION

The unit is tested and approved for branch circuits up to 20A. An external protection is only required if the supplying branch has an ampacity greater than this. Check also local codes and local requirements. In some countries local regulations might apply.

If an external fuse is necessary or utilized, minimum requirements need to be considered to avoid nuisance tripping of the circuit breaker. A minimum value of 6A B- or 4A C-Characteristic breaker should be used

24.5. CHARGING OF BATTERIES

The power supply can be used to charge lead-acid or maintenance free batteries. (Two 12V batteries in series)

Instructions for charging batteries:

- Set output voltage (measured at no load and at the battery end of the cable) very precisely to the end-of-charge voltage.
- Use a 15A or 16A circuit breaker (or blocking diode) between the power supply and the battery.
- Ensure that the output current of the power supply is below the allowed charging current of the battery.
- Use only matched batteries when putting 12V types in series.
- The return current to the power supply (battery discharge current) is typ. 3mA when the power supply is switched off (except in case a blocking diode is utilized).

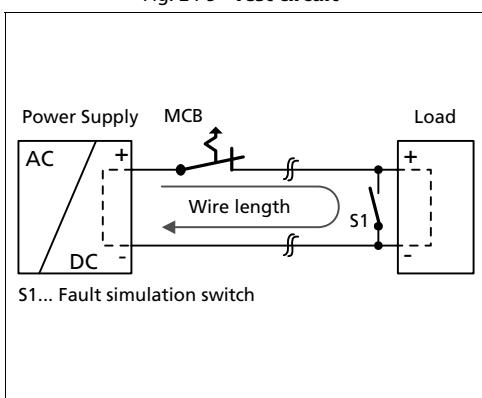
24.6. OUTPUT CIRCUIT BREAKERS

Standard miniature circuit breakers (MCB's or UL1077 circuit breakers) are commonly used for AC-supply systems and may also be used on 24V branches.

MCB's are designed to protect wires and circuits. If the ampere value and the characteristics of the MCB are adapted to the wire size that is used, the wiring is considered as thermally safe regardless of whether the MCB opens or not.

To avoid voltage dips and under-voltage situations in adjacent 24V branches which are supplied by the same source, a fast (magnetic) tripping of the MCB is desired. A quick shutdown within 10ms is necessary corresponding roughly to the ride-through time of PLC's. This requires power supplies with high current reserves and large output capacitors. Furthermore, the impedance of the faulty branch must be sufficiently small in order for the current to actually flow. The best current reserve in the power supply does not help if Ohm's law does not permit current flow. The following table has typical test results showing which B- and C-Characteristic MCBs magnetically trip depending on the wire cross section and wire length.

Fig. 24-5 Test circuit



Maximal wire length*) for a fast (magnetic) tripping:

	0.75mm²	1.0mm²	1.5mm²	2.5mm²
C-2A	23m	29m	48m	69m
C-3A	20m	24m	38m	57m
C-4A	12m	16m	22m	33m
C-6A	5m	7m	9m	14m
C-8A	3m	4m	5m	7m
C-10A	2m	3m	4m	6m
C-13A	1m	1m	2m	2m
B-6A	11m	14m	24m	34m
B-10A	5m	8m	11m	18m
B-13A	4m	6m	8m	10m

*) Don't forget to consider twice the distance to the load (or cable length) when calculating the total wire length (+ and - wire).

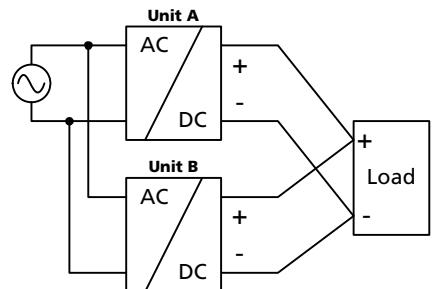
24.7. PARALLEL USE TO INCREASE OUTPUT POWER

Power supplies from the same series (Q-Series) can be paralleled to increase the output power. The output voltage shall be adjusted to the same value ($\pm 100\text{mV}$) with the same load conditions on all units, or the units can be left with the factory settings.

If more than three units are connected in parallel, a fuse or circuit breaker with a rating of 15A or 16A is required on each output. Alternatively, a diode or redundancy module can also be utilized.

Keep an installation clearance of 15mm (left / right) between two power supplies and avoid installing the power supplies on top of each other. Do not use power supplies in parallel in mounting orientations other than the standard mounting orientation (input terminals on bottom and output terminals on the top of the unit) or in any other condition where a derating of the output current is required (e.g. altitude, above 60°C, ...).

Pay attention that leakage current, EMI, inrush current, harmonics will increase when using multiple power supplies.



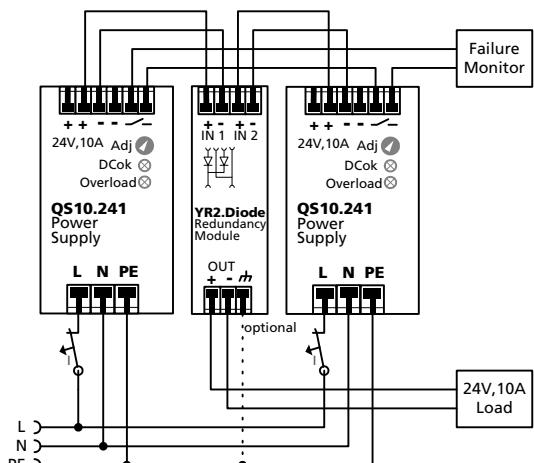
24.8. PARALLEL USE FOR REDUNDANCY

Power supplies can be paralleled for redundancy to gain higher system availability. Redundant systems require a certain amount of extra power to support the load in case one power supply unit fails. The simplest way is to put two power supplies in parallel. This is called a 1+1 redundancy. In case one power supply unit fails, the other one is automatically able to support the load current without any interruption. Redundant systems for a higher power demand are usually built in a N+1 method. E.g. five power supplies, each rated for 10A are paralleled to build a 40A redundant system. For N+1 redundancy the same restrictions apply as for increasing the output power, see also section 24.7.

Please note: This simple way to build a redundant system does not cover failures such as an internal short circuit in the secondary side of the power supply. In such a case, the defective unit becomes a load for the other power supplies and the output voltage can not be maintained any more. This can be avoided by utilizing decoupling diodes which are included in the redundancy module YR2.DIODE.

Recommendations for building redundant power systems:

- Use separate input fuses for each power supply.
- Monitor the individual power supply units. Therefore, use the DC-OK relay contact of the QS10 power supply.
- It is desirable to set the output voltages of all units to the same value ($\pm 100\text{mV}$) or leave it at the factory setting.



24.9. DAISY CHAINING OF OUTPUTS

Daisy chaining (jumping from one power supply output to the next) is allowed as long as the average output current through one terminal pin does not exceed 25A. If the current is higher, use a separate distribution terminal block as shown in Fig. 24-7.

Fig. 24-6 Daisy chaining of outputs

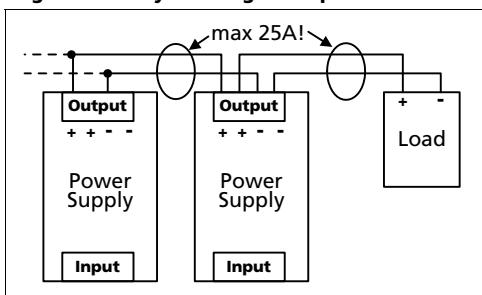
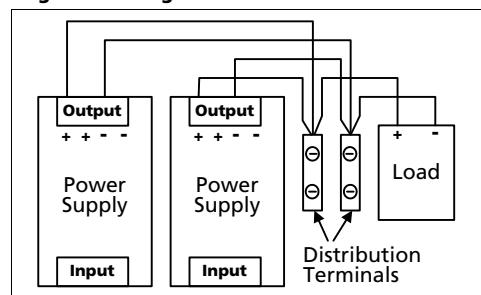


Fig. 24-7 Using distribution terminals



24.10. SERIES OPERATION

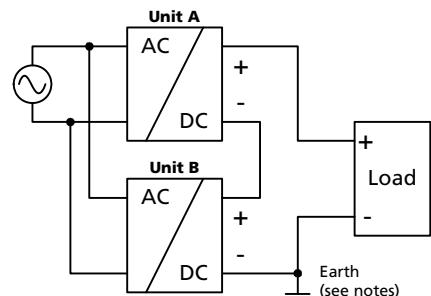
Power supplies of the same type can be connected in series for higher output voltages. It is possible to connect as many units in series as needed, providing the sum of the output voltage does not exceed 150Vdc. Voltages with a potential above 60Vdc are not SELV any more and can be dangerous. Such voltages must be installed with a protection against touching.

Earthing of the output is required when the sum of the output voltage is above 60Vdc.

Avoid return voltage (e.g. from a decelerating motor or battery) which is applied to the output terminals.

Keep an installation clearance of 15mm (left / right) between two power supplies and avoid installing the power supplies on top of each other. Do not use power supplies in series in mounting orientations other than the standard mounting orientation (input terminals on bottom and output terminals on the top of the unit).

Pay attention that leakage current, EMI, inrush current, harmonics will increase when using multiple power supplies.

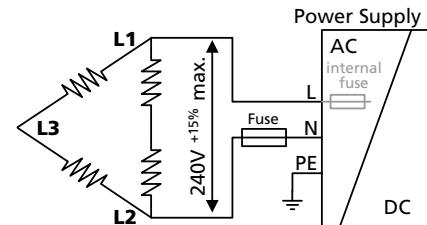


24.11. INDUCTIVE AND CAPACITIVE LOADS

The unit is designed to supply any kind of loads, including unlimited capacitive and inductive loads.

24.12. OPERATION ON TWO PHASES

The power supply can also be used on two-phases of a three-phase-system. Such a phase-to-phase connection is allowed as long as the supplying voltage is below 240V+15%. Use a fuse or a circuit breaker to protect the N input. The N input is internally not protected and is in this case connected to a hot wire. Appropriate fuses or circuit breakers are specified in section 24.4 "External Input Protection".



24.13. USE IN A TIGHTLY SEALED ENCLOSURE

When the power supply is installed in a tightly sealed enclosure, the temperature inside the enclosure will be higher than outside. In such situations, the inside temperature defines the ambient temperature for the power supply.

The following measurement results can be used as a reference to estimate the temperature rise inside the enclosure. The power supply is placed in the middle of the box, no other heat producing items are inside the box

Enclosure: Rittal Typ IP66 Box PK 9519 100, plastic, 180x180x165mm

Load: 24V, 8A; (=80%) load is placed outside the box

Input: 230Vac

Temperature inside enclosure: 47°C (in the middle of the right side of the power supply with a distance of 2cm)

Temperature outside enclosure: 27°C

Temperature rise: 20K

24.14. MOUNTING ORIENTATIONS

Mounting orientations other than input terminals on the bottom and output on the top require a reduction in continuous output power or a limitation in the maximum allowed ambient temperature. The amount of reduction influences the lifetime expectancy of the power supply. Therefore, two different derating curves for continuous operation can be found below:

Curve A1 Recommended output current.

Curve A2 Max allowed output current (results in approximately half the lifetime expectancy of A1).

Fig. 24-8
Mounting Orientation A
(Standard orientation)

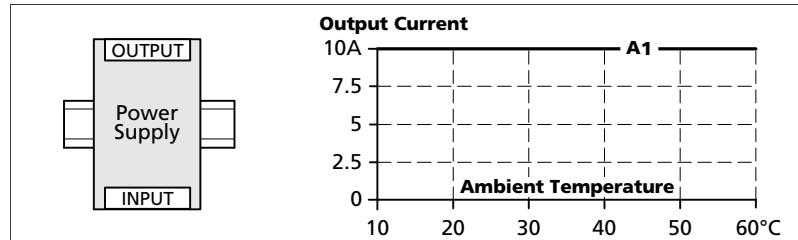


Fig. 24-9
Mounting Orientation B
(Upside down)

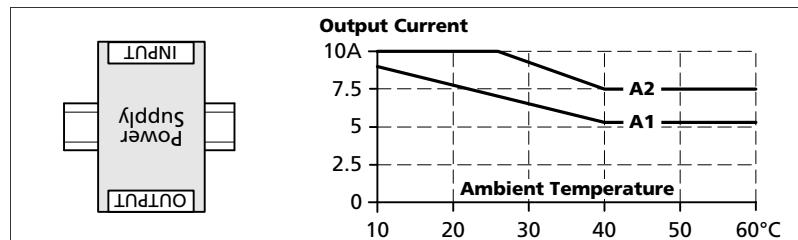


Fig. 24-10
Mounting Orientation C
(Table-top mounting)

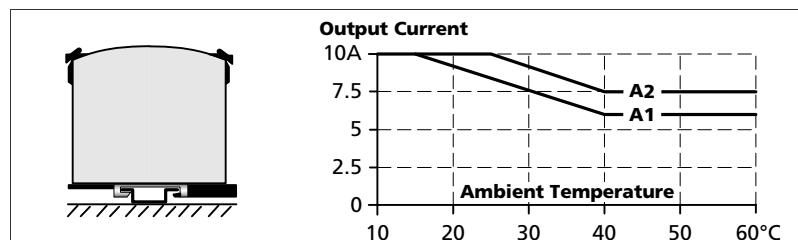


Fig. 24-11
Mounting Orientation D
(Horizontal cw)

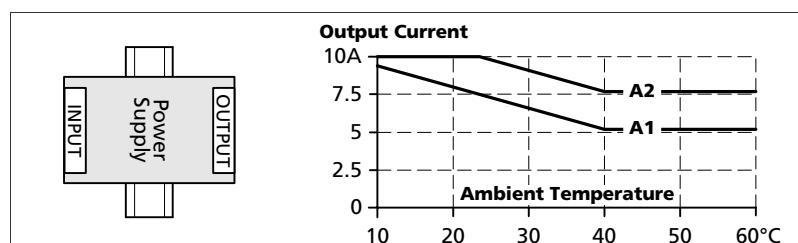
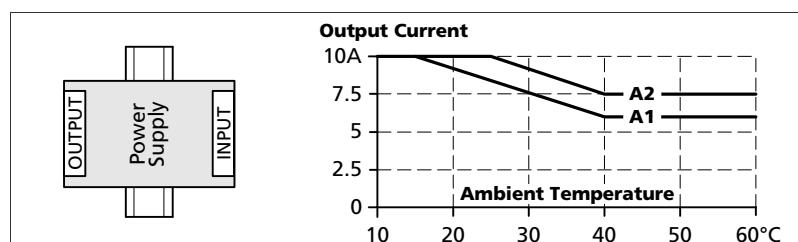


Fig. 24-12
Mounting Orientation E
(Horizontal ccw)



DT 60

Distance Sensor “Fast”

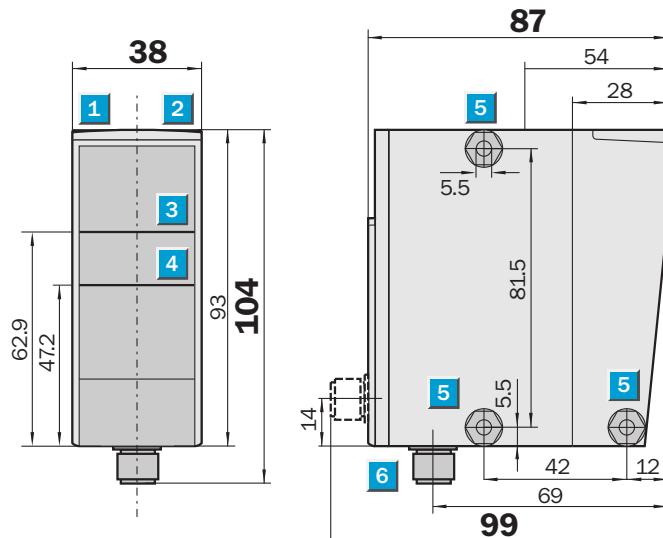


 **Measurement range**
200 ... 5300 mm

Distance Sensor

- Analogue output 4 ... 20 mA
- Teach-in and Plug & Play version
- High measuring accuracy
- Visible red light laser
- Power-On LED
- Acknowledgement after Teach-in

Dimensional drawing



Adjustments possible

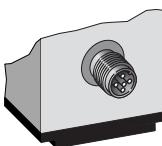
DT 60-P211B
DT 60-N211B



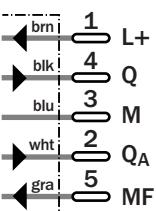
- | | |
|----------|----------------------------------|
| 1 | Power |
| 2 | Function indicator |
| 3 | Optical axis, sender |
| 4 | Optical axis, receiver |
| 5 | Mounting hole |
| 6 | M12 plug, 5-pin |
| 7 | Operating panel Teach-in version |

Connection type

All types



5-pin, M12



Technical data	DT 60-	P211B	N211B	P211B bbee	N211B bbee					
Teach-in version										
Plug & Play version	Measuring range freely selectable									
Measuring range										
(min ... measuring distance)	200 mm ... 5300 mm									
Object with 3% remission	200 mm ... 1000 mm (A)/1400 mm (B)									
Object with 6% remission	200 mm ... 1400 mm (A)/2000 mm (B)									
Object with 18% remission	200 mm ... 2400 mm (A)/3600 mm (B)									
Object with 90% remission	200 mm ... 5000 mm (A)/5300 mm (B)									
Light source¹⁾	Laser diode, red light									
Light spot at 2 m distance	Ø 10 mm									
Supply voltage V_s²⁾	11 ... 30 V DC									
Power consumption³⁾	< 3 W									
Ripple⁴⁾	≤ 5 V _{ss}									
Analogue output (invertable)	4 ... 20 mA									
Accuracy ⁵⁾	± 13 mm									
Reproducibility	± 10 mm									
Resolution	1.5 mm									
Response time	A = 30 ms/B = 50 ms									
Cycle time	5 ms (A)/15 ms (B)									
Output rate	1.2 ms (A)/3.6 ms (B)									
Temperature drift	0.5 mm/K (0.4 mm/K typ.)									
Switching outputs (invertable)	Q									
	Q̄									
DL 60-P: PNP	HIGH = U _v - (< 2 V)/LOW = 0 V									
DL 60-N: NPN	HIGH = U _v /LOW ≤ 2 V									
Output current I_A⁶⁾	100 mA									
Multifunction MF	Laser off									
Connection type	M12 plug, 5-pin									
VDE protection class⁷⁾	II									
Laser protection class	2 (EN 60 825-1)									
Enclosure rating	IP 67									
Ambient temperature	Operation -25 ... +55 °C									
	Storage -25 ... +75 °C									
Weight	202 g									

¹⁾ Average service life 50,000 h
at T_A = +25 °C

²⁾ Limit values, reverse-polarity protected

³⁾ Without load

⁴⁾ May not exceed or fall short of
V_s tolerances

⁵⁾ After 30 minutes on-time

⁶⁾ Output Q short-circuit protected
⁷⁾ Reference voltage DC 50 V

Plug & Play version: measuring range freely selectable, measuring range bb to ee \leq 4 mA ... 20 mA

DT 60-P/N111Bbbee

bb: min. measuring distance⁸⁾

ee: max. measuring distance⁸⁾

02⁹⁾

53¹⁰⁾

⁸⁾ Minimum distance between bb and ee
must be 03 units (03 \leq 300 mm)

⁹⁾ 02 \leq 200 mm; 53 \leq 5300 mm
¹⁰⁾ 90% remission

1st example: measuring range 1200 mm ... 3400 mm

DT 60-P/N111B1234

4 mA \leq 1200 mm

20 mA \leq 3400 mm

2nd example: measuring range 4200 mm ... 3800 mm (Inverted characteristic curve)

DT 60-P/N111B4238

4 mA \leq 4200 mm

20 mA \leq 3800 mm

Order information

Type	Part no.	Type	Part no.
DT 60-P211B	1 025 845	DT 60-N211B	1 026 446
DT 60-N211B	1 025 846	DT 60-P211Bbbee ^{*)}	X XXX XXX
DT 60-P211B0520	1 026 444	DT 60-N211Bbbee ^{*)}	X XXX XXX
DT 60-P211B0253	1 026 445		

^{*)} Measuring range freely selectable

Great Britain

Phone +44 (0)1727 83 11 21
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USA

Phone +1(952) 941-6780
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Australia

Phone +61 3 9497 4100
tollfree +1800 33 48 02
E-Mail: sales@sick.com.au

More representatives and agencies
in all major industrial nations at
www.sick.com

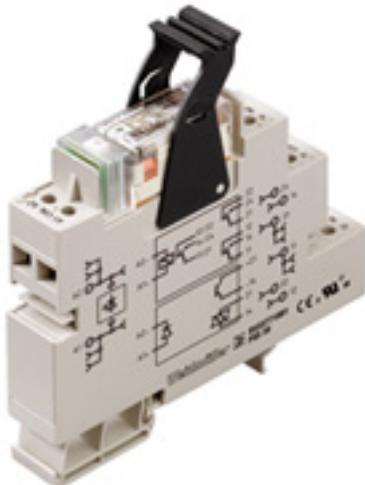
SICK
Waldkirch • Germany



PLUGSERIES

PRS 24Vdc LD 2CO

Weidmüller Interface GmbH & Co. KG
 Klingenbergsstraße 16
 D-32758 Detmold
 Germany
 Fon: +49 5231 14-0
 Fax: +49 5231 14-292083
www.weidmueller.com



High power/currents can be safely switched with the PLUGSERIES. The modular system enables conventional relays and LED indicators simply to be plugged in. Retaining and disassembly clips provide a secure mount. Pre-assembled relays with 1 or 2 changeover contacts and input voltages from 24V to 230V round off the product range. Plug-in ZQV 2.5 cross-connectors enable relay multiplexers to be set up quickly thanks to simple side-by-side mounting.

General ordering data

Order No.	8530631001
Type	PRS 24Vdc LD 2CO
Version	PLUGSERIES, Relays, No. of contacts: 2, CO contact, AgNi 90/10, Rated control voltage: 24 V DC ±10 %, Continuous current: 8 A, Screw connection
GTIN (EAN)	4032248216277
Qty.	10 pc(s).

Data sheet...**PLUGSERIES
PRS 24Vdc LD 2CO**

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 D-32758 Detmold
 Germany
 Fon: +49 5231 14-0
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Technical data**Ratings**

Conductor connection system	Screw connection	Humidity	40 °C / 93 % rel. humidity, no condensation
UL 94 flammability rating	V-0	Wire cross-section, solid, max.	2.5 mm ²

Dimensions and weights

Width	15.3 mm	Height	92 mm
Depth	95 mm	Net weight	66.7 g

Temperatures

Operating temperature	-40 °C...+50 °C	Storage temperature	-40 °C...+85 °C
-----------------------	-----------------	---------------------	-----------------

Connection data

Clamping range, rated connection	2.5 mm ²	Clamping range, rated connection, min.	0.5 mm ²
Clamping range, rated connection, max.	2.5 mm ²	Tightening torque, max.	0.7 Nm
Stripping length, rated connection	8 mm	Wire connection cross section, finely stranded, max.	2.5 mm ²

Input

Rated control voltage	24 V DC ±10 %	Rated current DC	20 mA
Coil resistance	1,440 Ω ±10 %	Power rating	400 mW
Pull-in (sparkover) / drop-out voltage DC coil	16.8 V / 2.4 V	Status indicator	Green LED

Output

Rated switching voltage	250 V AC	Max. switching voltage, AC	400 V
Continuous current	8 A	making current	15 A / 4 s
Max. switching power	2000 VA	Response time	8 ms / 6 ms
Min. switching power	100 mA / 5 V, 10 V / 10 mA, 24 V / 1 mA	Max. switching frequency at rated load	0.1 Hz

Contact specifications

No. of contacts	2	Contact design	CO contact
Contact material	AgNi 90/10	Mechanical service life	30 x 10 ⁶ switching cycles

Insulation coordination

Rated voltage	300 V AC _{eff}	Clearance and creepage distances for control side - load side	> 8 mm
Impulse withstand voltage	6 kV (1.2/50 µs)	Protection degree	IP 20
Pollution severity	2	Surge voltage category	III

Other technical data

Version	Relay coupler	Status indicator	Green LED
Free-wheel diode	No	Reverse polarity protection	No

Further details of approvals / standards

Standards	DIN EN 50178
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Creation date March 23, 2013 2:23:45 PM CET

Data sheet...**PLUGSERIES
PRS 24Vdc LD 2CO**

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Technical data**Classifications**

ETIM 2.0	EC001437
UNSPSC	30-21-19-17
eClass 5.1	27-37-16-01
eClass 7.0	27-37-16-01

ETIM 3.0	EC001437
eClass 4.1	40-02-06-14
eClass 6.0	27-37-16-01

Approvals

Approvals

**Downloads**

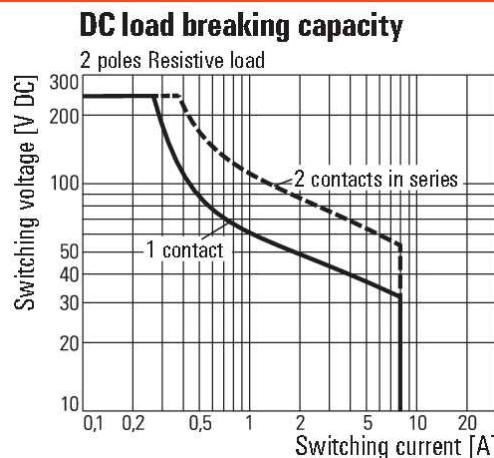
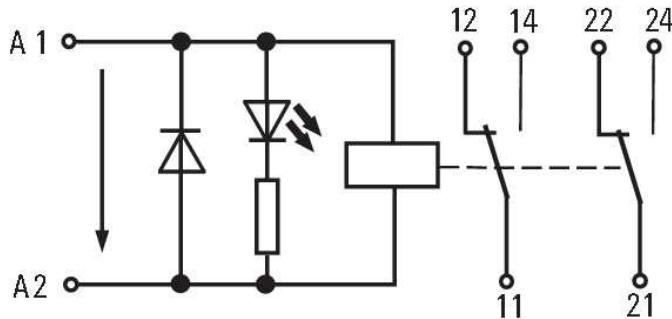
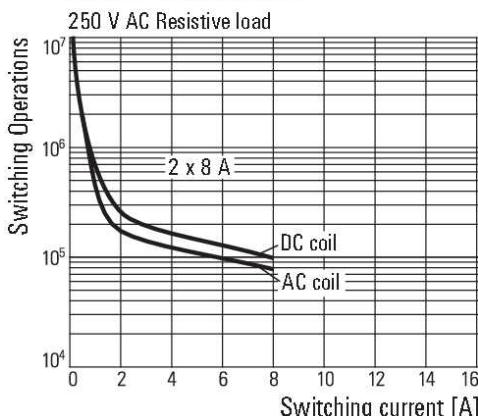
Declaration of Conformity

[K217_09_09.pdf](#)

3-D model

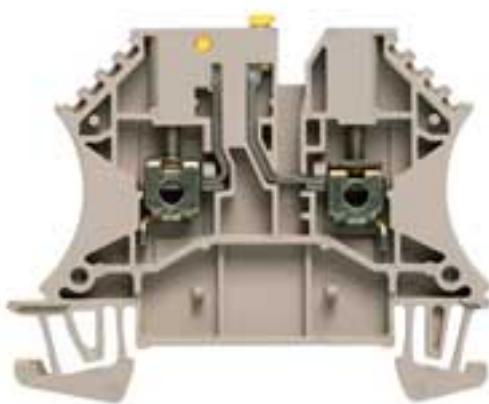
**Data sheet...****PLUGSERIES
PRS 24Vdc LD 2CO**

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Drawings**Electric symbol****DC-Version****Electrical endurance**

W-Series
WTR 2.5

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Klingenbergsstraße 16
D-32758 Detmold
Germany
Fon: +49 5231 14-0
Fax: +49 5231 14-292083
www.weidmueller.com



The versatile and extensive range of products - from 0.05 mm² to 300 mm² - means that you have diverse options for your applications at your disposal.

Hardened steel for mechanical strength and high-quality tinned copper for optimum conductivity. All materials comply with RoHS requirements and have been tested to current environment guidelines.

General ordering data

Order No.	1855610000
Type	WTR 2.5
GTIN (EAN)	4032248458417
Qty.	100 pc(s).

W-Series
WTR 2.5

Weidmüller Interface GmbH & Co. KG
 Klingenbergsstraße 16
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www.weidmueller.com

Technical data**Dimensions and weights**

Length	60 mm
Height	48 mm
Net weight	8.01 g

Width	5.1 mm
Height of lowest version	49 mm

Temperatures

Operating temperature	Storage temperature
Continuous operating temp., min.	-50 °C

Continuous operating temp., max.	120 °C
----------------------------------	--------

2 clampable wires (H05V/H07V) same cross-section (rated connection)

Wire connection cross section, finely stranded, two clampable wires, min.	0.5 mm ²
Wire connection cross section, finely stranded with wire-end ferrules DIN 46228/1, 2 clampable wires, min.	0.5 mm ²

Wire cross-section, finely stranded, two clampable wires, max.	1.5 mm ²
Wire connection cross section, finely stranded with wire-end ferrules DIN 46228/1, 2 clampable wires, max.	1.5 mm ²

Additional technical data

Explosion-tested version	No
Type of mounting	Snap-on

Open sides	right
------------	-------

CSA ratings data

Certificate No. (CSA)	154685-1152890
Current size C (CSA)	10 A
Wire cross section min. (CSA)	26 AWG

Voltage size C (CSA)	300 V
Wire cross section max. (CSA)	12 AWG

Clampable wires (additional connection)

Conductor cross-section, flexible plus plastic collar DIN 46228/1, further connection, min.	0.5 mm ²
---	---------------------

Conductor cross-section, flexible plus plastic collar DIN 46228/1, further connection, max.	2.5 mm ²
---	---------------------

Clampable wires (rated connection)

Type of connection	Screw connection
Blade size	0.6 x 3.5 mm
Clamping range, rated connection, min.	0.05 mm ²
Clamping screw	M 2.5
Tightening torque, max.	0.8 Nm
Gauge to IEC 60947-1	A3
Wire connection cross section, solid core max. rated connection	4 mm ²
Wire connection cross section, stranded, rated connection, max.	4 mm ²
Wire connection cross-section, finely stranded, min.	0.5 mm ²
Wire connection cross section, finely stranded with wire-end ferrules DIN 46228/1, rated connection, max.	2.5 mm ²
Wire connection cross section AWG, max.	AWG 12

Stripping length	10 mm
Connection direction	on side
Clamping range, rated connection, max.	4 mm ²
Tightening torque, min.	0.4 Nm
Torque level with DMS electric screwdriver	1
Wire connection cross section, solid core, max. rated connection	0.5 mm ²
Wire connection cross section, stranded, rated connection, min.	1.5 mm ²
Wire connection cross section, finely stranded, max.	4 mm ²
Wire connection cross section, finely stranded with wire-end ferrules DIN 46228/1, rated connection, min.	0.5 mm ²
Wire connection cross section AWG, min.	AWG 30

W-Series
WTR 2.5

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Technical data**Disconnect terminals**

Cross-disconnect	without	Integral test socket	No
Slitting	Pivoting	Tightening torque, max.	0.8 Nm
Tightening torque, min.	0.4 Nm	Torque level with DMS electric screwdriver	1

Rated data

Rated cross-section	2.5 mm ²	Rated voltage	500 V
Rated impulse withstand voltage	6 kV	Rated current	24 A
Current at maximum wires	24 A	Standards	IEC 60947-7-1
Pollution severity	3		

UL ratings data

Certificate No. (UR)	E60693VOL1SEC68	Voltage size C (UR)	600 V
Current size C (UR)	20 A	Conductor size Factory wiring max. (UR)	12 AWG
Conductor size Factory wiring min. (UR)	30 AWG	Conductor size Field wiring max. (UR)	12 AWG

Material data

Material	Wemid	Colour	Dark Beige
UL 94 flammability rating	V-0		

System specifications

Product family	W-Series	Type of connection	Screw connection
Connection direction	on side	Number of levels	1
Levels cross-connected internally	No	Mounting rail	TS 35
End cover plate required	Yes		

Classifications

ETIM 2.0	EC000902	ETIM 3.0	EC000902
UNSPSC	30-21-18-11	eClass 4.1	27-14-11-17
eClass 5.1	27-14-11-26	eClass 6.0	27-14-11-26
eClass 7.0	27-14-11-26		

Product information

Descriptive text technical data 2.5 mm² conductor with ferrule with plastic collar, only with order No. 1333100000 (QTY 500).

Approvals

Approvals



W-Series
WTR 2.5

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Drawings

UNIVERSAL TRANSMITTER



- Input for RTD, TC, Ohm, potentiometer, mA and V
- 2-wire supply > 16 V
- FM-approved for installation in Div. 2
- Output for current and voltage
- Universal AC or DC supply



Advanced features:

- Programmable by way of detachable display front (4501), process calibration, signal simulation, password protection, error diagnostics and help text available in several languages.

Application:

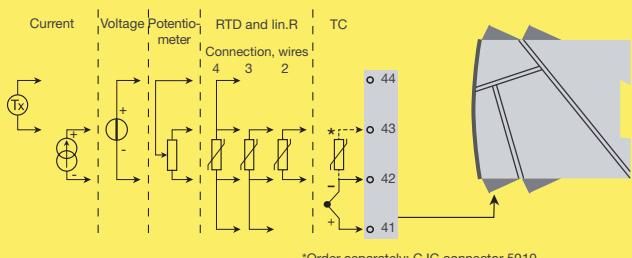
- Linearised, electronic temperature measurement with RTD or TC sensor.
- Conversion of linear resistance variation to a standard analogue current / voltage signal, i.e. from solenoids and butterfly valves or linear movements with attached potentiometer.
- Power supply and signal isolator for 2-wire transmitters.
- Process control with standard analogue output.
- Galvanic separation of analogue signals and measurement of floating signals.
- The 4114 is designed according to strict safety requirements and is thus suitable for application in SIL 2 installations.

Technical characteristics:

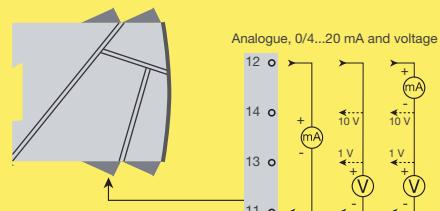
- When 4114 is used with the 4501 display / programming front, all operational parameters can be modified to suit any application. As the 4114 is designed with electronic hardware switches, it is not necessary to open the device for setting of DIP switches.
- A green / red front LED indicates normal operation and malfunction.
- Continuous check of vital stored data for safety reasons.
- 3-port 2.3 kVAC galvanic isolation.

Applications

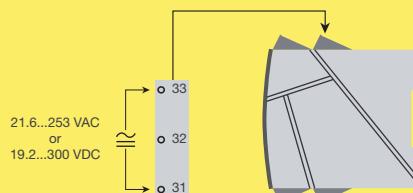
Input signals:



Output signals:



Supply:



Order codes:

- 4114 = Universal transmitter**
4501 = Display / programming front
5910 = CJC connector

**PR 4501 Display / programming front****Application:**

- Communications interface for modification of operational parameters in 4114.
- Can be moved from one 4114 device to another and download the configuration of the first transmitter to subsequent transmitters.
- Fixed display for visualisation of process data and status.

Technical characteristics:

- LCD display with 4 lines; Line 1 (H=5.57 mm) shows input signal, line 2 (H=3.33 mm) shows units, line 3 (H=3.33 mm) shows analogue output or TAG no. and line 4 shows communication status.
- Programming access can be blocked by assigning a password. The password is saved in the transmitter in order to ensure a high degree of protection against unauthorised modifications to the configuration.

Mounting / installation:

- Click 4501 onto the front of 4114.

Electrical specifications:**Specifications range:**

-20°C to +60°C

Common specifications:

Supply voltage, universal	21.6...253 VAC, 50...60 Hz or 19.2...300 VDC
Max. consumption.....	≤ 2.0 W
Fuse.....	400 mA SB / 250 VAC
Isolation voltage, test / operation.....	2.3 kVAC / 250 VAC
Communications interface	Programming front 4501
Signal / noise ratio.....	Min. 60 dB (0...100 kHz)
Response time (0...90%, 100...10%):	
Temperature input.....	≤ 1 s
mA / V input	≤ 400 ms
Calibration temperature.....	20...28°C
Accuracy, the greater of the general and basic values:	

General values

Input type	Absolute accuracy	Temperature coefficient
All	≤ ±0.1% of span	≤ ±0.01% of span / °C

Basic values

Input type	Basic accuracy	Temperature coefficient
mA	≤ ±4 µA	≤ ±0.4 µA / °C
Volt	≤ ±20 µV	≤ ±2 µV / °C
Pt100	≤ ±0.2°C	≤ ±0.01°C / °C
Linear resistance	≤ ±0.1 Ω	≤ ±0.01 Ω / °C
Potentiometer	≤ ±0.1 Ω	≤ ±0.01 Ω / °C
TC type: E, J, K, L, N, T, U	≤ ±1°C	≤ ±0.05°C / °C
TC type: R, S, W3, W5, LR	≤ ±2°C	≤ ±0.2°C / °C
TC type: B 160...400°C	≤ ±4.5°C	≤ ±0.45°C / °C
TC type: B 400...1820°C	≤ ±2°C	≤ ±0.2°C / °C

EMC immunity influence < ±0.5% of span
 Extended EMC immunity:
 NAMUR NE 21, A criterion, burst < ±1% of span

Auxiliary supplies:

2-wire supply (terminal 44...43)	25...16 VDC / 0...20 mA
Max. wire size	1 x 2.5 mm ² stranded wire
Screw terminal torque	0.5 Nm
Relative humidity	< 95% RH (non-cond.)
Dimensions, wo/w 4501 (HxBxD)	109 x 23.5 x 104/116 mm
Protection degree	IP20
Weight	145 g / 160 g with 4501

RTD, linear resistance and potentiometer input:

Input type	Min. value	Max. value	Standard
Pt10...Pt1000	-200°C	+850°C	IEC 60751
Ni50...Ni1000	-60°C	+250°C	DIN 43760
Cu10...Cu100	-200°C	+260°C	$\alpha = 0,00427$
Lin. R	0 Ω	10000 Ω	-
Potentiometer	10 Ω	100 kΩ	-

Cable resistance per wire, RTD (max.).. 50 Ω
 Sensor current, RTD Nom. 0.2 mA
 Effect of sensor cable resistance
 (3- / 4-wire), RTD < 0.002 Ω / Ω
 Sensor error detection, RTD Yes
 Short circuit detection, RTD < 15 Ω

TC input:

Type	Min. value	Max. value	Standard
B	0°C	+1820°C	IEC 60584-1
E	-100°C	+1000°C	IEC 60584-1
J	-100°C	+1200°C	IEC 60584-1
K	-180°C	+1372°C	IEC 60584-1
L	-200°C	+900°C	DIN 43710
N	-180°C	+1300°C	IEC 60584-1
R	-50°C	+1760°C	IEC 60584-1
S	-50°C	+1760°C	IEC 60584-1
T	-200°C	+400°C	IEC 60584-1
U	-200°C	+600°C	DIN 43710
W3	0°C	+2300°C	ASTM E988-90
W5	0°C	+2300°C	ASTM E988-90
LR	-200°C	+800°C	GOST 3044-84

Cold junction compensation (CJC):

via external sensor in connector 5910..... 20...28°C ≤ ±1°C
 -20...20°C / 28...70°C ≤ ±2°C

via internal CJC sensor..... ±(2.0°C + 0.4°C * Δt)
 Δt = internal temperature - ambient temperature

Sensor error detection, all TC types.. Yes

Sensor error current:

when detecting Nom. 2 µA
 else 0 µA

Current input:

Measurement range 0...20 mA
 Programmable measurement ranges. 0...20 and 4...20 mA
 Input resistance Nom. 20 Ω + PTC 50 Ω

Voltage input:

Measurement range 0...12 VDC
 Programmable signal ranges..... 0/0.2...1; 0/1...5; 0/2...10 V
 Input resistance Nom. 10 MΩ

Current output:

Signal range (span)..... 0...20 mA
 Programmable signal ranges..... 0/4...20 and 20...4/0 mA
 Load (max.)..... 20 mA / 800 Ω / 16 VDC
 Load stability ≤ 0.01% of span / 100 Ω
 Sensor error detection..... 0 / 3.5 / 23 mA / none
 NAMUR NE 43 Upscale / Downscale. 23 mA / 3.5 mA
 Current limit..... ≤ 28 mA

Voltage output:

Signal range 0...10 VDC
 Programmable signal ranges..... 0/0.2...1; 0/1...5; 0/2...10;
 1...0.2/0; 5...1/0; 10...2/0 V
 Load (min.)..... 500 kΩ

Ex / I.S. approval:

FM, applicable in..... Cl. I, Div. 2, Gr. A, B, C, D
 Class I, Div. 2, Group IIC
 Zone 2

Max. ambient temperature for T5..... 60°C

Marine approval:

Det Norske Veritas, Ships & Offshore. Stand. f. Certific. No. 2.4

GOST R approval:

VNIIM, Cert. No. www.prelectronics.com

Observed authority requirements:

Standard: EN 61326-1

LVD 2006/95/EC EN 61010-1

FM 3600, 3611, 3810 and ISA 82.02.01

UL, Standard for Safety..... UL 508

of span = of the currently selected measurement range